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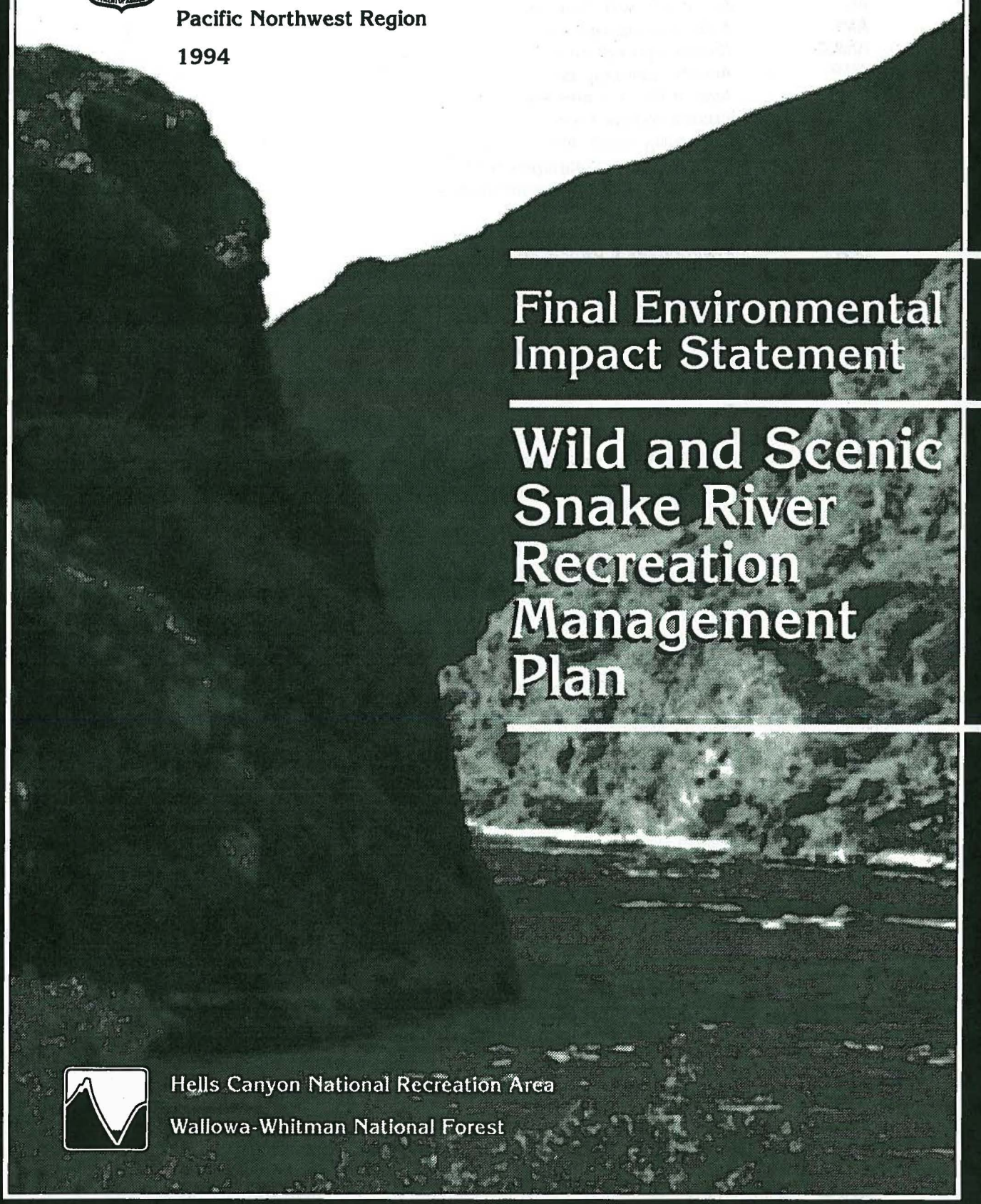
Pacific Northwest Region

1994

Final Environmental Impact Statement

Wild and Scenic Snake River Recreation Management Plan



Hells Canyon National Recreation Area

Wallowa-Whitman National Forest

ACRONYMS AND ABBREVIATIONS USED IN THE DOCUMENT

ADA	Americans with Disabilities Act
AMP	Allotment management plan
ANILCA	Alaska National Interest Land Conservation Act
AOP	Annual operating plan
AOPA	Aircraft Owners and Pilots Association
ARPA	Archaeological Resource Protection Act
BPA	Bonneville Power Administration
CMP	Comprehensive Management Plan
DEIS	Draft environmental impact statement
DFC	Desired future condition –
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Threatened and Endangered Species Act
FAA	Federal Aviation Administration
FEIS	Final environmental impact statement
FSH	Forest Service Handbook
FSM	Forest Service Manual
FWS	U.S. Fish and Game Service (same as USFWS)
GAO	Government Accounting Office
HCNRA	Hells Canyon National Recreation Area
HCPC	Hells Canyon Preservation Council
ICL	Idaho Conservation League
ID	Interdisciplinary
IDF&G	Idaho Department of Fish and Game (same as IF&G)
IF&G	Idaho Fish and Game (same as IDF&G)
IOGA	Idaho Outfitters and Guides Association
IOGLB	Idaho Outfitter and Guide Licensing Board
IRU	Idaho Rivers United
ISSU	Idaho Steelhead and Salmon Unlimited
LAC	Limits of acceptable change
NEPA	National Environmental Policy Act
NFMA	National Forests Management Act
NMFS	National Marine Fisheries Service
NRA	National recreation area
NWRA	Northwest Rafters Association
NWSRA	National Wild and Scenic River Act
ODF&W	Oregon Department of Fish and Wildlife
ONRC	Oregon Natural Resources Council
ORV	Outstandingly remarkable value
PETS	Proposed Endangered, Threatened, and Sensitive Plant Species
PMW	Personal motorized watercraft
RNA	Research natural area
ROS	Recreation opportunity spectrum
S1/2	"Solitude" alternatives submitted by HCPC
SWSR	Snake Wild and Scenic River
USFWS	U.S. Fish and Wildlife Service (Same as FWS)
VQO	Visual quality objectives
W&SR	Wild and scenic river
WSRA	Wild and Scenic Rivers Act

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Final Environmental Impact Statement for the Wild and Scenic Snake River

Hells Canyon National Recreation Area

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Abstract

This final environmental impact statement describes and documents the analysis of seven alternatives developed for possible management of the Wild and Scenic Snake River in the Hells Canyon National Recreation Area. All alternatives except Alternative A would amend the Forest Plan. Alternative A is the "no action" alternative. It retains current management strategies and would not meet desired future conditions for the corridor. Alternative B defines the proposed action. Alternative C emphasizes a balanced level of motorized and non-motorized use for the entire River corridor. Alternative D provides an opportunity for a non-motorized recreational experience in a section of the wild river and a mix of motorized and non-motorized use on the remaining wild section and entire scenic section. Alternative E is designed to allow exclusive motorized/non-motorized use on an alternating weekly schedule during the regulated season in a portion of the wild section. Alternative F would provide exclusive, year-long non-motorized use in the wild river section. Alternative G was developed between the draft and final environmental impact statements in response to public comments and emphasizes a balance of motorized and non-motorized use. It includes periods of exclusive non-motorized use in a portion of the wild river. Alternative G is the Forest Service preferred alternative.

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SUMMARY

INTRODUCTION

The Wallowa-Whitman National Forest proposes to amend the Forest Land and Resource Management Plan to set recreation use allocations in the Wild and Scenic Snake River corridor within the Hells Canyon National Recreation Area (HCNRA).

This summary of the Final Environmental Impact Statement for the Wild and Scenic Snake River Recreation Management Plan highlights the following:

Description of the planning area
Purpose and need for this EIS
Issues
Description of the alternatives
Comparison of the alternatives

PROJECT AREA DESCRIPTION

The Wild and Scenic Snake River runs north from the Hells Canyon Dam to the Oregon-Washington border and forms the the northern portion of the boundary between Oregon and Idaho. The Act establishing the Hells Canyon NRA designated 67.5 miles of the Snake River as wild and scenic, classified into the following segments:

WILD RIVER: The 31.5 miles from Hells Canyon Dam to Pittsburg Landing.

SCENIC RIVER: The 36.0 miles from Pittsburg Landing to the northern boundary of the Wallowa-Whitman National Forest.

STUDY RIVER: Four miles of river frontage added to Forest Service ownership and management with the acquisition of property at Cache Creek and included in this analysis.

The river corridor is approximately a quarter-mile on each side of the high-water mark. Hells Canyon Wilderness is adjacent to the corridor along southern portions of the river in both Oregon and Idaho but does not include the wild and scenic corridor (reference Figure I-1).

PURPOSE AND NEED

The need for the proposed action is derived from Forest Service visitor use reports showing a 147% increase in visitor use during the primary season from 1979 to 1991; from the "Visitor Profile and Recreational Use Study" (Visitor Use Study) developed by the University of Idaho's College of Forestry, Wildlife, and Range Sciences; and from the "Recommended Limits of Acceptable Change Recreation Management Plan for the Snake River" developed through the LAC planning process.

The Visitor Use Study, completed in 1989, highlighted a concern that the increase in recreation use in the river corridor was negatively impacting visitors' recreation experiences. Based on this conclusion, Forest Service personnel concerned with protecting the outstandingly remarkable values (ORV's) of the river corridor and reducing visitor conflicts in Hells Canyon entered into a cooperative agreement with the University of Idaho to develop a limits of acceptable change planning process. The objective of the planning process was to recommend management actions that would protect resources and minimize conflicts.

Based on the recommendations presented in the LAC report, the proposed action would provide managers with specific strategies for implementation of the Forest Plan.

The following explanations of the need for action correspond to specific components of the proposed action:

- Provide for access to aviators on the Oregon side of the river for fishing and camping by proposing to open airstrips to private aircraft.

- Make use allocations to river users that are equitable and that manage continuing growth in visitor use.

- Initiate a closure on motorized personal watercraft to protect and enhance the diverse recreational users' experiences and provide protection for fisheries and wildlife resources.

- Refine management of the floatboat use levels in addition to protecting and enhancing the recreation resources and the associated recreation experience for the diverse groups of river users.

- Establish use season, party size, campsite stay limits, and recreation experiences.

ISSUES

An important step in the planning process is the identification of public issues and management concerns. This was accomplished through an extensive scoping process involving interested and affected individuals, representatives of special interest and user groups, and concerned State and Federal agencies. Contacts were made through publications, mailings, and public meetings.

These issues are the focus for formulating alternatives to the proposed action.

Each issue discussed in this chapter has one or more associated key indicators. Key indicators are select units of measure of how, or to what degree, each alternative responds to the issue. Key indicators are responsive to changes in effects and are measurable and predictable. They provide the decision maker with a basis for comparing the alternatives.

PROTECTION OF THREATENED AND ENDANGERED SALMON

Recreation use allocation should be consistent with the protection and enhancement of threatened and endangered salmon fisheries and habitat in the river corridor.

Many people questioned what effect varying recreation use levels in the river corridor could have on threatened and endangered salmon fisheries and habitat. Specifically, they were concerned about potential effects of exhaust emissions and fuel and oil discharge from motorized craft on salmon fisheries. The potential effect of motorized and non-motorized craft passing over salmon spawning areas was an additional concern.

Other comments expressed concerns over the potential effects on salmon fisheries and habitat from recreation activities such as swimming and fishing.

Key Indicators:

- Potential for species to be inadvertently hooked by anglers.

- Potential for boat disturbance on migration/spawning behavior.

- Potential for boat disturbance to eggs/ embryo in redds.

- Potential for species to be disturbed while in tributary stream.

EFFECTS OF RECREATION USE REGULATION ON SOCIO-ECONOMICS CONDITIONS

Regulation of recreation use could affect the socio-economic condition of current and future river users, recreation-related businesses, and related community and regional infrastructures.

Many comments focused on the potential socio-economic impacts on private recreationists who own motorized or non-motorized craft and how the proposed recreation use allocations may affect their ability to use their craft as they have in the past. In addition, many people felt the Forest Service should view recreation use allocations from a regional perspective. Specifically, the Wild and Scenic Snake River is one of the few remaining whitewater rivers in the region available for motorized use and should remain as such.

Other comments were related to the potential effects recreation use allocations may have on recreation-related businesses such as powerboat manufacturing, motorized and non-motorized commercial operators, and retail sporting goods. Additional concerns were expressed regarding the potential effects on related community and regional service industries such as restaurants, service stations, and lodging.

Key Indicators:

- Total commercial permittee revenue.
- Total associated expenditures by recreationists.
- Number and type of recreational users displaced by proposed regulations.
- River corridor management costs.

MANAGING FOR THE INTENDED RECREATION EXPERIENCE

The establishment of appropriate and equitable levels of boating and aircraft use should meet the intended recreation experience within the wild and scenic river.

This is a complex issue, and the comments represented a wide spectrum of opinion and concern regarding appropriate use levels within the river corridor. Many perspectives concerning this issue related to powerboat use levels within the wild section, equitable levels of allocation between powerboaters and floatboat users, equitable levels of allocation between commercial and private boaters, and whether motorized personal watercraft are appropriate within the scenic section.

An additional component of the issue concerned opening Sluice Creek and Cache Creek airstrips and the resulting effect on the intended recreation experience within the wild and scenic sections.

A majority of comments on recreation use focused on the compatibility of competing uses and the effects of noise from motorized watercraft and aircraft in relation to the intended recreation experience for non-motorized users on the wild and scenic sections.

Comments regarding campsite stay limits addressed a fear that the proposed limits were constraining. Specifically, people felt limits would eliminate opportunities for river parties to enjoy long weekends or extended stays, particularly in the wild section during the primary season. Other people felt the limits in the secondary season would conflict with stays of hunting parties.

Many comments supported developing a campsite reservation system as a means of resolving conflicts over campsite competition and ensuring user accountability, with an expressed concern that the system be equitable between the various river users, including aviators, hikers, and horsepackers.

Key Indicators:

Using the ROS classes, evaluate each alternative's ability to protect and enhance the recreation ORV and DFC's, through the following settings:

- Degree of providing access.
- Degree of providing remoteness.
- Degree of social encounters.
- Degree of visitor management.
- Degree of facilities and site management.
- Degree of user fairness and equitability.

MINIMIZE ONSHORE DEGRADATION

Party size restrictions, solid human waste carryout, and campsite stay limits should minimize onshore impacts from recreational users.

Comments on party size were concerned with the impact parties may have on the physical resources. Additionally, some comments were concerns about the ability to hold special events on the river that would result in parties exceeding 30 people.

Comments on the proposal for phasing out pit toilets and initiating a human solid waste carryout system were varied. Many expressed support for such a system, providing the system would be environmentally and aesthetically sound. Others expressed concern that a timeline for installation of a solid human waste carryout system be developed. Other comments suggested the system was unnecessary, an inconvenience to all parties and there were alternative methods to a carryout system.

Key Indicators:

- Risk of visitor impacts from onshore recreation use on:
  - Proposed, endangered, threatened, and sensitive plant species and habitat
  - Cultural resources

OTHER ISSUES

Some additional issues, concerns, and opportunities for river management were identified during scoping and have been addressed by establishing management elements, mitigation measures, and monitoring.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

The proposed action was developed from recommendations resulting from the LAC planning process. A Forest Service interdisciplinary team (ID team) of resource specialists used opinions, comments, and suggestions gathered at internal and public scoping meetings to help define key issues identified in the proposed action. Alternative themes were developed by the ID team to respond to the issues generated by analyzing the proposed action. Alternatives were also submitted by special interest groups for consideration in the alternative development process. The alternatives carried forward for detailed study are designed to resolve the significant issues surrounding the proposed action.

ALTERNATIVE A - NO ACTION

This is the "No Action" alternative as required by the National Environmental Policy Act. This alternative would not implement the proposed actions and provides a baseline in which to evaluate the action alternatives. Current Forest Plan management direction would remain in effect until the Forest Plan is revised.

Implementation of this alternative would not contribute toward meeting the purpose and need for action or the desired future condition. Projected use levels for the wild and scenic sections would not lead the river corridor toward the DFC's established for the identified ORV's, short- or long-term. The effects of Alternative A are used as a frame of reference to compare the effects of implementing the action alternatives.

ALTERNATIVE B - PROPOSED ACTION

This alternative was used in the scoping process to identify issues and generate a variety of concepts for designing alternatives to the proposed action. The recommendations from the LAC planning process, developed by the Forest Service as the proposed action, are the components of the alternative.

Implementation of this alternative would rapidly move the wild section to the DFC's by providing a blend of motorized and non-motorized whitewater boating opportunities during the primary season. Unlimited motorized access in the scenic section would not lead that section toward the DFC for an appropriate and equitable level of motorized and non-motorized access in support of the protection and enhancement of the outstandingly remarkable values.

ALTERNATIVE C

This alternative is designed to specifically address the significant issues of the protection of threatened and endangered salmon, managing for the intended recreation experience, and minimizing onshore degradation by emphasizing a balanced allocation of motorized and non-motorized use levels within the entire corridor. Moderate use levels for both private and commercial users would be allocated from an

average of the 1985 through 1989 use levels, for both the wild and scenic sections.

The entire river corridor would be managed for a semi-primitive motorized setting, requiring launch reservations for all river users in the entire river corridor and campsite reservations in the wild section.

Implementation of this alternative would rapidly move the entire river corridor to the DFC's by providing an appropriate and equitable blend of motorized and non-motorized whitewater boating opportunities within the entire river corridor, during the primary season. Additionally, the moderate and balanced use levels would quickly lead toward meeting the DFC's for the protection and enhancement of the identified ORV's within the entire river corridor.

ALTERNATIVE D

This alternative is designed to specifically address the significant issues of the protection of threatened and endangered salmon, managing for the intended recreation experience, and minimizing onshore degradation by emphasizing, during the primary season, the opportunity for a non-motorized recreation experience within Hells Canyon Dam to the Kirkwood Historic Ranch portion of the wild section. During the secondary season, a motorized recreation experience would be provided. Within the wild section, from Kirkwood Historic Ranch to Pittsburg Landing, a blend of motorized and non-motorized use would be provided during the primary season. Motorized use would be emphasized within the scenic section.

The non-motorized portion of the wild section would be managed to provide a semi-primitive non-motorized recreation setting during the primary season, requiring launch and campsite reservations for floatboaters. The remainder of the wild section and the entire scenic section would be managed to provide a semi-primitive motorized recreation setting.

While providing a seasonal approach to an appropriate and equitable blend of motorized and non-motorized whitewater boating opportunities, implementation of this alternative would not move the section between Hells Canyon Dam and Kirkwood Historic Ranch quickly or equitably toward the DFC's. The alternative would lead the wild section from Kirkwood Historic Ranch to Pittsburg Landing rapidly toward the established DFC's by providing a blend of motorized and non-motorized use levels and equitable access to the Kirkwood Historic Ranch. Although the scenic section would emphasize motorized use, the prohibited launching of floatcraft in the scenic section would not move this section toward the established DFC's.

ALTERNATIVE E

This alternative is designed to specifically address the significant issues of the protection of threatened and endangered salmon, effects of recreation use regulation on socio-economic conditions, managing for the intended recreation experience, and minimizing onshore degradation. These issues would be resolved by emphasizing, during the primary season, the opportunity for alternating weeks of exclusive motorized and exclusive non-motorized recreation use in the wild section from Hells Canyon Dam to the Kirkwood Historic Ranch. During the secondary season, a blend of motorized and non-motorized recreation experiences would be provided. Within the wild section, from Kirkwood Historic Ranch to Pittsburg Landing, a blend of motorized and non-motorized use would be provided during the primary season. Regulated motorized use would be emphasized within the scenic section.

Hells Canyon Dam to the Kirkwood Historic Ranch section of the wild river would be managed to provide both a semi-primitive non-motorized and semi-primitive motorized recreation settings during their respective week of exclusive use through the primary season. The remainder of the wild section and the entire scenic section would be managed to provide a semi-primitive motorized recreation setting.

Implementation of this alternative would rapidly move the wild section, from Hells Canyon Dam to the Kirkwood Historic Ranch, toward the DFC's by providing an exclusive weekly approach to an appropriate and equitable blend of motorized and non-motorized whitewater boating opportunities. The alternative would lead

the wild section, from Kirkwood Historic Ranch to Pittsburg Landing, rapidly toward the established DFC's by providing a blend of motorized and non-motorized use levels and equitable access to the Kirkwood Historic Ranch. The regulated motorized and non-motorized use within the scenic section would rapidly move this portion of the river toward its DFC's by emphasizing the protection and enhancement of the ORV's.

ALTERNATIVE F

This alternative is designed to specifically address the significant issues of the protection of threatened and endangered salmon and minimizing onshore degradation. These issues would be resolved by emphasizing an exclusive non-motorized recreation experience in the entire wild section, year-round. A motorized recreation experience would be emphasized within the scenic section, year-round.

The wild section would be managed to provide a primitive recreation setting, while requiring launch reservations. The scenic section would be managed to provide a semi-primitive motorized recreation setting.

While providing a primitive non-motorized recreation setting in the wild section, implementation of this alternative would not move the wild section toward its DFC's established for providing appropriate and equitable level of access or to Kirkwood Historic Ranch. Although the scenic section would emphasize motorized use, the prohibited launching of floatcraft in the Scenic section would not move this section toward the established DFC's for this section of river.

ALTERNATIVE G - PREFERRED

This alternative is specifically designed to address the significant issues and the diverse public comments received on the DEIS. These issues and public comments are resolved or partially resolved by emphasizing, during July and August of the primary season, a balanced allocation of motorized and non-motorized use levels within the wild section four days of the week, in addition to providing an opportunity for a three-day non-motorized experience within a portion of the wild section. The emphasis for the remainder of the primary season (May, June, and September) would be for a balanced allocation of motorized and non-motorized use levels.

The three-day non-motorized period is designed to occur during the historically lowest use periods for motorized users (Monday through Wednesday) between Wild Sheep Rapids and Kirkwood Historic Ranch (approximately 21 miles or 66% of the wild section) to provide non-motorized users with extended periods of remoteness by limiting encounters with other river users. The non-motorized period would be implemented for eight weeks during the primary season for a total of approximately 24 days annually (approximately 22% of the primary season). Annual monitoring of users' perceptions and recreation experiences would be conducted to determine the long-term durability and feasibility of the non-motorized period.

During the secondary season, use levels within the entire wild section would not be regulated for either motorized or non-motorized users. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Management within the scenic section during the primary season would focus on providing a semi-primitive motorized experience. Daily use levels would reflect historical use patterns that provide maximum opportunities on weekends for motorized users, while providing a more shared-use level for those non-motorized trips that either continue into or initiate in the scenic section.

During the secondary season, use levels would not be regulated within the entire scenic section for either motorized or non-motorized users.

Following are tables which summarize the management requirements for each alternative.

Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
PRIVATE POWER-BOAT USE							
Wild (Dam to Kirkwood)	P&S-Unlimited use	P-max 635 permits/ season 16 launches/ day F/Sa and 8 launches/days Su-Th S-Unlimited use	P-4 launches/day S-Unlimited use	P-No motorized use S-Unlimited use	P-Exclusive motorized use Th-W on alternating weeks. Daily max of 24 launches at any one time. S-Unlimited use	P&S-No motorized use.	P-6 launches/day except no motorized use M-W Wild Sheep to Kirkwood in July and August S-Unlimited use
Wild (Kirkwood to Pittsburg)	P&S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Unlimited until use reaches an avg of 6 launches/day S-Unlimited use	P-Same except for alt off week, daily max of 8 launches/day S-Unlimited use	P&S-No motorized use	P-Included in above allocation S-Unlimited use
Scenic	P&S-Unlimited use	P&S-Unlimited use	P-5 launches/day S-Unlimited use	P-Unlimited until use reaches an avg of 13 launches/day S-Unlimited use	P-10 launches/day M-Th. 20 launches/ day F-Su. S-Unlimited use	P-Unlimited until use reaches an avg of 13 launches/day S-Unlimited use	P-10 launches/day M-Th, 20 launches/day F-Su plus 5 day-use only. S-Unlimited use
PERSONAL MOTORIZED WATERCRAFT							
Wild (Dam to Kirkwood)	R&U - Excluded	R&U - Excluded	R&U - Excluded	R&U -Excluded	R&U - Excluded	R&U - Excluded	R&U - Excluded
Wild (Kirkwood to Pittsburg)	R&U - Excluded	R&U - Excluded	R&U - Excluded	R&U -Excluded	R&U - Excluded	R&U - Excluded	R&U - Excluded
Scenic	R&U - Excluded	R&U - Excluded	R&U - Excluded	R-1 daily permit of up to 4 craft. U-Unlimited use	R-1 daily permit of up to 4 craft between northern boundary and Salmon River. U-Unlimited use between northern boundary and Salmon River.	R&U - Excluded	R&U - Excluded

P = Primary
S = Secondary

Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
COMMERCIAL POWERBOAT USE							
Wild (Dam to Kirkwood)	P&S-Unlimited use	P-max 1368 launch-days/season avg 12 launches/day S-Unlimited use	P-Daily max 4 launches S-Unlimited use	P-No motorized use S-Unlimited use	P-Exclusive motorized use Th-W on alternating weeks. Daily max of 12 launches (max of 6 for overnight trips) S-Unlimited use	P&S-No motorized use.	P-7 launches/day except no motorized use M-W Wild Sheep to Kirkwood in July and August S-Unlimited use
Wild (Kirkwood to Pittsburg)	P&S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Daily max 6 launches S-Unlimited use	Same except for alt off week allow daily max 4 launches/day S-Unlimited use	P&S-No motorized use	P-Included in above allocation S-Unlimited use
Scenic	P&S-Unlimited use	P&S-Unlimited use	P-Daily max 5 launches S-Unlimited use	P-Unlimited until use averages 8 launches/day S-Unlimited use	P-included in wild allocation for alt on week. Alt. off week allow 8 launches/day S-Unlimited use	P-Unlimited until use averages 9 launches/day S-Unlimited use	P-6 launches/day No overnight except at Copper Creek S-Unlimited use
PRIVATE FLOAT-CRAFT USE							
Wild (Dam to Kirkwood)	P-3 launches/day S-Unlimited use	P-348 launches/season with max 3 launches/day S-Unlimited use	P-3 launches/day S-Unlimited use	P-3 launches/day S-Unlimited use	P-Exclusive non-motorized use Th-W on alternating weeks. Max 4 launches/day S-Unlimited use	P-Max 100 users/day, comm and pvt S-Unlimited use	P-3 launches/day S-Unlimited use
Wild (Kirkwood to Pittsburg)	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use
Scenic	P&S-Unlimited use	P&S-Unlimited use	P-Average 1 launch/day, comm or pvt, from Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use	P-No launches at Pittsburg or Dug Bar S-Unlimited use	P-Average 1 launch/day, comm or pvt, from Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use	P-No launches at Pittsburg or Dug Bar S-Unlimited use	P-Average 1 launch/day, comm or pvt, from Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use

P = Primary
S = Secondary

Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
COMMERCIAL FLOATCRAFT USE							
Wild (Dam to Kirkwood)	P-2 launches/day, 1 one-day trip M-F S-Unlimited use	P-232 launches/ season with max 2 launches/day; 2 one-day trips included in seasonal launch max) S-Unlimited use	P-2 launches/day one-day trips would be included in multi-day allocations S-Unlimited use	P-2 launches/day and no one-day permits S-Unlimited use	P-Exclusive non-motorized use Th-W on alternating weeks with limit of 3 launches/day S-Unlimited one-day trips w/jetbacks	P-Max 100 users/day, comm and pvt S-Unlimited use	P-2 launches/day one-day trips would be included in multi-day allocations S-Unlimited use
Wild (Kirkwood to Pittsburg)	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use
Scenic	P&S-Unlimited use	P&S-Unlimited use	P-Allow average of 1 launch/day, comm or pvt, Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use	P-No launches from Pittsburg or Dug Bar S-Unlimited use	P-Allow average of 1 launch/day, comm or pvt, Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use	P-No launches from Pittsburg or Dug Bar S-Unlimited use	P-Allow average of 1 launch/day, comm or pvt, Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use
LAUNCH RESERVATIONS							
Wild (Dam to Kirkwood)	P-Required for floatcraft only S-Not required	P-Required for floatcraft only S-Not required	P-Required for all river users S-Not required	P-Required for floatcraft S-Not required	P-Required for all river users S-Not required	P-Required for floatcraft S-Not required	P-Required for all river users S-Not required
Wild (Kirkwood to Pittsburg)	P-Required for floatcraft only S-Not required	P-Required for floatcraft only S-Not required	P-Required for all river users S-Not required	P-Required for floatcraft S-Not required	P-Required for all river users S-Not required	P-Required for floatcraft S-Not required	P-Required for all river users S-Not required
Scenic	P&S-Not required	P&S-Not required	P-Required for all river users S-Not required	P&S-Not required	P-Not required exc F-Su for powerboats S-Not required	P&S-Not required	P-Required for all river users S-Not required

P = Primary
S = Secondary

Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
NAVIGATION MARKERS							
Wild (Dam to Kirkwood)	In	Out	In	Out	Out	Out	Out
Wild (Kirkwood to Pittsburg)	In	Out	In	Out	In	Out	In
Scenic	In	In	In	In	In	In	In
PICNIC TABLES							
Wild (Dam to Kirkwood)	In	In	Out except at Kirkwood	Out except at Kirkwood	Out except at Kirkwood	Out	Out except at Kirkwood
Wild (Kirkwood to Pittsburg)	In	In	Out except at Kirkwood	Out except at Kirkwood	Out except at Kirkwood	Out	Out except at Kirkwood
Scenic	In	In	In	In	In	In	In
AIRCRAFT USE							
Wild (Dam to Kirkwood)	Big Bar open, Sluice Creek closed	Big Bar and Sluice Creek open	Big Bar and Sluice Creek open	P-Big Bar and Sluice Creek would be closed except for emergencies S-Open	P-Big Bar and Sluice Creek open on motorized weeks and closed except for emergencies on non-motorized weeks S-Open	Big Bar and Sluice Creek would be closed except for emergencies	Big Bar open to private aircraft year-round. Sluice Creek would be closed primary season only
Wild (Kirkwood to Pittsburg)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scenic	Cache Creek closed; Dug Bar, Pittsburg, and Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open

P = Primary
S = Secondary

Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
CAMPSITE STAY LENGTH							
Wild (Dam to Kirkwood)	P-5 nights except 1 night at Saddle and Granite S-14 nights	P-2 nights S-6 nights	P-5 nights S-7 nights	P-2 nights S-7 nights	P-2 nights for float parties, 4 nights for powerboat parties S-7 nights all users	P-2 nights S-7 nights	P-2 nights S-7 nights
Wild (Kirkwood to Pittsburg)	P-5 nights S-14 nights	P-2 nights S-6 nights	P-5 nights S-7 nights	P-2 nights S-7 nights	P-2 nights for float parties, 4 nights for powerboat parties S-7 nights all users	P-2 nights S-7 nights	P-2 nights S-7 nights
Scenic	P-5 nights S-14 nights	P-4 nights S-6 nights	P-5 nights S-7 nights	P-5 nights S-7 nights	P-5 nights S-7 nights	P-5 nights S-7 nights	P-3 nights S-14 nights
DROP CAMP USERS							
Wild (Dam to Kirkwood)	P&S-Self-issued permits required	P-Campground reservations required S-Self-issued permits required	P-Campground reservations required S-Self-issued permits required	P&S-No drop camps allowed	P-Campground reservations required float only. No drops allowed on non-motorized weeks S-Self-issued permits required	P&S-No drop camps allowed	P-No drop camps allowed S-Self-issued permits required
Wild (Kirkwood to Pittsburg)	P&S-Self-issued permits required	P-Campground reservations required S-Self-issued permits required	P-Campground reservations required S-Self-issued permits required	P&S-No drop camps allowed	P-not required S-Self-issued permits required	P&S-No drop camps allowed	P-No drop camps allowed Self-issued permits required
Scenic	P&S-Self-issued permits required	P&S-Self-issued permits required	P&S-Self-issued permits required	P&S-Self-issued permits required	P&S-Self-issued permits required	P&S-Self-issued permits required	P-No drop camps allowed S-Self-issued permits required
CAMPSITE RESERVATIONS							
Wild (Dam to Kirkwood)	P-Management option	P-Required	P-Required	P&S-Not required	P-Required for floatcraft S-Not required	P&S-Not required	P&S-Not required
Wild (Kirkwood to Pittsburg)	P-Management option	P-Required	P-Required	P&S-Not required	P&S-Not required	P&S-Not required	P&S-Not required
Scenic	P-Management option	P&S-Not required	P&S-Not required	P&S-Not required	P&S-Not required	P&S-Not required	P&S-Not required

P = Primary
S = Secondary

CHAPTER I
PURPOSE AND NEED FOR ACTION

INTRODUCTION

The Wallowa-Whitman National Forest proposes to amend the Forest Land and Resource Management Plan to set recreation use allocations in the Wild and Scenic Snake River corridor within the Hells Canyon National Recreation Area (HCNRA). Proposed allocations were derived through the Hells Canyon limits of acceptable change (LAC) planning process which produced "Recommended Limits of Acceptable Change Recreation Management Plan for the Snake River" (reference the analysis file).

New management direction resulting from the decision on this Environmental Impact Statement (EIS) will amend the Wallowa-Whitman National Forest Land and Resource Management Plan (Forest Plan). Implementation is scheduled for January 1995.

This amendment is considered a non-significant amendment to the Forest Plan in terms of the implementing regulations of the National Forest Management Act of 1976 (36 CFR 219.10 (e) and (f)), Forest Service Manual 1922.51 and 1922.52, and Forest Service Handbook 1909.12 5.32.

Preparation of this EIS is in accordance with the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), plus the associated National Forest System Land and Resource Planning Regulations (36 CFR 219).

Preparation of this EIS is required by the National Environmental Policy Act of 1969 (NEPA), the Council of Environmental Quality NEPA Regulations (40 CFR 1500), and the implementing regulations of NFMA (36 CFR 219).

DESCRIPTION OF PROPOSED ACTION

The proposed action has been developed using recommendations from an LAC planning process. The components of the proposed action are considered connected actions in that they are closely related Federal actions and should, therefore, be analyzed and considered in this EIS. The proposed action is as follows:

REGULATE AIRCRAFT USE LEVELS

Open Sluice Creek (wild section) and Cache Creek (study section) airstrips to private fixed wing and rotary aircraft.

Prohibit private and commercial floatplane landings on the wild and scenic sections of the river during the primary season.

Limit recreational fixed wing and rotary aircraft landings to designated public airstrips in the river corridor.

Require self-issued permits at public airstrips in the river corridor.

ALLOCATE POWERBOAT USE LEVELS

Limit commercial powerboat use to 1,368 boat days, including jetbacks for floatboaters, during the primary season in the wild section of the river.

Maintain no more than 19 special use permits for commercial powerboat use in the river corridor.

Manage party size on commercial powerboats by requiring single deck boats of less than 44 feet in length and a maximum of 49 passengers on all sections of the river.

Initiate a regulated permit system for private powerboats, allocating a maximum of 635 permits for the primary season (from Pittsburg Landing to Hells Canyon Dam), with the following provisions:

- Allow up to a total of 16 daily launches on weekend days (Friday and Saturday), with 8 daily launches above Rush Creek, and 4 of the 8 launches above Granite Creek;
- Allow up to a total of 8 launches on weekdays (Sunday through Thursday), with 4 launches above Rush Creek, and 2 of the 4 launches above Granite Creek.
- Remove navigation markers from the wild river section in cooperation with the Corp of Engineers.

INITIATE CLOSURE ON MOTORIZED PERSONAL WATERCRAFT

Initiate a permanent closure on motorized personal water vehicles on the scenic river downstream from Pittsburg Landing through the study river to the northern boundary of the HCNRA.

ALLOCATE FLOATBOAT USE LEVELS

Maintain no more than 16 special use permits for commercial float outfitters on all segments of the river. This includes:

- Up to two one-day commercial special use permits authorizing day-use only. These would be issued to two different outfitters operating between Hells Canyon Dam and Pittsburg Landing. The permits would allow a maximum of 2 boat launches per day, on alternating days, seven days a week, year-round. Only commercial outfitters with one-day permits could offer one-day trips. One multi-day commercial float permit could be converted to a one-day commercial float permit to meet these objectives.
- Up to five launches per day by private and multi-day commercial users, plus 1 launch per day by a one-day outfitter. A maximum of 590 launches during the primary season would be maintained, with multi-day trips having priority over one-day trips.

ESTABLISH USE SEASON, PARTY SIZE, AND CAMPSITE STAY LIMITS, AND RECREATION EXPERIENCE

Establish primary season from the Friday before Memorial Day through September 10.

Establish a year-round maximum party size of 30 persons for overnight camping for all river sections.

Maintain a maximum limit of 30 floatcraft per permitted party.

Limit camping for all users to two nights per site in the wild section and four nights per site in the scenic and study sections during the primary season.

Limit camping for all users to six nights at all campsites during the secondary season.

Maintain picnic tables at dispersed river campsites.

Provide an education program, located at portals, to increase users' awareness of river etiquette and understanding of management practices.

Phase out pit toilets at all dispersed river campsites. Initiate a solid human waste carryout program for river users once adequate carryout and disposal systems are available.

Develop regulations for drop camp users, horsepackers, and backpackers that are compatible with regulations established for river users.

Remove the non-conforming metal shed upstream from the Pittsburg Administrative Site and the metal silos at the Kirkwood Historic Ranch.

Note: Other recommendations from the LAC planning process have already been administratively implemented or are being considered for implementation through other ongoing envi-

ronmental analyses. Reference the analysis file for further discussion.

PURPOSE AND NEED

The need for the proposed action is derived from Forest Service visitor use reports showing a 147% increase in visitor use during the primary season from 1979 to 1991; from the "Visitor Profile and Recreational Use Study" (Visitor Use Study) developed by the University of Idaho's College of Forestry, Wildlife, and Range Sciences; and from the "Recommended Limits of Acceptable Change Recreation Management Plan for the Snake River" developed through the LAC planning process (reference the analysis file).

The Visitor Use Study, completed in 1989, highlighted a concern that the increase in recreation use in the river corridor was negatively impacting visitors' recreation experiences. Based on this conclusion, Forest Service personnel concerned with protecting the outstandingly remarkable values (ORV's) of the river corridor and reducing visitor conflicts in Hells Canyon entered into a cooperative agreement with the University of Idaho to develop a limits of acceptable change planning process. The objective of the planning process was to recommend management actions that would protect resources and minimize conflicts.

Based on the recommendations presented in the LAC report, the proposed action would provide managers with specific strategies for implementation of the Forest Plan.

The following explanations of the need for action correspond to specific components of the proposed action:

REGULATE AIRCRAFT USE LEVELS

The Forest Service has responded to the need for access to aviators on the Oregon side of the river for fishing and camping by proposing to open Sluice Creek and Cache Creek airstrips to private aircraft. The underlying need is to manage aviation use to protect and enhance the outstandingly remarkable recreation values of the river corridor by providing additional access for aviators. The need also corresponds with monitoring aircraft use levels to ensure the protection and enhancement of the wildlife and recreation ORV's.

The Visitor Use Study noted only 8% of the recreationists surveyed said aircraft flying overhead detracted from their recreation experience, although 59% of them favored or would accept restricting aircraft landings in the corridor.

ALLOCATE POWERBOAT USE LEVELS

The Forest Service has identified the need to make allocations that are equitable to river users and that manage continuing growth in visitor use. The underlying needs of the proposal are to protect the recreation, fisheries, and wildlife ORV's of the river corridor, provide for fewer encounters between different types of users and associated noise, provide for the safety of the diverse groups of river users, and avoid the negative visual impact of "double decked" powerboats and navigation markers.

Forest Service visitor use reports show a 147% increase in visitor use during the primary season from 1979 to 1991. The Visitor Use Study noted 35% of the recreationists surveyed felt the river was crowded. Conflicts and complaints between the diverse user groups are common (Cole, 1989).

The identification of the diverse ORV's for the river corridor reveals the biologically sensitive fisheries and wildlife resources and highlights the underlying need to ensure the protection and enhancement of those ORV's in allocating powerboat use levels.

The need for length and capacity restrictions on commercial powerboats is based on concerns about the potential negative visual appearance of "double decked" boats and potential boat wake effect on other recreationists.

Limiting private powerboat permits in the wild river to a maximum of 635 in the primary season was derived in part from the Visitor Use Study. It reported that overall, 35% of the visitors felt crowded and 89% favored or would accept additional regulations if they were needed and if

they were applied equally to all river users. Additionally, 94% of the visitors surveyed favored or would accept maintaining the existing river experience if guidelines for managing the river were revised.

The removal of navigation markers from the wild section of river is derived from the need to provide for the intended recreation experience in a wild river setting.

INITIATE CLOSURE ON MOTORIZED PERSONAL WATERCRAFT

The Forest Service is responding to the need to initiate a permanent closure on motorized personal watercraft in the scenic section to protect and enhance the diverse recreational users' experiences and safety as part of the recreation ORV. The action is further derived from the need to protect the fisheries and wildlife ORV's from the very mobile motorized personal watercraft.

The need to eliminate motorized personal watercraft from Pittsburg Landing to Cache Creek is derived in part from the Visitor Use Study in which it was noted 77% of the visitors surveyed favored or would accept eliminating motorized personal watercraft use within the river corridor.

This need is in compliance with the State of Oregon Marine Board's closure of the Snake River to motorized personal watercraft (Oregon Administrative Rule 250-21-040) and pursuant to 36 CFR 261.50a, Order 208, dated January 2, 1992. Order 208 justifies the closure by identifying motorized personal watercraft as a non-valid craft which poses safety hazards to authorized power and floatboat users, as well as to the user of the non-valid craft (reference the analysis file).

ALLOCATE FLOATBOAT USE LEVELS

The need for this proposal is to refine management of the floatboat use levels in addition to protecting and enhancing the recreation ORV and the associated recreation experience for the diverse groups of river users.

ESTABLISH USE SEASON, PARTY SIZE, CAMPSITE STAY LIMITS, AND RECREATION EXPERIENCES

These proposals stem from the need to protect and enhance the scenic, recreation, wildlife, fisheries, cultural, vegetation and botanical, and ecological ORV's of the river corridor by providing onshore site protection, managing diverse users during the primary season while maintaining the existing onshore recreation experience, and making users more aware of how their presence affects the environment.

Additional need is derived from the Visitor Use Study, wherein 54% of the visitors surveyed favored or would accept a shortened primary season.

Limiting party sizes is derived from the need to minimize onshore impacts on ORV's from excessive party sizes. Party size limitations were recommended based on the Visitor Use Study in which virtually all surveyed visitors support management policies that protect the natural qualities of the river canyon.

The need for maintaining a limit on the number of floatcraft per party is to protect the expected river recreation experience and provide for the safety of the users by managing group size and river encounters.

A campsite reservation system is needed to protect and enhance the multitude of ORV's from onshore impacts and to reduce and/or eliminate the social conflict stemming from competition for campsites. The CMP provides direction to establish a reservation system for campsites upstream from Pittsburg Landing (1983 Revised Snake River Recreation Management Plan, page 3). Further, the Visitor Use Survey noted 71% favored or would accept some type of reservation/allocation system for campsites to reduce congestion and competition during the primary season.

The need for maintaining picnic tables at dispersed river campsites is derived from the need to provide resource protection at those sites.

The development of an education program is driven by the need for protecting and enhancing ORV's in the river corridor through user awareness instead of implementing excessive regulations. An education program for river users is supported by the Visitor Use Study which

noted 76% favored or would accept a requirement to attend short briefings on river etiquette at the Hells Canyon Dam Recreation Site before embarking on the river. Further, 95% favored or would accept increasing boaters' awareness of river etiquette and understanding of management practices.

The need for a solid human waste carryout system for both private and commercial users, is derived by the need to protect and enhance the fisheries and cultural ORV's and establish a schedule for implementation. A comprehensive management plan (CMP) for the HCNRA provides direction to investigate the feasibility and desirability of using alternate waste disposal systems, including a carryout system for river users in lieu of pit toilets, and to implement it, if necessary. The HCNRA, in cooperation with several partners, is participating in a human waste management pilot project (reference analysis file). The Visitor Use Study noted 45% of those surveyed felt more solid human waste disposal sites were needed and 66% favored or would accept requiring solid human waste carryout.

The need to remove non-conforming structures is driven by the need to provide for the intended recreation experience for the diverse group of users as part of protecting and enhancing the recreation ORV.

DECISIONS TO BE MADE

The Forest Supervisor will make the following decisions based on the interdisciplinary analysis contained in this EIS:

- Should the proposed action be implemented as proposed, implemented as modified, or not implemented to ensure that recreation management is compatible with the objectives of Section 7 and 10 of the HCNRA Act and ensures the protection and enhancement of the outstandingly remarkable values pursuant to the Wild and Scenic Rivers Act?

  Specific components of the decision are as follows:

  - Private powerboat use levels in the wild and scenic sections.
  - Permanent closure of personal watercraft in the scenic section.
  - Commercial powerboat use levels in the wild and scenic sections.
  - Private floatcraft use levels in the wild and scenic sections.
  - Commercial floatcraft use levels in the wild and scenic sections.
  - Private aircraft use levels in the wild and scenic sections.
  - Removal of navigation markers in the wild section.
  - Maintenance of picnic tables in the wild and scenic sections.
  - Implementation of campsite reservation systems in the wild section.
  - Degree of management coordination with backpackers and horsepackers.
  - Campsite stay lengths in the wild and scenic sections.
  - Party sizes for recreational users.
  - Maximum number of floatcraft per party.
  - Removal of Pittsburg metal shed and Kirkwood silos.

- What relative timeline should be developed for the proposed action, if any, as an implementation schedule to achieve the management objectives?

The Record of Decision for this EIS will amend the Forest Plan. Implementation of the decision is scheduled for January 1995.

PROJECT AREA DESCRIPTION

The Wild and Scenic Snake River runs north from the Hells Canyon Dam to the Oregon-Washington border and forms the the northern portion of the boundary between Oregon and Idaho. The Act establishing the Hells Canyon NRA designated 67.5 miles of the Snake River as wild and scenic, classified into the following segments:

WILD RIVER: The 31.5 miles from Hells Canyon Dam to Pittsburg Landing.

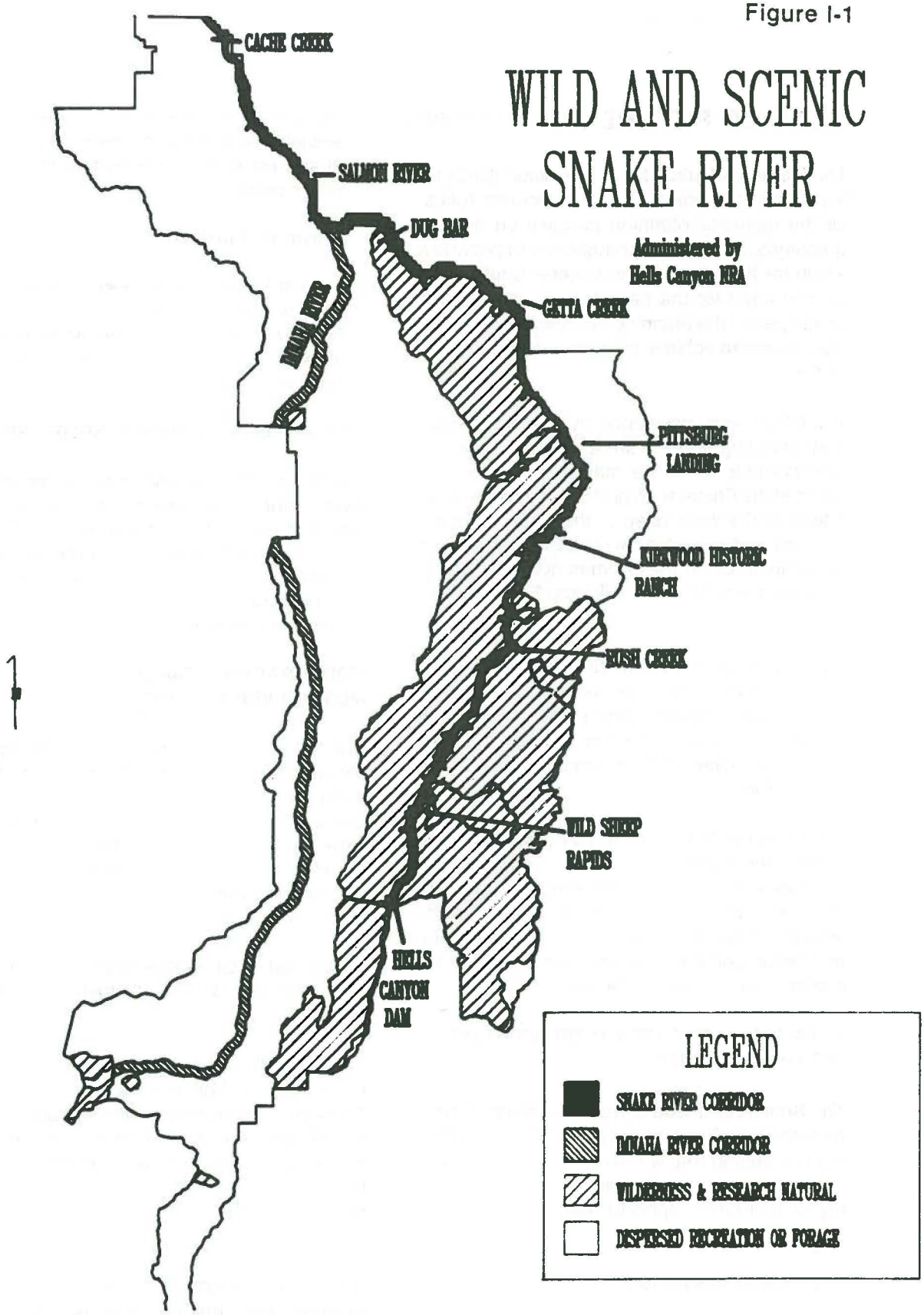
SCENIC RIVER: The 36.0 miles from Pittsburg Landing to the northern boundary of the Wallowa-Whitman National Forest.

STUDY RIVER: Four miles of river frontage added to Forest Service ownership and management with the acquisition of property at Cache Creek and included in this analysis.

The river corridor is approximately a quarter-mile on each side of the high-water mark. Hells Canyon Wilderness is adjacent to the corridor along southern portions of the river in both Oregon and Idaho but does not include the wild and scenic corridor (reference Figure I-1).



Figure I-1



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DESIRED FUTURE CONDITIONS

The following desired future condition (DFC) for the Wild and Scenic Snake River corridor focuses the resource planning process on desired outcomes. DFC's set parameters and provide a vision for how the wild and scenic corridor will be managed for the next decade. Alternatives developed in the planning process serve as various means to achieve the vision defined by the DFC's.

The DFC's were developed by the interdisciplinary planning team to set a vision for how the river corridor would be managed to meet the intent of the Forest Plan and the legislative acts. These DFC's were used in the public scoping process and presented in the DEIS to assist the public in focusing their comments and involvement on a vision for the Wild and Scenic Snake River.

The DFC's are not intended to be used as required actions to be achieved at a specific time in the future. Instead, DFC's are designed to provide a framework in which to implement site specific projects and programmatic planning for the river corridor.

The following DFC's provide a holistic and integrated description of the river corridor for the next decade. The DFC's are intended to be applied with the desired recreation opportunity settings of Chapter III to ensure the protection and enhancement of all the outstandingly remarkable values within the river corridor.

A UNIQUE BLEND OF WHITEWATER BOATING OPPORTUNITIES

The Snake River would provide a blend of both motorized and non-motorized whitewater boating in a setting that is unique in North America. This would provide diverse user groups a variety of recreation opportunities within a major river environment.

Travel by Powerboat

The Snake River of Hells Canyon would be a premier four-season whitewater powerboating river in North America. It would remain available as an area for powerboaters to travel and camp in a river setting that includes major rapids.

Travel by Floatboat

A Hells Canyon whitewater floating experience would be one of the best in the Pacific Northwest. Floatboaters would be able to enjoy a variety of trip lengths, usually one to six days in duration.

A YEAR-ROUND DIVERSE SPORT FISHERY

The Snake River would provide habitat for a diverse and productive mix of cold water species. The river would provide year-round fishing that includes white sturgeon during the summer and steelhead during the fall and winter. The rainbow trout fisheries would remain extremely popular with anglers.

HORSEPACKING/BACKPACKING IN A REMOTE, RIVER SETTING

Due to the favorable canyon/river climate, people would horsepack and backpack in the area during the spring and fall. The canyon would provide a variety of challenges and scenery in a large diverse backcountry setting centering on the river. In addition, trail users would access the adjacent wilderness from the river to a variety of elevations.

A DIVERSITY OF INTERPRETIVE, SIGHTSEEING, AND WILDLIFE VIEWING OPPORTUNITIES

The Snake River corridor would provide an environment rich in both cultural and natural history. There are unsurpassed concentrations of prehistoric sites, a colorful history of exploration, mining and settlement, and numerous national historic sites. These combine to support the entire area as the Hells Canyon Archaeological District.

Rugged topography, fascinating geologic formations, and unique geographical features would provide a diverse, appealing landscape for sightseers.

The variety of wildlife would create year-round viewing opportunities. The opportunity to observe peregrine falcons, bald eagles, big horn sheep and many other wildlife species in their natural habitat would be a unique experience for many visitors to the corridor.

River travel in Hells Canyon would allow adventurous physically-challenged individuals to visit remote prehistoric sites and to view wildlife and unique plant life in a natural setting.

PROTECTION AND ENHANCEMENT OF OUTSTANDINGLY REMARKABLE VALUES

The Snake River of Hells Canyon would provide for great contrasts of landform, vegetation, color, climate, and sound.

Geology of the canyon would provide research potential and continue to portray the complex geological history of the Canyon and western North America.

Diverse wildlife species inhabit the corridor and affirm its importance as wildlife habitat. Wintering and year-round habitat for numerous species is maintained and provides opportunities for human interaction with these creatures.

There would be several stocks of anadromous fish, including spring, summer, and fall chinook salmon, sockeye salmon, summer steelhead, trout, and Pacific lamprey, as well as several other resident species of native fish. Nationally and regionally, the Snake River would be known for its abundant, unique, and diverse sport fishery. The protection of the diverse aquatic resources would ensure the existence of these important species.

One of the richest accumulations of riverine archaeological resources in western North America would be enjoyed by visitors and continue to provide unlimited research potential for the historic and prehistoric cultural resources of the canyon.

Populations of MacFarlane's four-o'clock would be preserved. The concentration and number of rare or endemic plant species found within the canyon would be preserved.

The Snake River of Hells Canyon would provide protection and special designation through the inclusion of certain sites in the research natural area system. The canyon's special environment will continue to foster unusual and specific relationships in the flora and fauna and physical environment that make the ecological aspects of the corridor an outstandingly remarkable value.

LEGISLATED REQUIREMENTS AND MANAGEMENT DIRECTION

Management of the river corridor is guided by numerous legislated requirements and management direction. Correspondingly, development of a recreation management plan for the Wild and Scenic Snake River requires that this management direction be embodied in the recreation management plan. Figure I-2 displays the relationship of the requirements which guided the development of this plan.

The National Forest Management Act of 1976 (NFMA), along with the associated National Forest System Land and Resource Planning Regulations (36 CFR 219), sets forth a process for developing, adopting, and revising land and resource management plans.

The National Environmental Policy Act of 1969 (NEPA) and the Council of Environmental Quality NEPA Regulations (40 CFR 1500) provide the basic national charter for protection of the environment.

In Section 7(2) of the Act establishing the Hells Canyon National Recreation Area (Public Law 94-199) the Secretary directs conservation of scenic, wilderness, cultural, scientific, and other values through applicable laws, rules, and regulations. Section 10 (c and d) provides for control of the use and number of motorized and nonmotorized rivercraft (see Appendix A).

Section 10 of the HCNRA Act further requires the Secretary to promulgate rules and regulations to accomplish the purposes of the Act. The public land use rules are anticipated to be completed by July 1994 and will provide refined

standards and guidelines for management of the river.

The Act establishing the wild and scenic rivers system (Public Laws 90-542 and 99-590) Section 10 (a), requires emphasis and protection be given to the aesthetic, scenic, historic, archeologic, and scientific features of the river which caused it to be included in the Act. The Act limits other uses to those that do not substantially interfere with public use and enjoyment of these values (see Appendix B). Chapter III, Affected Environment, presents the outstandingly remarkable values for the Wild and Scenic Snake River as identified by the Forest Service planning team. In February 1980 the National Park Service recommended the study portion of the river be designated as scenic. The Forest Service will be recommending to Congress in 1994 that this study portion be included in wild and scenic river system as scenic. For the purposes of this analysis the study portion is considered scenic (reference the analysis file).

The listing of the Snake River sockeye salmon as an endangered species under the Endangered Species Act (ESA) limits river use to activities that do not damage salmon habitat. Other endangered species requiring protection are the MacFarlane's four-o'clock and the peregrine falcon.

The Americans with Disabilities Act of 1990 (ADA) provides direction for management of the river to ensure a national mandate to eliminate discrimination against individuals with disabilities is provided through enforceable standards.

The Archaeological Resources Protection Act of 1979 (ARPA) provides for the protection of archaeological resources and sites on public lands.

The Alaska National Interest Lands Conservation Act of 1980 (ANILCA) provides direction to ensure adequate access to the owner of non-federal lands to secure reasonable use and enjoyment.

The HCNRA Comprehensive Management Plan (CMP), as amended by the December 6, 1983 Revised Snake River Recreation Management Plan, and incorporated by reference into the 1990 Forest Plan, identifies several recreation management objectives. They are to maintain or enhance the values for which the river was designated; maintain or enhance the values for which the HCNRA was established; provide for a wide range of recreation uses compatible with the Wild and Scenic Rivers Act and the Hells Canyon NRA Act; and manage for semi-primitive motorized recreation opportunities (reference the analysis file).

The Decision of the Secretary of Agriculture on boating appeals (April 21, 1983), does not limit the number of daily trips by powerboats. Monitoring through registration was intended to determine if and when adjustments to boating levels became necessary. Adjustments were not to be made before 1985 and then only after public notice and comment.

The Forest Plan provides guidance through its established goals, objectives, desired future conditions, Forest-wide standards and guidelines, and specific management area direction.

The primary management emphasis for Forest Plan Management Area 8, Hells Canyon National Recreation Area Snake River Corridor, is to maintain the recreation experiences available at the time the area was established.

Hells Canyon Creek Launch Site, Kirkwood Historic Ranch, Pittsburg Landing Recreation Site, Pittsburg Administrative Site located on the Oregon side of the river, Dug Bar Recreation Site, and Cache Creek Ranch are to be managed in accordance with Forest Plan Management Area 16, Administrative and Recreation Sites.

Management Area 8 in the Forest Plan covers 14,355 acres in the Snake River corridor. Primary emphasis is to maintain the recreation experiences that were available at the time the HCNRA was established (pages 4-76 & 4-77 of the Forest Plan).

The study river portion is managed according to the guidance provided by Management Area 7, Wild and Scenic Rivers, until determined unsuitable as a wild and scenic river or acted upon by Congress.

Four research natural areas are located within the river corridor and are managed according to the guidance provided by Management Area 12 (pages 4-83 through 4-85 of the Forest Plan).

FSM 2300 provides direction to state the recreation opportunity spectrum (ROS) classification featured in the river and procedures for maintaining the ROS settings over time. Chapter III displays this description of the desired ROS characteristics in the section describing the recreation ORV.

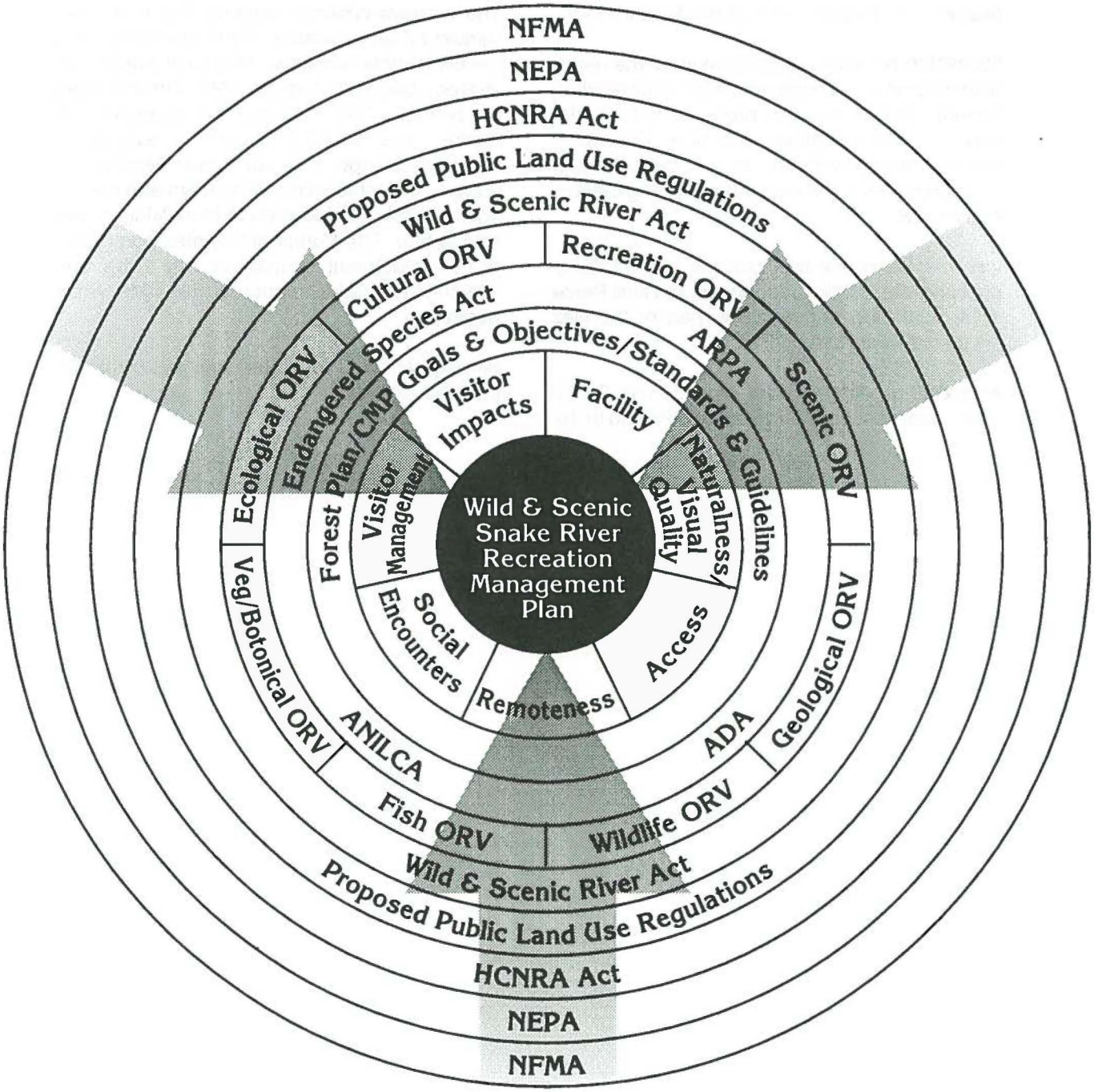
Included within the river corridor is the historic crossing site of Chief Joseph and the Nez Perce Tribe near Dug Bar, which is part of the Nez Perce National Historic Park.

An existing utility corridor crosses the Snake River upstream from Dug Bar as identified in the 1992 Western Regional Corridor Study and the Forest Plan.

The Wallowa-Whitman National Forest has embarked on an evaluation of the effectiveness of the CMP implementation. This CMP adjustment strategy began in January 1994 with the intent of reviewing CMP management objectives, direction, and accomplishment to evaluate a need for change. The adjustment strategy involves a Forest-level planning team and considerable public participation in identifying a need for change. The Forest anticipates completion of the adjustment strategy in July 1994, from which formal adjustments of the CMP would begin.

See Appendix C for further discussion on the intent of the Acts.

Wild & Scenic Snake River—Management Direction



ISSUES

An important step in the planning process is the identification of public issues and management concerns. This was accomplished through an extensive scoping process involving interested and affected individuals, representatives of special interest and user groups, and concerned State and Federal agencies. Contacts were made through publications, mailings, and public meetings.

Following are discussions of the issues. In reviewing the remaining sections of the EIS, the reader should keep these issues and concerns in mind. An important test of any alternative action is how well it addresses and resolves these issues.

A summary of comments received during the scoping process is available in the analysis file.

SIGNIFICANT ISSUES

Based on concerns and comments received during the scoping process, the following issues were identified as significant in relation to the proposed action. These issues are the focus for formulating alternatives to the proposed action.

Each issue discussed in this chapter has one or more associated key indicators. Key indicators are select units of measure of how, or to what degree, each alternative responds to the issue. Key indicators are responsive to changes in effects and are measurable and predictable. They provide the decision maker with a basis for comparing the alternatives.

PROTECTION OF THREATENED AND ENDANGERED SALMON

Recreation use allocation should be consistent with the protection and enhancement of threatened and endangered salmon fisheries and habitat in the river corridor.

Many people questioned what effect varying recreation use levels in the river corridor could have on threatened and endangered salmon fisheries and habitat. Specifically, they were concerned about potential effects of exhaust emissions and fuel and oil discharge from motorized craft on salmon fisheries. The potential effect of motorized and non-motorized craft passing over salmon spawning areas was an additional concern.

Other comments expressed concerns over the potential effects on salmon fisheries and habitat from recreation activities such as swimming and fishing.

Key Indicators:

- Potential for species to be inadvertently hooked by anglers.
- Potential for boat disturbance on migration/spawning behavior.
- Potential for boat disturbance to eggs/embryo in redds.
- Potential for species to be disturbed while in tributary stream.

EFFECTS OF RECREATION USE REGULATION ON SOCIO-ECONOMICS CONDITIONS

Regulation of recreation use could affect the socio-economic condition of current and future river users, recreation-related businesses, and related community and regional infrastructures.

Many comments focused on the potential socio-economic impacts on private recreationists who own motorized or non-motorized craft and how the proposed recreation use allocations may affect their ability to use their craft as they have in the past. In addition, many people felt the Forest Service should view recreation use allocations from a regional perspective. Specifically, the Wild and Scenic Snake River is one of the few remaining whitewater rivers in the region available for motorized use and should remain as such.

Other comments were related to the potential effects recreation use allocations may have on recreation-related businesses such as powerboat manufacturing, motorized and non-motorized commercial operators, and retail

sporting goods. Additional concerns were expressed regarding the potential effects on related community and regional service industries such as restaurants, service stations, and lodging.

Key Indicators:

- Total commercial permittee revenue.
- Total associated expenditures by recreationists.
- Number and type of recreational users displaced by proposed regulations.
- River corridor management costs.

MANAGING FOR THE INTENDED RECREATION EXPERIENCE

The establishment of appropriate and equitable levels of boating and aircraft use should meet the intended recreation experience within the wild and scenic river.

This is a complex issue, and the comments represented a wide spectrum of opinion and concern regarding appropriate use levels within the river corridor. Many perspectives concerning this issue related to powerboat use levels within the wild section, equitable levels of allocation between powerboaters and floatboat users, equitable levels of allocation between commercial and private boaters, and whether motorized personal watercraft are appropriate within the scenic section.

An additional component of the issue concerned opening Sluice Creek and Cache Creek airstrips and the resulting effect on the intended recreation experience within the wild and scenic sections.

A majority of comments on recreation use focused on the compatibility of competing uses and the effects of noise from motorized watercraft and aircraft in relation to the intended recreation experience for non-motorized users on the wild and scenic sections.

Comments regarding campsite stay limits addressed a fear that the proposed limits were constraining. Specifically, people felt limits would eliminate opportunities for river parties to enjoy long weekends or extended stays, particularly in the wild section during the primary season. Other people felt the limits in the secondary season would conflict with stays of hunting parties.

Many comments supported developing a campsite reservation system as a means of resolving conflicts over campsite competition and ensuring user accountability, with an expressed concern that the system be equitable between the various river users, including aviators, hikers, and horsepackers.

Key Indicators:

- Using the ROS classes, evaluate each alternative's ability to protect and enhance the recreation ORV and DFC's, through the following settings:
  - Degree of providing access.
  - Degree of providing remoteness.
  - Degree of social encounters.
  - Degree of visitor management.
  - Degree of facilities and site management.
  - Degree of user fairness and equitability.

MINIMIZE ONSHORE DEGRADATION

Party size restrictions, solid human waste carryout, and campsite stay limits should minimize onshore impacts from recreational users.

Comments on party size were concerned with the impact parties may have on the physical resources. Additionally, some comments were concerns about the ability to hold special events on the river that would result in parties exceeding 30 people.

Comments on the proposal for phasing out pit toilets and initiating a human solid waste carryout system were varied. Many expressed sup-

port for such a system, providing the system would be environmentally and aesthetically sound. Others expressed concern that a timeline for installation of a solid human waste carryout system be developed. Other comments suggested the system was unnecessary, an inconvenience to all parties and there were alternative methods to a carryout system.

Key Indicators:

- Risk of visitor impacts from onshore recreation use on:
  - Proposed, endangered, threatened, and sensitive plant species and habitat
  - Cultural resources

OTHER ISSUES

The following issues, concerns, and opportunities were identified during scoping and are addressed in this EIS by establishing management elements, mitigation measures, and monitoring.

REMOVING NAVIGATION MARKERS FROM THE WILD SECTION OF THE RIVER CORRIDOR

This element of the proposed action generated some concern from the variety of user groups and is further addressed in Chapter II and IV under the individual description of the alternatives.

MOTORIZED SOUNDS EFFECTING RECREATIONAL USERS IN THE HELLS CANYON WILDERNESS

Many people are concerned about how motorized watercraft sounds affect the recreation experience of Hells Canyon Wilderness users. This concern is addressed through ongoing monitoring activities within the Hells Canyon Wilderness, in addition to the disclosure of the environmental consequences in Chapter IV of this EIS.

PROHIBITING PRIVATE AND COMMERCIAL FLOATPLANE LANDINGS ON THE ENTIRE RIVER CORRIDOR DURING THE PRIMARY SEASON

There was broad support for this element of the proposed action through the scoping process. This element is carried forward in Chapter II as a management element common to action alternatives B through G.

LIMITING RECREATION AIRCRAFT LANDINGS TO DESIGNATED PUBLIC LANDING STRIPS IN ALL RIVER SECTIONS

There was broad support for this element of the proposed action through the scoping process. This element is carried forward in Chapter II as a management element common to all action alternatives.

REQUIRING SELF-ISSUED PERMITS AT PUBLIC AIRSTRIPS

There was broad support for this element of the proposed action through the scoping process. This element is carried forward in Chapter II as a management element common to all action alternatives.

MAINTAINING A MAXIMUM CEILING OF 19 SPECIAL USE PERMITS FOR COMMERCIAL POWERBOAT OUTFITTERS AND 16 SPECIAL USE PERMITS FOR COMMERCIAL FLOAT OUTFITTERS

There was broad support for this element of the proposed action through the scoping process. This element is carried forward in Chapter II as a management element common to all action alternatives.

MAINTAINING A MAXIMUM BOAT SIZE OF 44 FEET IN LENGTH FOR ALL SECTIONS OF THE RIVER

There was broad support for this element of the proposed action through the scoping process. This element is carried forward in Chapter II as a management element common to action alternatives B through G.

ESTABLISHING A NEW PRIMARY SEASON FROM THE FRIDAY BEFORE MEMORIAL DAY THROUGH SEPTEMBER 10

There was broad support for this element of the proposed action through the scoping process. This element is carried forward in Chapter II as a management element common to all action alternatives.

PROVIDING AN EDUCATION PROGRAM AT PORTALS TO INCREASE RECREATIONAL USER'S AWARENESS OF RIVER ETIQUETTE AND UNDERSTANDING OF MANAGEMENT PRACTICES

There was broad support for this element of the proposed action through the scoping process. This element is carried forward in Chapter II as a management element common to all action alternatives and is presented in detail in Appendix L.

MINIMIZING THE EFFECTS OF POWERBOAT WAKE ON MOORED WATERCRAFT

This concern is addressed in Chapter II as a management element common to all action alternatives.

MAINTAINING THE RIGHTS AND PRIVILEGES HELD BY MEMBERS OF THE NEZ PERCE TRIBE THAT ENTITLE THEM TO HUNT, FISH, GATHER ROOTS AND BERRIES, AND PASTURE STOCK ON CERTAIN OPEN AND UNCLAIMED LANDS

This concern is addressed in Chapter II as a management element common to all action alternatives through the tiering to the Forest-wide standards and guidelines of the Forest Plan.

ENSURING THE PROTECTION OF WETLANDS FROM ADVERSE EFFECTS RESULTING FROM THE IMPLEMENTATION OF THE PROPOSED ACTION

This concern is addressed in Chapter II as a management element common to all action alternatives through the tiering to the Forest-wide standards and guidelines of the Forest Plan.

CONTROLLING THE INTRODUCTION AND SPREAD OF NOXIOUS WEEDS

This concern is addressed in Chapter II as a management element common to all action alternatives through the tiering to the Forest-wide standards and guidelines of the Forest Plan.

MINIMIZING THE EFFECTS THAT POWERBOATS HAVE ON STREAMBANK EROSION

This concern is addressed in Appendix E of this EIS through a powerboat wake study.

ENSURE THE COMPATIBILITY OF NEW MANAGEMENT DIRECTION WITH OTHER RIVER CORRIDOR USES, SUCH AS HIKING AND HORSEPACKING, AND ON PRIVATE INHOLDINGS

This concern is addressed in Chapter II as a management element common to all action alternatives and in the individual descriptions of the alternatives.

MAXIMUM PARTY SIZE REQUIREMENT FOR COMMERCIAL MOTORIZED WATERCRAFT

This concern is addressed in Chapter II.

SUMMARY OF SCOPING PROCESS

Numerous articles were published in local and regional papers covering the planning process and sharing information as components of the planned steps were completed. Refer to the analysis file for copies of the articles.

The Forest Service published a notice of intent in the Federal Register on December 8, 1992, clearly describing the proposed action.

At the time of the publishing of the DEIS, there were approximately 1,370 individuals and organizations on the mailing list. That has grown to about 1,700 on the current mailing list.

Copies of published information sheets sent to individuals and organizations on the mailing list are in the analysis file and available for review. Public participation has included the following:

In addition to the information sheets and public meetings, there have been many informal meetings and telephone conversations with interested organizations and individuals. Approximately 400 letters were received from varied interest groups across the country during initial scoping. An article soliciting input from readers in various special interest groups' newsletters, and a letter from an outfitter to their clientele, resulted in outreach to a multitude of people from numerous places across the United States.

A summary of actions and information from the public comment period following the release of the draft EIS has been recorded in Appendix K.

Consultation with U.S. Fish and Wildlife Service and the National Marine Fisheries Service regarding the preferred alternative has occurred.

Date	Action	Approximate Number of Non-Forest Service People Involved
9/30/92	Information sheet sent to the mailing list. Topic: task force recommendations and proposed action.	650
10/13-20/92	Public meetings held at Halfway, OR; Boise, Lewiston, and Riggins, ID to discuss task force recommendations and proposed action and to acquire feedback.	270
12/8/92	Information sheet sent to the mailing list. Topic: update on process and identification of issues.	900
1/12/93	Information sheet sent to the mailing list. Topic: an invitation for help in identifying preliminary ways of resolving issues.	1,200
1/19-28/93	Public meetings held at Enterprise, La Grande, and Portland, OR; Boise and Riggins, ID; and Clarkston, WA to address ways of resolving significant issues.	350
3/93	Information sheet sent to the mailing list. Topic: comments received at January public meetings.	1,300
8/93	Summaries of Draft Environmental Impact Statement sent to the mailing list.	1,500
8/93	Draft Environmental Impact Statement sent to interested public and required agencies.	300

8/93-11/93	Additional Draft Environment Impact Statements sent those who requested them and handed out at public meetings.	345
9/7-9/16/93	Public meetings held at Enterprise, Halfway, La Grande, and Portland, OR; Boise and Riggins, ID; and Clarkston, WA; to explain the DEIS preferred alternative.	430

CHANGES BETWEEN DRAFT AND FINAL

Several changes have occurred in the time between release of the DEIS and this FEIS. These changes reflect a combination of public and agency comment on the DEIS, changed conditions, and revisions in the methods by which information is displayed.

The section describing the ROS settings has been moved from Chapter IV to Chapter III, and expanded to more fully illustrate the characteristics developed from Forest Service guidelines.

One additional alternative was developed within the range of the existing alternatives carried forward from the draft EIS. Alternative G is described, analyzed, and compared to the other alternatives considered in detail. It has become the preferred alternative in the FEIS.

The section on management direction common to all alternatives has been re-written based on public comments.

Environmental consequences in Chapter IV have been refined based on enhancement of the key indicators as displayed in Chapter I and based on public comment.

DFC's segmented by river section has not been carried forward because the concept lacked public support.

Several terms have been used to identify the two season used to manage river use levels. The FEIS uses primary to describe the period between Memorial Day weekend and September 10, and secondary for the rest of the year. During the LAC planning process, high use season and low use season were used. The DEIS was written using regulated season and unregulated season. High use, regulated, and primary all refer to the summer season, while low use, unregulated, and secondary identify the remaining "off" season.

The proposed annual monitoring plan has been expanded and moved from the body of the EIS to Appendix J.

Two other appendices have been added. Public comments are in Appendix K, and a river user education program is in Appendix L.

The FEIS has additional information in Appendix D related to the adjustment strategy initiated in January 1994 to evaluate the potential need for changes to the comprehensive management plan for the HCNRA.

Appendices G and I have been updated to reflect changes resulting from the development of preferred Alternative G.

ANALYSIS FILE

All the documents and files chronicling the planning process for this DEIS are available for review at the Wallowa-Whitman National Forest Headquarters, 1550 Dewey Avenue, Baker City, Oregon 97814. These documents and files contain the detailed information and decisions used in developing the DEIS and are referenced at appropriate places in the text and appendices.

CHAPTER II

ALTERNATIVES INCLUDING THE PROPOSED ACTION

INTRODUCTION

This chapter describes the proposed action and its six alternatives, including one alternative which represents no action. It presents different approaches to meeting the underlying needs identified in Chapter I. The alternatives, including Alternative B which represents the proposed action, provide a mix of activities and schedules centered around a particular emphasis or theme.

This chapter consists of the following seven sections:

ALTERNATIVE DEVELOPMENT PROCESS outlines the process used to formulate the proposed action and its alternatives.

ALTERNATIVES CONSIDERED, BUT ELIMINATED FROM DETAILED STUDY describes alternatives eliminated from detailed study and reasons they were eliminated.

MANAGEMENT DIRECTION COMMON TO ALL ACTION ALTERNATIVES

MITIGATION COMMON TO ALL ACTION ALTERNATIVES

MONITORING COMMON TO ALL ACTION ALTERNATIVES

DETAILED DESCRIPTION OF THE ALTERNATIVES presents the overview and design of the seven alternatives, including the following:

Alternative A. This is the "No Action" alternative as required by the National Environmental Policy Act and would not implement the proposed action.

Alternative B. This alternative was used in scoping to identify issues and generate a variety of concepts for designing other alternatives. Recommendations set forth through the LAC planning process and developed by the Forest Service as the proposed action, are the components of this alternative.

Alternative C. This alternative emphasizes a balance of diverse recreation use, at moderate levels, for both private and commercial users within the entire river corridor.

Alternative D. This alternative emphasizes the opportunity for a non-motorized recreation experience during the primary season in the wild section from Hells Canyon to Kirkwood Historic Ranch. From Kirkwood Historic Ranch to Pittsburg Landing a mixture of motorized and non-motorized use would be provided during the primary season. Motorized recreation use would be emphasized in the scenic section.

Alternative E. This alternative would provide exclusive motorized and non-motorized recreation use on an alternating weekly basis from Hells Canyon Dam to Kirkwood Historic Ranch, and a mixture of shared motorized and non-motorized experiences on the remaining section of river.

Alternative F. This alternative emphasizes non-motorized recreation use in the wild

section of the river and motorized use in the scenic section on a year-round basis.

Alternative G, Preferred. This alternative emphasizes mixed use in the entire river corridor, year-round, with the exception of an eight-week period, on a portion of the wild river, when non-motorized periods are provided three days a week.

Table II-1, which follows the detailed descriptions of alternatives, summarizes alternative management requirements.

COMPARISON OF THE ALTERNATIVES displays the differences in the alternatives using a summary format.

ALTERNATIVE DEVELOPMENT PROCESS

The proposed action was developed from recommendations resulting from the LAC planning process. A Forest Service interdisciplinary team (ID team) of resource specialists used opinions, comments, and suggestions gathered at internal and public scoping meetings to help define key issues identified in the proposed action. Alternative themes were developed by the ID team to respond to the issues generated by analyzing the proposed action. Alternatives were also submitted by special interest groups for consideration in the alternative development process. The alternatives carried forward for detailed study are designed to resolve the significant issues surrounding the proposed action.

The alternatives are designed to achieve the purpose and need for action, desired future conditions (DFC) for the river corridor, the protection and enhancement of the outstandingly remarkable values (ORV's), and the recreation opportunity spectrum (ROS) for the river corridor. Some alternatives would achieve the DFC faster than others, as noted in descriptions of the alternatives.

ALTERNATIVES CONSIDERED, BUT ELIMINATED FROM DETAILED STUDY

During development of the alternatives much input was received from interested groups and individuals. Four groups submitted proposed alternatives: Hells Canyon Preservation Council, Northwest Powerboat Association, Northwest Rafters Association, and Oregon Natural Resources Council. Major facets of the two alternatives submitted by the Hells Canyon Preservation Council and the major facets of the proposed alternative submitted by the Northwest Powerboat Association have been discussed point-by-point in Appendix F. Because the alternatives developed by the Northwest Rafters Association and the Oregon Natural Resources Council were similar to the two alternatives submitted by the Hells Canyon Preservation Council, the major facets are adequately addressed in one detailed discussion.

Following are all of the alternative themes considered, but eliminated from further study.

HELLS CANYON PRESERVATION COUNCIL SOLITUDE 1

This alternative would eliminate motorized use on the wild river from Hells Canyon Dam to Kirkwood Creek, and would allow regulated commercial and private powerboat use on the wild and scenic river from Kirkwood Creek to Cache Creek. Motorized use would be regulated at varying levels from Kirkwood Creek to Getta Creek, and from Getta Creek to Cache Creek.

Floatcraft access at Hells Canyon Creek would be limited to three private and two commercial launches per day during the primary season and unlimited during the secondary season. Launches from Pittsburg and Dug Bar would be unlimited, year-round. The alternative includes limiting a launch party to a maximum of 30 people using a maximum of 10 floatcraft. Reference analysis file for submitted alternative.

This alternative was eliminated from detailed study because several of the alternatives considered for detailed study include a combination of themes or resulting effects that are similar to this alternative. Alternative D, for example, provides for a non-motorized recreation opportunity during the primary season in the wild section from Hells Canyon Dam to Kirkwood Historic Ranch. Alternative F provides for year-round, non-motorized, recreation opportunities on the entire wild river section. Alternative C emphasizes a moderate level of recreation use for the entire corridor, particularly in the scenic section as proposed in Solitude 1. Additionally, many of the major facets in the submitted alternative were outside the scope of this EIS and were not carried forward for detailed study.

Appendix F provides a detailed comparison of the alternative's major facets and the Forest Service's disposition.

HELLS CANYON PRESERVATION COUNCIL SOLITUDE 2

This alternative is identical to Alternative Solitude 1, except it limits motorized use to commercial powerboats only from Cache Creek to Getta Creek. Reference analysis file for submitted alternative.

Alternative F is similar to this alternative in that it provides for year-round, non-motorized, recreation experiences within the wild section. Although none of the other action alternatives would eliminate private powerboaters from the entire river corridor, Alternative C provides for a moderate level of recreation use for both motorized and non-motorized users.

This alternative was eliminated from detailed study because the proposal to eliminate private powerboat use from the river corridor is not within the intent of the purpose and need for action, and does not meet the intended DFC and ROS characteristics for the scenic section or the intent of the Act establishing the HCNRA. This alternative would not provide for appropriate and equitable river access to all users as identified in one of the significant issues.

Appendix F provides a detailed comparison of the alternative's facets and the Forest Service's disposition.

NORTHWEST POWERBOAT ASSOCIATION

The Wild and Scenic Snake River would be managed for four different DFC's under this alternative: Hells Canyon Dam to Wild Sheep Rapid with a DFC emphasizing recreation; Wild Sheep Rapid to Sheep Creek Rapid with a DFC emphasizing backcountry semi-primitive motorized; Sheep Creek rapids to Pittsburg Landing with a DFC emphasizing interpretation of historical features; and Pittsburg Landing to the northern boundary of the NRA with a DFC emphasizing recreation.

The alternative would provide opportunities for powerboat and floatcraft users weighted toward "equality on a regional basis." Motorized and non-motorized use would be regulated by applying daily launch limits. The proposal allows for personal motorized watercraft within the scenic section and would not assign maximum party size limits on commercial powerboats. Reference analysis file for submitted alternative.

This alternative was eliminated from detailed study because several of the alternatives considered for detailed study include a combination of themes or resulting effects that are similar to this alternative. Alternative B proposes use levels in the wild section that are similar to this alternative. Although the proposal to assign a recreation DFC to the river section from Hells Canyon Dam to Wild Sheep Rapid is similar to the current use in Alternative A (No Action), this specific proposal is not carried forward in any of the action alternatives. Segmented DFC's, as presented in the DEIS, were dropped from further consideration in the FEIS.

Appendix F provides a detailed comparison of the alternative's major facets and the Forest Service's disposition.

NORTHWEST RAFTERS ASSOCIATION

This alternative is similar to the Hells Canyon Preservation Council's Solitude 1 alternative. The primary difference is slightly higher private powerboat use in the section between Kirkwood Historic Ranch and Cache Creek. Reference the analysis file for submitted alternative.

This alternative was eliminated from detailed study because several of the alternatives considered for detailed study include a combination of themes or resulting effects that are similar to this alternative. Alternative D, for example, provides for a non-motorized recreation opportunity in the wild section from Hells Canyon Dam to Kirkwood Historic Ranch. Alternative C emphasizes a moderate level of recreation use in the entire corridor, particularly in the scenic section as proposed in Solitude 1.

OREGON NATURAL RESOURCES COUNCIL

This alternative was submitted as a modified alternative to Hells Canyon Preservation Council's Solitude 2. The modification would allow commercial powerboat use in the wild section of the river for two years until a complete river trail is finished from Hells Canyon Dam to Granite Creek on the Idaho side. It would allow private powerboat use between Cache and Getta Creeks. Reference the analysis file for submitted alternative.

This alternative was eliminated from detailed study because completion of the trail from Granite Creek to Hells Canyon Dam is outside the scope of this EIS. The recommendation to permit private powerboat use between Cache and Getta Creeks is a component of Hells Canyon Preservation Council's Solitude 1 and is similar to a variety of action alternatives that emphasize varying levels of private motorized use in the scenic section.

OTHER ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

In the development of alternatives, the planning team developed a wide variety of alternative themes to resolve the issues generated from the proposed action. Many of these were not carried forward for detailed study as noted below:

An alternative that emphasized managing the wild section by offering a "freedom of boat choice" during the primary season was considered. The "freedom of boat choice" approach would allocate a set number of launches per day through a lottery system, with the recipient of a permit given the freedom to choose the type of watercraft they would use, i.e., motorized or non-motorized. This alternative was eliminated from detailed study because of the inability to manage and/or predict the ratio of users on a given day, thus not resolving the social conflicts identified in the purpose and need. In addition, existing commercial use established in the wild section would make it difficult to implement and manage the "freedom of boat choice" system without causing substantial economic impacts.

An alternative that emphasized managing for maintenance and enhancement of ecological components of the corridor by reducing private and commercial motorized and non-motorized use was considered. This alternative's theme was similar in nature to the intent of the action alternatives developed in response to the proposed action and the significant issues identified during public scoping. It was not carried forward for detailed study.

An alternative that emphasized managing the river corridor with minimum regulation for both motorized and non-motorized private and commercial users was considered. This alternative would provide open access to watercraft and aircraft with minimum regulation on use levels, campsite management, and party sizes, with emphasis on education instead of regulation. This alternative would not contribute to the DFC of the river corridor, would be detrimental to the identified outstandingly remarkable values, and

is not within the intent of the Wild and Scenic Rivers Act or the HCNRA Act. This alternative was not carried forward for detailed study.

An alternative was considered that would manage the river corridor at use levels comparable to when the HCNRA was established in 1975. This alternative was eliminated from detailed study because the CMP (1982) and subsequent modifications by the Assistant Secretary of Agriculture in 1983 and 1984, provide the management direction and reflect the established use levels for the river corridor. Additionally, recreation use data prior to 1982 is unreliable. Alternative C replicates moderate use levels within the entire river corridor.

During the DEIS comment period, the Hells Canyon Alliance submitted an alternative for consideration as part of their comments on the DEIS that modified Alternative B (reference analysis file). This alternative was not carried forward for detailed study because it is very similar in nature to the alternative submitted by the Northwest Powerboat Association during the scoping process, previously addressed in this section. Specific components of the Hells Canyon Alliance comments, Respondent 1198, are addressed in Appendix K.

Following the DEIS comment period, and after reviewing the public comment and content analysis, the responsible official directed the planning team to develop two additional alternatives to respond to limitations established during the review. One of those alternatives was brought forward for detailed analysis as the FEIS Preferred Alternative G. The other alternative was eliminated from detailed study following review with the responsible official. The eliminated alternative was virtually identical to the FEIS Preferred Alternative G except that it did not provide for the three-day, non-motorized period included in Alternative G.

MANAGEMENT DIRECTION COMMON TO ALL ACTION ALTERNATIVES

Actions or requirements that are common to all action alternatives are described in this section. This management direction would be added to the Forest Plan with the selection and implementation of an action alternative.

Management areas within the river corridor (Management Areas 8, 12, and 16) would be managed pursuant to the management area direction established in the Forest Plan (pages 4-76 through 4-91) and the CMP, except for the proposed changes noted in this section and in the individual alternative description section of this chapter.

Individual resources would be managed pursuant to the applicable Forest-wide standards and guidelines established in the Forest Plan (pages 4-18 through 4-56), including the amended standards and guidelines for noxious weeds, except for the proposed changes noted in this section and in the individual alternative description section of this chapter.

All management practices and developments within the river corridor would be implemented to ensure the protection and enhancement of the river's identified ORV's and ROS characteristics.

Motorized and non-motorized administrative use of the river corridor for cooperating management agencies would be permissible, above the allocations for private and commercial users, with prior approval from the Area Ranger.

Manage visual resources pursuant to Forest Service Manual 2354.42 whereas the wild section is managed for preservation and the scenic section for retention.

Prohibit camping outside of designated dispersed campsites and developed recreation sites.

Phase in a solid human waste carryout program for the wild river in 1995 and for the scenic river in 1996. Remove all pit toilets by the beginning of the primary season for the wild river in 1995 and for the scenic river in 1996. Coordinate user education through a public information plan on implementing the human solid waste carryout program for wild river users in 1994 and scenic river users in 1995.

Maintain toilet facilities at administrative and developed recreation sites and manage them according to site development plans and State regulations, unless specifically noted in the alternatives.

Coordinate with the U.S. Coast Guard to ensure commercial powerboat operators have proper on-board waste facilities to compliment the implementation of the solid human waste carryout system.

Ensure the compatibility of new management direction with upland river corridor uses, such as hiking and horsepacking, and access to private inholdings.

Require self-issued permits for trail users between Pittsburg Landing and Kirkwood Historic Ranch to monitor trail and camping impacts. If monitoring indicates levels of use are affecting the ROS settings and the recreation ORV, limitations may be imposed, at least during the primary season.

Horsepackers that camp within designated high use sites would be required to carry out solid human waste, year-round. High use sites are as follows: Battle Creek, Saddle Creek, Salt Creek, Two Corral, Tryon/Camp Creek, Bob Creek, Bernard Creek, and Sheep Creek. Additional sites may be designated through Area Ranger approval based on monitoring of use levels and potential social and/or resource conflicts.

Horsepackers that camp outside of designated high use sites would be required to use a "cat hole" method for disposal of solid human waste, year-round. "Cat holes" should be a minimum of 200 feet from dispersed campsites, water courses, and trails.

Backpackers would be required to use a "cat hole" method for disposal of solid human waste, year-round, regardless of where they camp. "Cat holes" should be a minimum of 200 feet from dispersed campsites, water courses, and trails.

Prohibit the cutting and/or burning of live or dead vegetation and woody material year-round within 1/4 mile of the high water mark. Fuel wood must be packed in to dispersed and developed campsites, in compliance with firepan requirements and seasonal fire closures. If monitoring indicates inadequate compliance and detrimental impacts on the vegetation/botanical and ecology ORV's, manufactured fuels would be required.

Implement a chainsaw closure within the entire river corridor except for administrative and emergency use with Area Ranger approval.

Removal of hazard trees or blowdown within administrative or developed recreation sites outside of riparian areas may be done with Area Ranger approval. In these circumstances, hazard trees or blowdown may be used as firewood, providing the felled tree is not needed to meet riparian management objectives.

Hells Canyon Creek Recreation Site, Kirkwood Historic Ranch, Pittsburg Landing Recreation Site, Salt Creek Administrative Site, Pittsburg Administrative Site, Dug Bar Recreation Site, Cache Creek Ranch, the Sand Creek, Copper Creek, Sheep Creek facilities, Tryon Creek Administrative Site, and the Temperance Creek Ranch headquarters would be managed in accordance with Management Area 16, Administrative and Recreation Sites (Forest Plan, pages 4-91 through 4-93), the approved individual site development plans, and ROS characteristics listed in Tables III-1 and III-2, unless specifically noted in the alternatives.

Existing docks located at Management Area 16 sites would be allowed to remain in place unless specifically noted in the alternatives. Tie rings would be allowed at all Management Area 16 sites unless specifically noted in the alternatives.

Pursuant to Forest Plan standard and guideline 21 for Management Area 16, site plans would be completed for all administrative sites by the end of calendar year 1997.

Implement a "no-wake" zone at administrative and developed recreation sites. Through the user education program, emphasize proper river etiquette for minimizing boat wakes when encountering other parties.

Prohibit the launching of inflatable watercraft from commercial and private powerboats anywhere in the wild and scenic river, year-round, except for week days in the scenic section. Launching inflatables from private powerboats would be allowed in the scenic river on Monday through Thursday under provision of a self-issued permit.

Eliminate the use of kickers on floatcraft in the wild river, year-round. Kickers would be permitted in the scenic section, year-round.

Design, construct, and manage recreation facilities according to the architectural design guides and standards of the "Hells Canyon Scenic Byway Management Plan" (reference analysis file).

Establish a new primary season from the Friday before Memorial Day through September 10, inclusive. Adjust the primary season when monitoring indicates a need to manage increased use levels for the spring and fall seasons.

Coordinate with the Bureau of Land Management to evaluate the effects of the lower Salmon River recreational use on meeting the DFC established for the scenic section of the Snake River.

Limit recreational aircraft (fixed wing and rotary) landings to designated public airstrips in the river corridor.

Require self-issued permits at public airstrips.

Maintain a maximum ceiling of 19 special use permits for commercial powerboat outfitters and 16 special use permits for commercial float outfitters (including land-based outfitters that provide ferrying services).

Implement a monitoring system for commercial powerboats and administrative use by other government agencies similar to monitoring required of other river users.

Display boater registration numbers on motorized watercraft pursuant to State and Federal requirements to qualify for issuance of permits.

Provide floatcraft identification tags to be attached to and displayed by each craft in a launch party.

Provide an active and timely education program at all river portals to increase recreation users' awareness of acceptable social river etiquette and understanding of management practices. Reference Appendix L for further discussion.

Organized outdoor recreation program trips sponsored by institutions and semi-public outfitting and guiding organizations are considered to be commercial outfitting activities. These organizations would require outfitter and guide special use permits within the allowable ceiling of motorized or non-motorized special use permits available.

Strategy for Salmon River Users

Consistently manage the impacts of boaters originating on the Salmon River with the impacts of Snake River boaters with consideration given to management strategy on the Salmon River.

The 30-person maximum party size for Salmon River boaters would be reduced to 24 on the Snake River except for campsites between the confluence with the Salmon River and Salmon Bar, approximately one mile downstream of the confluence, where 30-person camps would be permitted.

Groups originating on the Salmon River would be limited to a maximum of eight boats per party upon reaching the Snake River. Salmon River parties with more than eight boats per party could use the following techniques to comply with this standard:

Boats may "raft up" or tie together. Each group of "rafted up" boats counts as a single craft.

Boats may be deflated and stowed, or simply lifted out of the water and tied on top of a larger boat.

Provide for a transition period through the 1995 primary use season where Salmon River groups with more than eight boats would

be allowed to break into groups of eight or less providing they travel in separate groups and remain out of sight from each other. They may only regroup by having the first group pull in to shore. Craft would be considered pulled into shore if they are tied to shore or unoccupied. In 1996 this transition strategy would no longer be available.

Boaters originating on the Salmon River must comply with all other applicable standards and guidelines including possession of a valid Lower Salmon River permit which allows access to the Snake River.

MITIGATION COMMON TO ALL ACTION ALTERNATIVES

Mitigation measures are designed to avoid, minimize, rectify, reduce, or compensate for environmental effects of implementing the proposed action and alternatives. Mitigation measures, applicable to all action alternatives, are:

Eliminate ground-based fueling tanks, barrels, and facilities except for the administrative fueling facilities at Pittsburg Landing, which meet Environmental Protection Agency requirements.

All extra fuel transported on the river would remain onboard the vessel transporting it at all times. Staging of fuel at campsites or beaches would be prohibited. Staging and handling of fuel or other petroleum products at Management Area 16 sites would be addressed in site operation and maintenance plans.

In the event of spillage of petroleum products used in association with recreation activities within the river corridor, immediately implement the Hazmat Spill Prevention and Response Plan.

Conduct a scenery survey to guide management activities in achieving Naturalness/Visual Quality ROS settings defined for the wild and scenic sections, by the end of calendar year 1996.

In addition to the standards and guidelines of the preferred alternative, Forest Plan standards and guidelines and best management practices would apply to the activities to reduce, alter, or eliminate potential adverse effects on threatened and endangered fisheries.

To reduce the potential for boating to disturb existing fall chinook redds, educate boaters on the importance of protecting listed salmon and establish no-entry zones where known fall chinook redds exist and are known to be at risk from possible damage from jetboats. Criteria to determine whether the area of redds is in need of a no-entry zone for protection would include:

- The redd is within the main channel of the river. If the redd is in a regularly travelled path of the river, a directional sign could be used to shift traffic away from the spawning fish in order to reduce the possibility of disturbance.

- The depth of the redd may be within a shallow enough depth to warrant protection. Depths where mechanical damage to spawning gravel is apparent, or where boats are known to operate in less than 18 inches of water would warrant protection.

- The location of the redd is in a high use area such as a popular stopping place or easily accessible beach. If a redd is discovered in a popular area, this site may be closed to boats from time of discovery until spawning is complete. If the concern is for disturbance of sediment which may enter the redd, the time of restriction would be extended till March to prevent potential adverse affects to developing embryos.

- Fall chinook seem to be congregation spawners. If an area within the river corridor is found to be a high use area for several redds, this area may warrant marking as a no-entry zone or as a no-wake zone to reduce the possibility of disturbance.

The marking of redds would be reserved for only those redds in critical need of such protection measure. Marking of redds may result in increased activity around spawning sites from curious boaters thereby increasing the possibil-

ity to harass spawning fish. The actual method of marking redds would be coordinated with State fisheries agencies, U.S. Fish and Wildlife Service, and the NMFS.

Actively educate visitors on the needs of sockeye and chinook salmon. Visitor introductions and information brochures would include information on the presence of threatened and endangered fish species, and the sensitivity of the populations to possible disturbance from jetboats or floatboats. Key information to be emphasized should include:

- Status of spring/summer and fall chinook salmon as threatened and sockeye salmon as endangered and the sensitivity of these fish populations to human interaction.

- Boaters should be aware of potential areas and times the fall chinook spawn. Once recognized, these areas should be avoided to reduce the possibility for interaction between boaters and spawning chinook salmon.

- When spawning areas are recognized, boaters should proceed through the area as quickly and quietly as possible without causing any excessive disturbance. They should also pass by the redd sites with as great a distance as possible, preferably 30 feet or more.

- Dragging or running boats and walking or wading over actual redds can be detrimental to eggs or embryos in the gravel.

During fishing seasons, the Forest Service would participate in visitor education in the identification of chinook salmon, and proper handling and release if one is caught.

MONITORING AND EVALUATION COMMON TO ALL ACTION ALTERNATIVES

Various activities would be monitored to provide an evaluation of the effect of management activities upon the environment of the corridor. Evaluations would measure compliance in achieving the goals and objectives of the Forest Plan, the protection and enhancement of the outstandingly remarkable values of the river corridor, and the ability to achieve and maintain the ROS characteristics displayed in Tables III-1 and III-2. Based upon an evaluation of the monitoring results, the interdisciplinary team would recommend to the Forest Supervisor such changes to the management direction for the river corridor.

Monitoring and evaluation have a distinctly different purpose and scope. In general, monitoring is designed to gather the data necessary for evaluation. During evaluation, data provided through monitoring are analyzed and interpreted. This process would be conducted and displayed through the annual Forest Plan Monitoring and Evaluation Report.

The Forest Plan (Chapter 5) and the Forest Plan Monitoring Implementation Plan (reference analysis file) provide a framework by which to monitor and evaluate the following items upon implementation of a selected alternative:

- Noxious Weeds
- Threatened and Endangered Species
- Fisheries
- Wild and Scenic Rivers
- Recreation Setting
- Visual Resource Objectives
- Cultural and Historic Site Protection, Rehabilitation, and Interpretation

The Forest Plan Monitoring and Implementation Plan provides an avenue in which management accomplishments, trends, and needs for the river corridor are reported and evaluated by the responsible managers. Because of the unique nature of the Wild and Scenic Snake River and the more refined management direction that would be established as part of a selected alternative, there is a need to conduct more specific monitoring and evaluation within the corridor. Appendix J displays specific monitoring elements for the FEIS Preferred Alternative G.

Implementation of the specific monitoring items are dependent upon funding levels as noted in Appendix J. The Forest Service would actively pursue cooperative agreements for monitoring with river users and organizations.

The specific monitoring elements in Appendix J incorporate, where feasible, the recommendations from the LAC planning process for "indicators" and "standards". In some instances, Forest Service monitoring protocol provides for clearer monitoring objectives and evaluation of data. In these cases, the proposed monitoring elements in Appendix J incorporate Forest Service monitoring protocol.

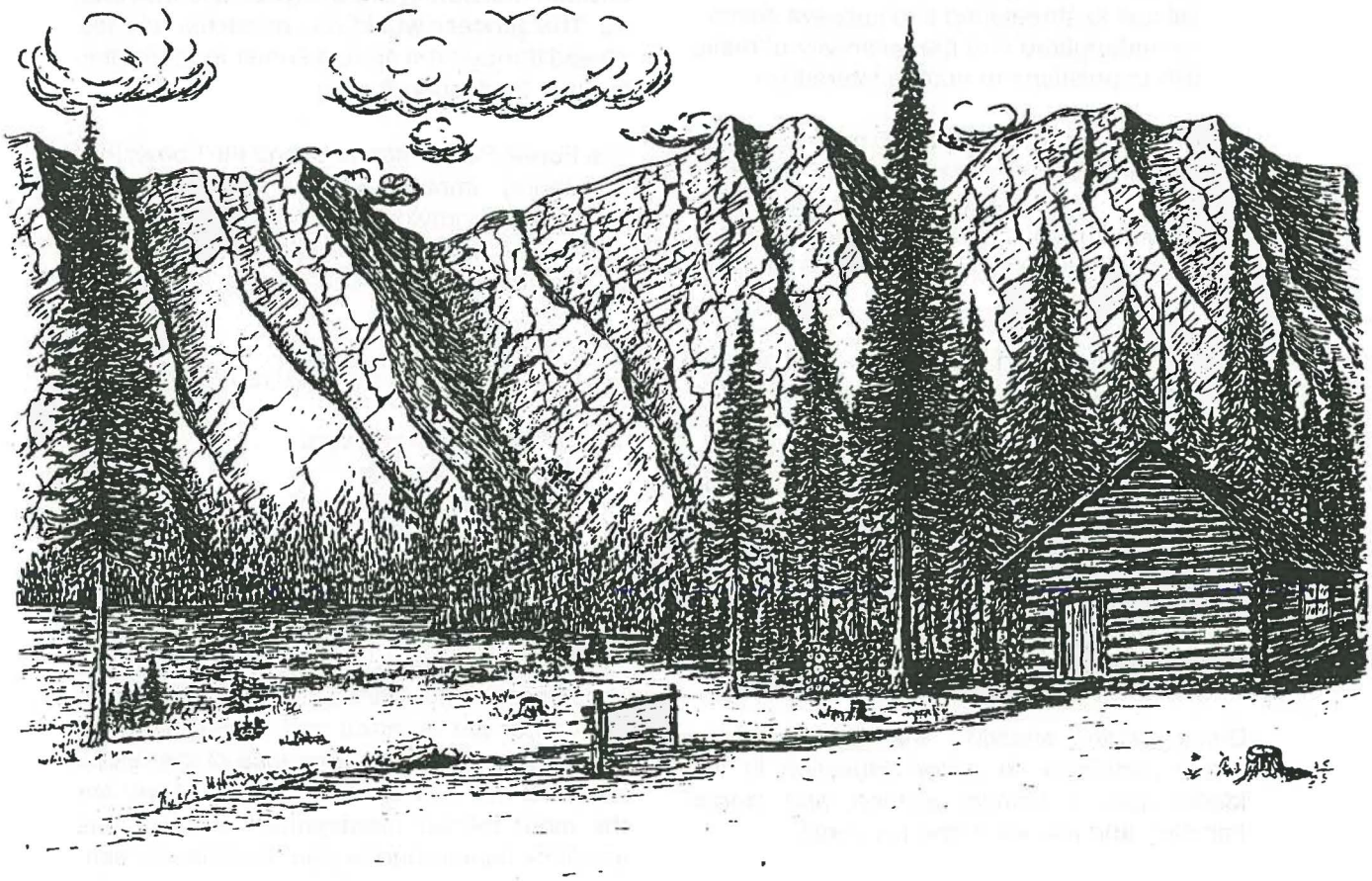
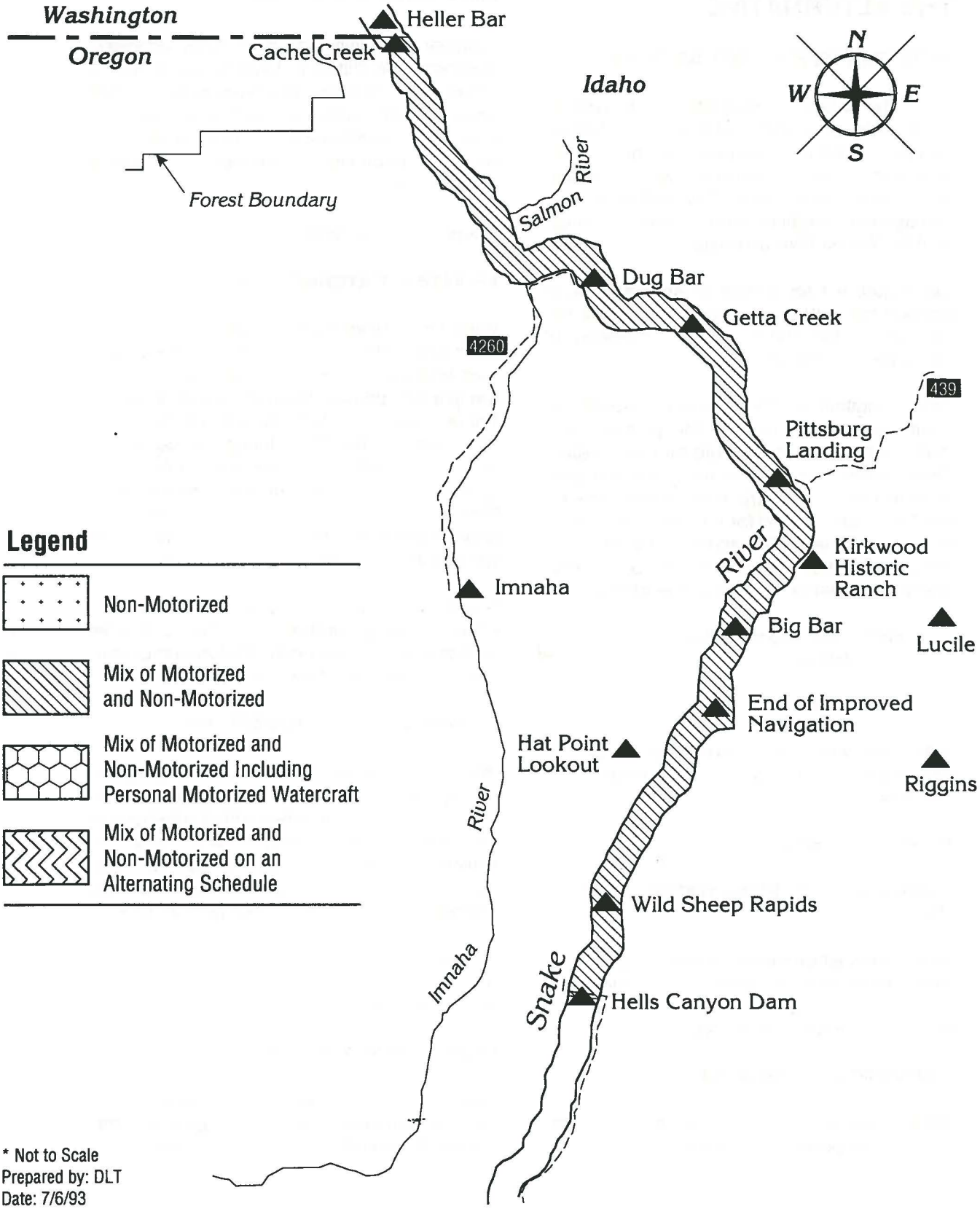


Figure II-1

Alternative A—Primary Season



* Not to Scale
Prepared by: DLT
Date: 7/6/93

DETAILED DESCRIPTION OF THE ALTERNATIVES

ALTERNATIVE A - NO ACTION

This is the "No Action" alternative as required by the National Environmental Policy Act. This alternative would not implement the proposed actions and provides a baseline in which to evaluate the action alternatives. Current Forest Plan management direction would remain in effect until the Forest Plan is revised.

See Figure II-1 for a map of Alternative A. A detailed map of the river corridor is inside the back cover. See Table II-1 for a summary of management requirements.

Implementation of this alternative would not contribute toward meeting the purpose and need for action or the desired future condition. Projected use levels for the wild and scenic sections would not lead the river corridor toward the DFC's established for the identified ORV's, short- or long-term. The effects of Alternative A are used as a frame of reference to compare the effects of implementing the action alternatives.

The specific management direction for Alternative A is as follows:

PRIVATE POWERBOAT USE

Wild. There would be no limits on private powerboat use, year-round. Self-issued permits would be required.

Scenic. Same as wild.

PERSONAL MOTORIZED WATERCRAFT USE

Wild. Personal motorized watercraft would remain permanently excluded, year-round.

Scenic. Continue year-round closure.

COMMERCIAL POWERBOAT USE

Wild. There would be no use level limits on commercial powerboats, year-round. The vacant permit at Hells Canyon Dam would be filled with a maximum of one boat.

Commercial powerboat permittees operating upstream from Pittsburg Landing would not be permitted to originate passengers above Wild Sheep Rapid (reference CMP). Commercial powerboat permittees would have no limits on boat size, party size, or number of day and/or overnight trips.

Scenic. Same as wild.

PRIVATE FLOATCRAFT USE

Wild. From Hells Canyon Dam to the top of Rush Creek Rapid, an allocation of 3 daily private float trip launches would continue during the primary season through use of a lottery. There would be no limits on the number of private float trip launches during the secondary season but self-issued permits would be required. From the bottom of Rush Creek Rapid to Pittsburg Landing, float trips launched from powerboats would be unrestricted. Self-issued permits would be required, year-round.

Scenic. Float trip launches would be unrestricted at Pittsburg Landing, Dug Bar, and when launched from powerboats. Self-issued permits would be required, year-round.

COMMERCIAL FLOATCRAFT USE

Wild. Two daily commercial float trip launches would continue during the primary season. Two one-day float trip launches with a maximum of two boats and supporting jetbacks, would be limited to one launch per day for each commercial outfitter on alternating days, Monday through Friday only, during the primary season.

Scenic. Float trip launches would be unrestricted at Pittsburg Landing and Dug Bar with no limit on number of trips.

LAUNCH RESERVATIONS

Launch reservations would be required only for float trip launches in the wild river between Hells Canyon Dam and the top of Rush Creek Rapid.

NUMBER OF FLOATCRAFT

Commercial and private float parties would be limited to a maximum of 30 craft per party, based on maximum party size, in all river sections.

PARTY SIZE

Party size would be limited to a maximum of 30 people during the primary season, and limited by conditions of use on permits during the secondary season for all river sections.

STAY LENGTH

Stay length would be one night at Saddle Creek, Upper Granite Creek, and Lower Granite Creek; all other sites would be 5 nights on all river sections during the primary season and 14 nights during the secondary season. Stay lengths may be adjusted to meet resource protection needs and/or to create more equitable opportunities for camping at popular sites.

DROP CAMPS, BACKPACKERS, HORSEPACKERS

Drops camps would continue to be permitted on the entire wild and scenic river. Party size for land-based users and drop camps would be restricted to 30 people, year-round.

CAMPSITE RESERVATIONS

Campsite reservations would continue to be a management option for the wild river section within existing CMP direction for the primary season.

RECREATION OPPORTUNITY SPECTRUM

The wild and scenic sections would be managed as semi-primitive, motorized.

NAVIGATION MARKERS

Markers would remain in place in all river sections.

PICNIC TABLES

Picnic tables would be retained in all river sections.

AIRCRAFT USE

Wild. Big Bar landing strip would remain open for private aircraft use; Sluice Creek would remain closed to all aircraft use. The entire wild river corridor would remain closed to rotary aircraft except for Big Bar airstrip.

Scenic. Cache Creek would remain closed to all aircraft use; Dug Bar, Pittsburg, and Salmon Bar would remain open for private aircraft use. The scenic section would remain open to rotary aircraft, except for the study river.

GRAZING ALLOTMENT, PERMITTEE FACILITY, AND PRIVATE INHOLDING ACCESS

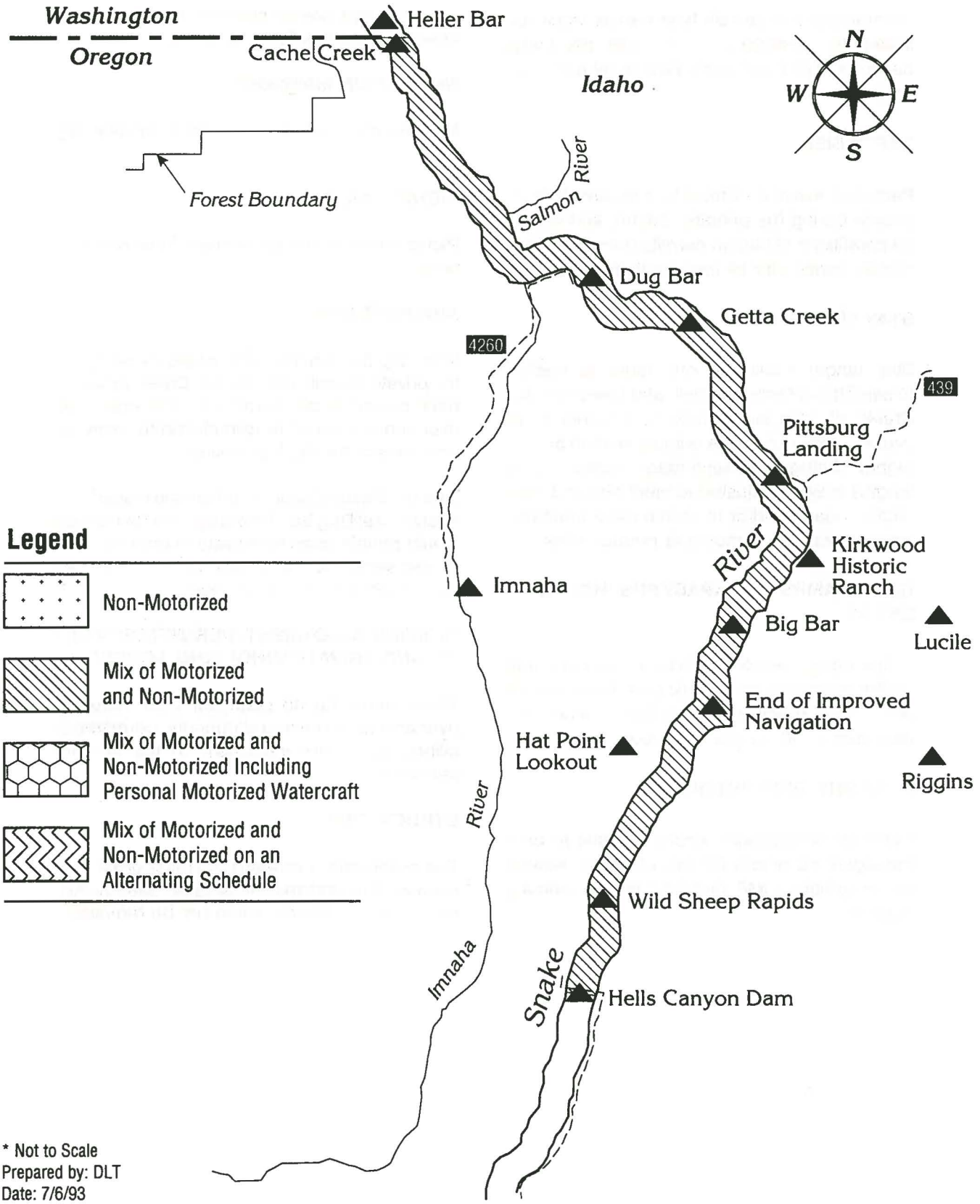
There would be no restrictions on motorized river access to grazing allotments, permittee facilities, or private inholdings in the corridor, year-round.

STRUCTURES

The metal shed upstream from Pittsburg Administrative Site and the metal grain silos at Kirkwood Historic Ranch would not be removed.

Figure II-2

Alternative B—Primary Season



* Not to Scale
Prepared by: DLT
Date: 7/6/93

ALTERNATIVE B - PROPOSED ACTION

This alternative was used in the scoping process to identify issues and generate a variety of concepts for designing alternatives to the proposed action. The recommendations from the LAC planning process, developed by the Forest Service as the proposed action, are the components of the alternative.

Implementation of this alternative would rapidly move the wild section to the DFC's established in Chapter I by providing a blend of motorized and non-motorized whitewater boating opportunities, during the primary season. Unlimited motorized access in the scenic section would not lead that section toward the DFC for an appropriate and equitable level of motorized and non-motorized access in support of the protection and enhancement of the outstandingly remarkable values.

See Figure II-2 for a map of Alternative B. See Table II-1 for a summary of management requirements. A detailed map of the river corridor is inside the back cover. Appendix I provides a discussion on the development of this alternative's use levels.

The following management direction would be added to the Forest Plan:

PRIVATE POWERBOAT USE

Wild. There would be a maximum of 635 permits for the primary season. Launches would be limited to 16 launches on Friday and Saturday (8 above Rush Creek and 4 above Granite Creek), and 8 launches on Sunday through Thursday (4 above Rush Creek and 2 above Granite Creek). Daily use would be monitored and regulated to ensure equitable private powerboat use is dispersed throughout the primary season to coincide with achieving the 635 maximum permits at the end of the primary season.

There would be no limitations during the secondary season, although self-issued permits would be required.

Scenic. Private powerboat use would be unlimited, year-round, with self-issued permits required.

PERSONAL MOTORIZED WATERCRAFT USE

Wild. Personal motorized watercraft would remain permanently excluded, year-round.

Scenic. A permanent, year-round, closure on personal motorized watercraft would be enacted.

COMMERCIAL POWERBOAT USE

Wild. Commercial powerboat use would be allowed to increase to 1,368 boat days and/or an average 12 commercial powerboats per day for the primary season. There would be no use level limits on commercial powerboats in the secondary season. The vacant permit at Hells Canyon Dam would be filled with a maximum of one boat.

Commercial powerboat permittees operating upstream from Pittsburg Landing would not be permitted to originate passengers above Wild Sheep Rapid (reference CMP), and would be limited to a maximum 49 passengers.

Scenic. Commercial powerboat use would be allowed to continue at existing levels of use and growth, year-round. Use limitations would be applied when monitoring indicates at least 50% of all boaters felt crowded above the confluence of the Snake and Salmon rivers (monitoring standard).

Commercial powerboats would be restricted to a maximum of 49 passengers.

Restrict powerboats to single-deck craft that do not exceed 44 feet in length in all sections of the river.

PRIVATE FLOATCRAFT USE

Wild. Private float trip launches would be limited by a seasonal maximum allocation of 348 launches during the primary season allowing for a maximum of 3 launches per day. In the secondary season, self-issued permits would be required and there would be no use level limitations.

Scenic. Float trip launches would be unrestricted downriver from (and including) Pittsburg Landing.

COMMERCIAL FLOATCRAFT USE

Wild. Commercial float trip launches would be limited by a seasonal maximum of 232 launches during the primary season allowing for a maximum of 2 launches per day. Two one-day floats with jetbacks would be permitted to operate on alternating days, seven days a week, with a two-boat maximum per trip. This includes the conversion of a full service commercial float permit to a one-day float permit. In the secondary season, self-issued permits would be required and there would be no use level limitations.

Scenic. Float trip launches would be unrestricted downriver from (and including) Pittsburg Landing.

LAUNCH RESERVATIONS

Launch reservations would be required only for float and powerboat trips in the wild river.

NUMBER OF FLOATCRAFT

Commercial and private float parties would be limited to a maximum of 30 craft per party for the entire wild and scenic river.

PARTY SIZE

Party size would be limited to a maximum of 30 people for all river users, year-round, for the entire wild and scenic river.

STAY LENGTH

Wild. Stay lengths would be limited to two nights per site during the primary season and six nights per site during the secondary season.

Scenic - Stay lengths would be limited to four nights per site during the primary season and six nights per site during the secondary season.

Stay lengths may be adjusted to meet resource protection needs and/or to create more equitable opportunities for camping at popular sites.

DROP CAMPS, BACKPACKERS, AND HORSEPACKERS

Drop camps would be allowed. Self-issued permits for backpackers and horsepackers would not be required.

CAMPSITE RESERVATIONS

Campsite reservations would be required in the wild river section for all users during the primary season, and in scenic section when more than 90% of the sites are occupied on 50% of the weekends (monitoring standard).

RECREATION OPPORTUNITY SPECTRUM

The wild section would be managed as semi-primitive, motorized. The scenic section would be managed as modified natural river. Reference the LAC recommendations for definitions of opportunity classes.

NAVIGATION MARKERS

Wild. Markers would be removed in cooperation with the Corps of Engineers.

Scenic. Markers would remain.

PICNIC TABLES

Picnic tables would remain in all river sections.

AIRCRAFT USE

Wild. Landing strips at Big Bar and Sluice Creek would be open to private aircraft use. During the primary season, use levels would be managed so 60% of the days would be free of aircraft landings.

Scenic. Landing strips at Cache Creek, Dug Bar, Pittsburg, and Salmon Bar would be open to aircraft use. Primary season use levels would be managed so 40% of the days would be free of aircraft landings.

Prohibit private and commercial floatplane landings on the entire river corridor during the primary season.

Restrict powerboats to single-deck craft that do not exceed 44 feet in length in all sections of the river.

GRAZING ALLOTMENT, PERMITTEE FACILITY, AND PRIVATE INHOLDING ACCESS

There would be no restrictions on motorized access to grazing allotments, permittee facilities, or private inholdings for the entire river corridor, year-round.

STRUCTURES

The metal shed upstream from Pittsburg Administrative Site and the metal grain silos at Kirkwood Historic Ranch would be removed.

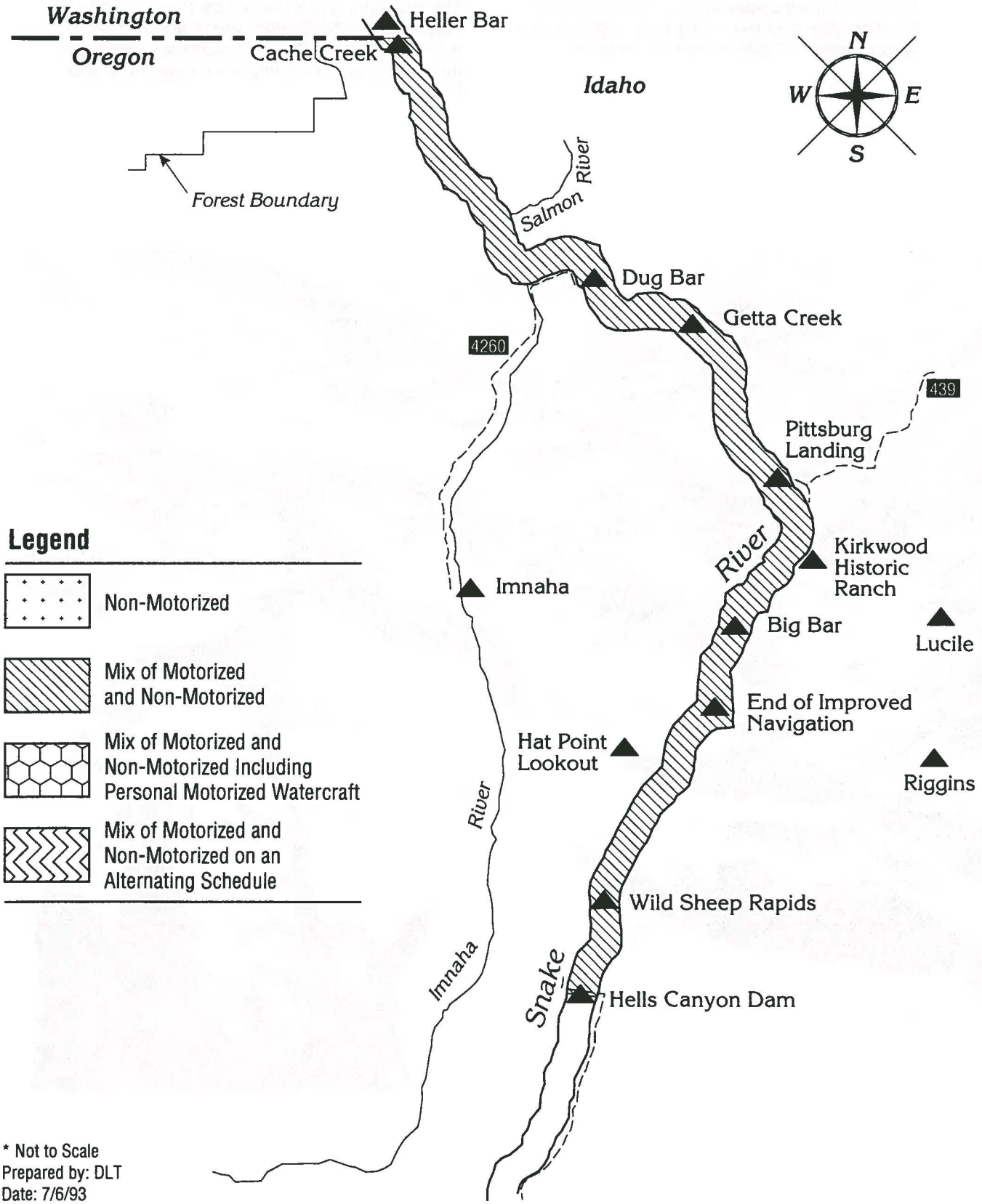
MONITORING SPECIFIC TO ALTERNATIVE B

The monitoring plan would be developed to incorporate the "indicator" and "standard" recommendations from the LAC planning process for monitoring and evaluating management effectiveness.



Figure II-3

Alternative C—Primary Season



* Not to Scale
Prepared by: DLT
Date: 7/6/93

ALTERNATIVE C

This alternative is designed to specifically address the significant issues of the protection of threatened and endangered salmon, managing for the intended recreation experience, and minimizing onshore degradation by emphasizing a balanced allocation of motorized and nonmotorized use levels within the entire corridor. Moderate use levels for both private and commercial users would be allocated from an average of the 1985 through 1989 use levels, for both the wild and scenic sections.

The entire river corridor would be managed for a semi-primitive motorized setting, requiring launch reservations for all river users in the entire river corridor and campsite reservations in the wild section.

Implementation of this alternative would rapidly move the entire river corridor to the DFC's established in Chapter I by providing an appropriate and equitable blend of motorized and nonmotorized whitewater boating opportunities within the entire river corridor, during the primary season. Additionally, the moderate and balanced use levels would quickly lead toward meeting the DFC's for the protection and enhancement of the identified ORV's within the entire river corridor.

See Figure II-3 for a map of Alternative C. See Table II-1 for a summary of management direction. A detailed map of the river corridor is inside the back cover. Appendix I provides a discussion on the development of this alternative's use levels.

The following management direction would be added to the Forest Plan:

PRIVATE POWERBOAT USE

Dam to Kirkwood. There would be a daily maximum of four permits with the wild section as a destination during the primary season. There would be no limitations during the secondary season, although self-issued permits would be required. When monitoring indicates that the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. There would be a daily maximum of five permits with the scenic section as a destination during the primary season. There would be no limitations during the secondary season although self-issued permits would be required. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

PERSONAL MOTORIZED WATERCRAFT USE

Dam to Kirkwood. Personal motorized watercraft would remain permanently excluded, year-round.

Kirkwood to Pittsburg. Same as Dam to Kirkwood.

Scenic. Personal motorized watercraft would be excluded for public use, year-round. Forest Service administrative use of two personal motorized watercraft would be allowed between the mouth of the Salmon River and the northern boundary of the corridor.

Administrative use of motorized personal watercraft in the scenic section would be dependent upon coordination with the Oregon State Marine Board's approval and possible amendment to Oregon Administrative Rule 250-21-040.

COMMERCIAL POWERBOAT USE

Dam to Kirkwood. There would be a daily maximum of four commercial powerboats allowed in the wild section for day and/or overnight use during the primary season. During the secondary season there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded. The vacant permit at Hells Canyon Dam would be eliminated.

Commercial powerboat permittees operating upstream from Pittsburg Landing would not be permitted to originate passengers above Wild Sheep Rapid (reference CMP).

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. There would be a daily maximum of five commercial boat permits for day and/or overnight use during the primary season. During the secondary season there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Restrict powerboats to single-deck craft that do not exceed 44 feet in length in all sections of the river.

PRIVATE FLOATCRAFT USE

Dam to Kirkwood. An allocation of three launches per day would be allowed during the primary season. (An unlimited number of daily launches would be allowed during the secondary season.) Self-issued permits would be required during the secondary season and there would be no limitation on the number of daily launches for private float trips.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. Allow for an average of one launch per day, either commercial or private, for the primary season at Pittsburg and Dug Bar, combined. When monitoring indicates the primary seasonal average exceeds one launch per day at Pittsburg and Dug Bar, combined, a daily limit would be implemented using a freedom of choice allocation system.

COMMERCIAL FLOATCRAFT USE

Dam to Kirkwood. An allocation of two launches per day would be allowed during the primary season. One-day float trips with or without jetbacks would be allowed as part of the multi-day allocation during the primary season. During the secondary season, one-day and multi-day float trips would not be restricted, although self-issued permits would be required.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. Allow for an average of one launch per day, either commercial or private, for the primary season at Pittsburg and Dug Bar, combined. When monitoring indicates the primary seasonal average exceeds one launch per day at Pittsburg and Dug Bar, combined, a daily limit would be implemented using a freedom of choice allocation system.

LAUNCH RESERVATIONS

Launch reservations would be required for all river users on the entire wild and scenic river.

NUMBER OF FLOATCRAFT

Commercial and private float parties would be limited to a maximum of eight floatcraft per party in all river sections, year-round.

PARTY SIZE

Party sizes for day and overnight use for all river corridor users (with the exception of commercial powerboat day-use) would be limited to a maximum of 20 people per party in all river sections, year-round.

STAY LENGTH

Stay lengths would be limited to five nights during the primary season and seven nights during the secondary season on the entire wild and scenic river.

Stay lengths may be adjusted to meet site specific resource protection needs and/or to create more equitable opportunity for camping at popular sites.

DROP CAMPS, BACKPACKERS, AND HORSEPACKERS

During the primary season, drop camp users would compete for campsite reservations in the wild section. Drop camp users, backpackers, and horsepackers would be required to obtain self-issued permits for river corridor use, year-round. Reserve camps for river- and land-based outfitters would be prohibited in the entire river corridor, year-round.

RECREATION OPPORTUNITY SPECTRUM

The wild and scenic sections would be managed as semi-primitive, motorized, as displayed in the ROS characteristics Tables, III-1 and III-2.

NAVIGATION MARKERS

Markers would remain in place in all river sections.

PICNIC TABLES

Dam to Kirkwood. Picnic tables would be removed.

Kirkwood to Pittsburg. Picnic tables would be removed except at the Kirkwood Historic Ranch where they would be available.

Scenic. Picnic tables would be available.

CAMPSITE RESERVATIONS

Campsite reservations would be required in the wild section during the primary season. There would be no campsite reservations in the scenic section.

AIRCRAFT USE

Dam to Kirkwood. Big Bar and Sluice Creek landing strips would be open to private aircraft use. When monitoring indicates use levels are impairing the ORV's, an allocation system would be implemented.

Kirkwood to Pittsburg. There are no landing strips located in this section.

Scenic. Cache Creek, Dug Bar, Pittsburg, and Salmon Bar landing strips would be open to private aircraft use. When monitoring indicates use levels are impairing the ORV's, an allocation system would be implemented.

Prohibit private and commercial floatplane landings on the entire river corridor during the primary season.

GRAZING ALLOTMENT, PERMITTEE FACILITY, AND PRIVATE INHOLDING ACCESS

Dam to Kirkwood. Motorized river access to the Temperance Creek Allotment would be limited to two trips per week during the primary season, and unlimited during the secondary season. Motorized river access to the Sheep Creek Allotment would be prohibited during the primary season but would not be restricted during the secondary season. Motorized access to the outfitter's facilities at Sheep Creek would be included in the daily maximum of commercial powerboat use.

Kirkwood to Pittsburg. During the primary season, motorized access of one round-trip per day would be allowed to the Kirby Creek inholding through a special use permit issued pursuant to the Alaska National Interest Lands Conservation Act of 1980 and the "Powerboat Access to Private Inholdings Guidelines" in the analysis file. Motorized access to the Kirby Creek inholding would not be restricted during the secondary season.

Scenic. During the primary season, motorized access of one round-trip per day would be allowed to grazing allotments, or private inholdings through special use permits issued pursuant to the Alaska National Interest Lands Conservation Act of 1980 and the "Powerboat Access to Private Inholdings Guidelines" in the analysis file. There would be no restrictions on motorized access to grazing allotments or private inholdings during the secondary season. Motorized access to the outfitters facilities at Copper Creek would be included in the daily maximum of commercial powerboat use.

STRUCTURES

The metal shed upstream from the Pittsburg administrative site and the metal grain silos at the Kirkwood Historic Ranch would be dismantled and removed.

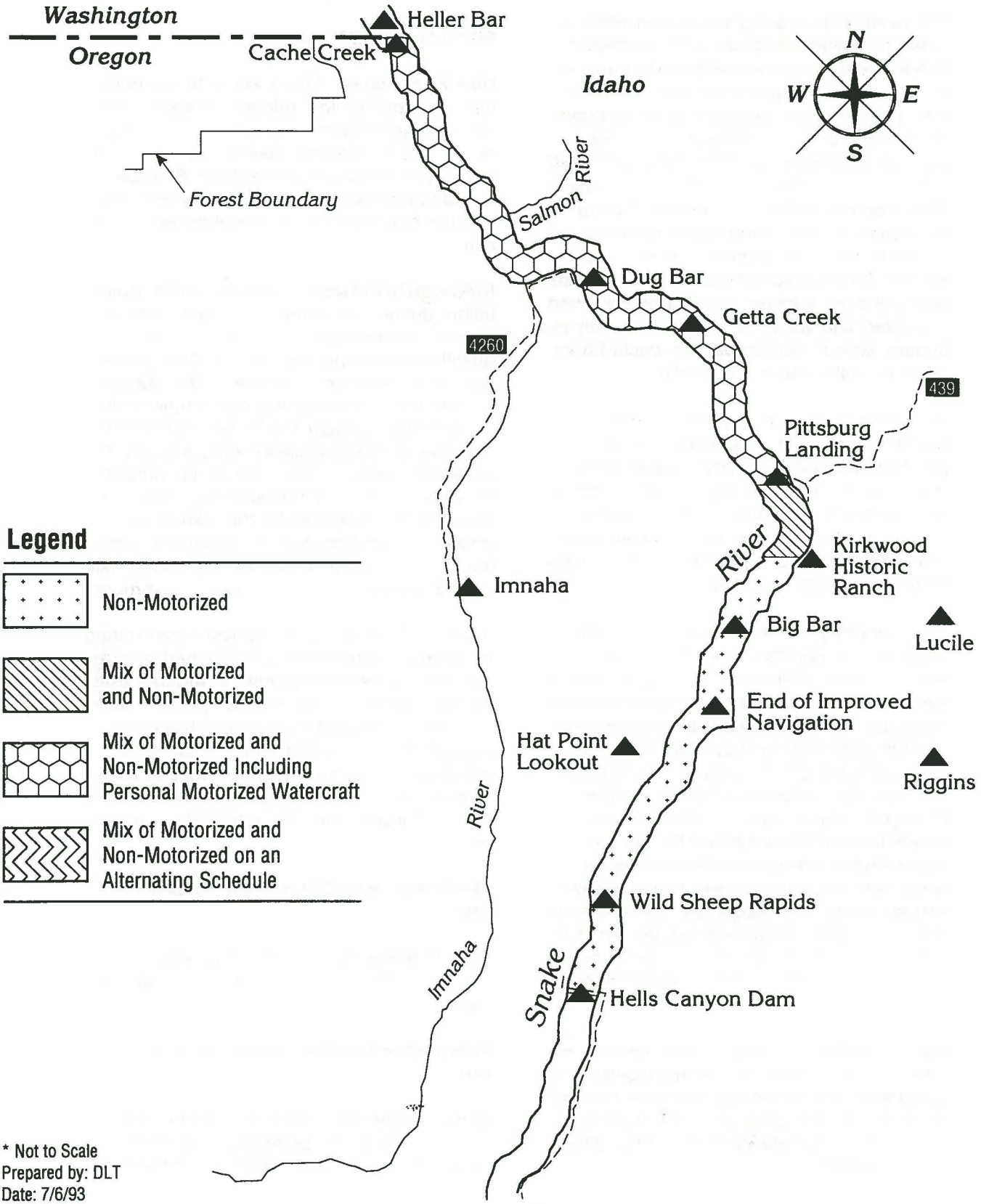
SPORTING EVENTS

No competitive sporting events would be allowed in the river corridor.



Figure II-4

Alternative D—Primary Season



* Not to Scale
Prepared by: DLT
Date: 7/6/93

ALTERNATIVE D

This alternative is designed to specifically address the significant issues of the protection of threatened and endangered salmon, managing for the intended recreation experience, and minimizing onshore degradation by emphasizing, during the primary season, the opportunity for a non-motorized recreation experience within Hells Canyon Dam to the Kirkwood Historic Ranch portion of the wild section. During the secondary season, a motorized recreation experience would be provided. Within the wild section, from Kirkwood Historic Ranch to Pittsburg Landing, a blend of motorized and non-motorized use would be provided during the primary season. Motorized use would be emphasized within the scenic section.

The non-motorized portion of the wild section would be managed to provide a semi-primitive non-motorized recreation setting during the primary season, requiring launch and campsite reservations for floatboaters. The remainder of the wild section and the entire scenic section would be managed to provide a semi-primitive motorized recreation setting.

While providing a seasonal approach to an appropriate and equitable blend of motorized and non-motorized whitewater boating opportunities, implementation of this alternative would not move the section between Hells Canyon Dam and Kirkwood Historic Ranch quickly or equitably toward the DFC's presented in Chapter I. The alternative would lead the wild section from Kirkwood Historic Ranch to Pittsburg Landing rapidly toward the established DFC's by providing a blend of motorized and non-motorized use levels and equitable access to the Kirkwood Historic Ranch. Although the scenic section would emphasize motorized use, the prohibited launching of floatcraft in the scenic section would not move this section toward the established DFC's.

See Figure II-4 for a map of Alternative D. See Table II-1 for a summary of management requirements. A detailed map of the river corridor is inside the back cover. Appendix I provides a discussion on the development of this alternative's use levels.

The following management direction would be added to the Forest Plan:

PRIVATE POWERBOAT USE

Dam to Kirkwood. There would be no motorized use during the primary season. There would be no limitation on private powerboat use during the secondary season, although self-issued permits would be required. Emergency use of Forest Service powerboats would occur with the Area Ranger's approval during the primary season.

Kirkwood to Pittsburg. There would be no limitation during the primary season until use reached an average of six boats per day (20% growth over existing use) entering this river section. When monitoring indicates the standard has been exceeded for two consecutive years, an allocation system would be implemented. There would be no limitation on use during the secondary season. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded. Self-issued permits would be required, year-round.

Scenic. There would be no limitations during the primary season until use reached an average of 13 boats per day (20% growth over existing use) entering the scenic section. When monitoring indicates the standard has been exceeded for two consecutive years, an allocation system would be implemented. There would be no limitation on use during the secondary season. Self-issued permits would be required, year-round.

PERSONAL MOTORIZED WATERCRAFT USE

Dam to Kirkwood. Personal motorized watercraft would remain permanently excluded, year-round.

Kirkwood to Pittsburg. Same as Dam to Kirkwood.

Scenic. A one-day permit of up to four crafts for day-use only would be established for the primary season between Pittsburg and the north-

ern boundary of the NRA. In the secondary season, self-issued permits would be required with no use level limitations. An education program would be developed for personal motorized watercraft users to stress proper river etiquette and safety.

Forest Service administrative use of two personal motorized watercraft would be allowed between the mouth of the Salmon River and the northern boundary of the corridor.

Use of motorized personal watercraft in the scenic section would be dependent upon coordination with the Oregon State Marine Board's approval and the possible amendment of Oregon Administrative Rule 250-21-040.

COMMERCIAL POWERBOAT USE

Dam to Kirkwood. There would be no motorized use during the primary season. During the secondary season there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed established thresholds for protecting and enhancing the ORV's for two consecutive years, the control period for the primary season would be expanded. The vacant permit at Hells Canyon Dam would be eliminated. During the primary season, the operator at Hells Canyon Dam would be given the option of operating from Pittsburg Landing, Dug Bar, or the Lewiston-Clarkston area.

Commercial powerboat permittees operating upstream from Pittsburg Landing outside of the primary season would not be permitted to originate passengers above Wild Sheep Rapid (reference CMP).

Kirkwood to Pittsburg. During the primary season, there would be a daily maximum of six commercial powerboat permits for day-use only (20% growth over existing use) with this section as a destination. During the secondary season, there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Scenic. There would be no limitations during the primary season until use reached an average of seven boats per day (20% growth over existing use). When monitoring indicates the standard has been exceeded for two consecutive years, an allocation system would be implemented. During the secondary season, there would be no limitation on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Restrict powerboats to single-deck craft that do not exceed 44 feet in length in all sections of the river.

PRIVATE FLOATCRAFT USE

Dam to Kirkwood. An allocation of three launches per day would be allowed during the primary season. During the secondary season, there would be no limitation on the number of private float trip launches, although self-issued permits would be required. Motors would be prohibited on floatcraft during the primary season.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. Launches from Pittsburg and Dug Bar would be prohibited during the primary season. Self-issued permits would be required for the secondary season.

COMMERCIAL FLOATCRAFT USE

Dam to Kirkwood. An allocation of two launches per day would be allowed during the primary season. During the secondary season, there would be no limitation on the number of daily float trip launches, although self-issued permits would be required. One-day floats with jetbacks would only be allowed during the secondary season with no use limitations; self-issued permits would be required. Motors would be prohibited on floatcraft during the primary season.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. Launches from Pittsburg to Dug Bar would be prohibited during the primary season. Self-issued permits would be required for the secondary season.

LAUNCH RESERVATIONS

Launch reservations for float trips would be required in all river sections during the primary season. Launch reservations for powerboats would not be required in any river section, year-round, until monitoring indicated a need for an allocation system.

NUMBER OF FLOATCRAFT

Commercial and private float parties would be limited to a maximum of eight floatcraft per party in all river sections, year-round.

PARTY SIZE

Party sizes for day- and overnight-use for all river corridor users (with the exception of commercial powerboat day-use) would be limited to a maximum of 20 people per party in all river sections, year-round.

STAY LENGTH

In the wild section stay lengths would be two nights during the primary season and seven nights during the secondary season. Scenic section stays would be limited to five nights during the primary season and seven nights during the secondary season. If monitoring indicates a need and a use allocation system is implemented in the scenic section, stay lengths would be shortened.

Stay lengths may be adjusted to meet site specific resource protection needs and/or to create more equitable opportunities for camping at popular sites.

DROP CAMPS, BACKPACKERS, AND HORSEPACKERS

No drop camps would be permitted in the wild section, year-round, but they would be permitted in the scenic section. Drop camp users, backpackers, and horsepackers would be required to obtain self-issued permits for river corridor camping, year-round, when permitted. Reserve camps for river- and land-based outfitters would be prohibited in the entire river corridor, year-round.

CAMPSITE RESERVATIONS

No campsite reservations would be required in the wild or scenic sections. In the scenic section, if an allocation system is implemented for motorized use based on monitoring, the implementation of a campsite reservation system would be considered.

RECREATION OPPORTUNITY SPECTRUM

Dam to Kirkwood. During the primary season, this section would be managed as semi-primitive, non-motorized, pursuant to the Regional ROS guidelines. During the secondary season, it would be managed as semi-primitive, motorized, as displayed in the ROS characteristics, Table III-1.

Kirkwood to Pittsburg. This section would be managed as semi-primitive, motorized, year-round, as displayed in the ROS characteristics, Table III-1.

Scenic. This section would be managed as semi-primitive, motorized, year-round, as displayed in the ROS characteristics, Table III-2.

NAVIGATION MARKERS

Markers would be removed from the wild section (Dam to Pittsburg) in cooperation with the Corps of Engineers, and would remain in the scenic section.

PICNIC TABLES

Picnic tables would be removed from the wild section (Dam to Pittsburg), except at Kirkwood Historic Ranch where they would be available. Picnic tables would remain in the scenic section.

AIRCRAFT USE

Dam to Kirkwood. Big Bar and Sluice Creek landing strips would be closed to regular use but would remain open for emergency use.

Kirkwood to Pittsburg. There are no landing strips located in this section.

Scenic. Cache Creek, Dug Bar, Pittsburg, and Salmon Bar landing strips would be open for private aircraft use. When monitoring indicates use levels are impairing the ORV's, an allocation system would be implemented.

Prohibit private and commercial floatplane landings on the entire river corridor during the primary season.

GRAZING ALLOTMENT, PERMITTEE FACILITY, AND PRIVATE INHOLDING ACCESS

Dam to Kirkwood. Motorized river access to Temperance Creek and Sheep Creek Allotments and the Sheep Creek facilities would be prohibited during the primary season but would be unlimited in the secondary season. Onshore motorized ranching operations would be permissible at the Temperance Creek Ranch headquarters during the primary season. The permitted Sheep Creek outfitter would be allowed to continue facility operations by catering to float, backpack, and horsepack parties.

Kirkwood to Pittsburg. During the primary season, motorized access of one round-trip per day would be allowed to the Kirby Creek inholding through a special use permit issued pursuant to the Alaska National Interest Lands Conservation Act of 1980 and the "Powerboat Access to Private Inholdings Guidelines" in the analysis file. Motorized access to the Kirby Creek inholding would not be restricted during the secondary season. In cooperation with the U. S. Postal Service, mail would only be delivered as far as Kirkwood.

Scenic. During the primary season, motorized access of one round-trip per day would be allowed to grazing allotments or private inholdings through special use permits issued pursuant to the Alaska National Interest Lands Conservation Act of 1980 and the "Powerboat Access to Private Inholdings Guidelines" in the analysis file. There would be no restrictions on motorized access to grazing allotments or private inholdings during the secondary season.

STRUCTURES

The metal shed upstream of the Pittsburg Administrative site and the metal grain silos at the Kirkwood Historic Ranch would be dismantled and removed.

SPORTING EVENTS

No competitive sporting events would be allowed in the river corridor.

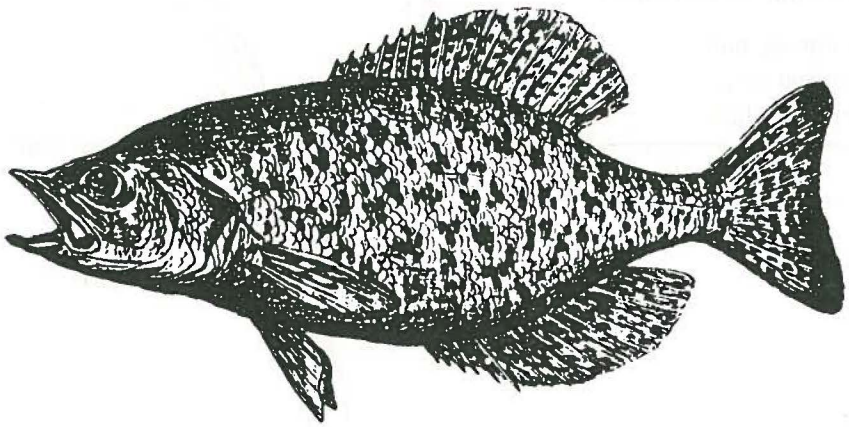
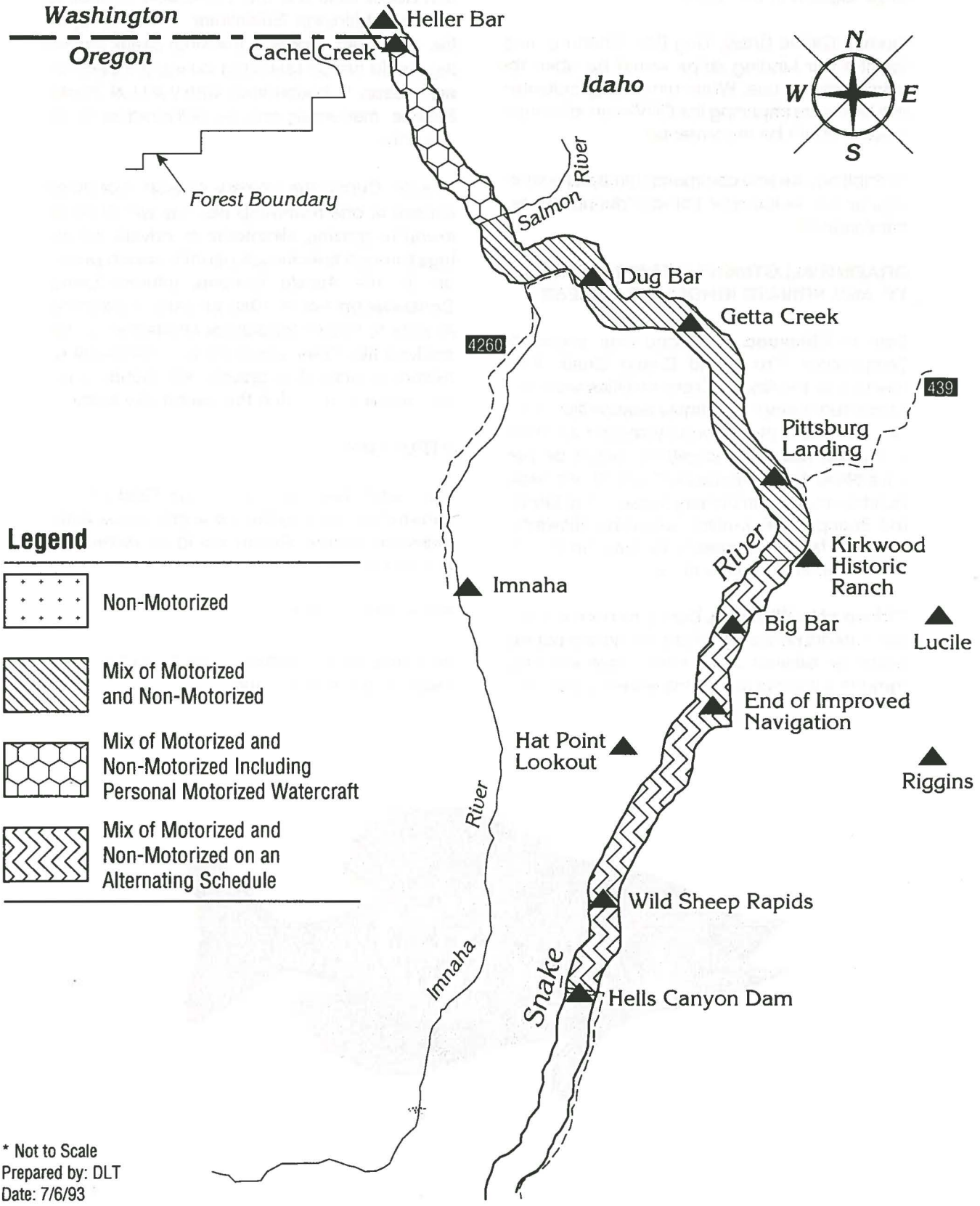


Figure II-5

Alternative E—Primary Season



* Not to Scale
Prepared by: DLT
Date: 7/6/93

ALTERNATIVE E

This alternative is designed to specifically address the significant issues of the protection of threatened and endangered salmon, effects of recreation use regulation on socio-economic conditions, managing for the intended recreation experience, and minimizing onshore degradation. These issues would be resolved by emphasizing, during the primary season, the opportunity for alternating weeks of exclusive motorized and exclusive non-motorized recreation use in the wild section from Hells Canyon Dam to the Kirkwood Historic Ranch. During the secondary season, a blend of motorized and non-motorized recreation experiences would be provided. Within the wild section, from Kirkwood Historic Ranch to Pittsburg Landing, a blend of motorized and non-motorized use would be provided during the primary season. Regulated motorized use would be emphasized within the scenic section.

Hells Canyon Dam to the Kirkwood Historic Ranch section of the wild river would be managed to provide both a semi-primitive non-motorized and semi-primitive motorized recreation settings during their respective week of exclusive use through the primary season. The remainder of the wild section and the entire scenic section would be managed to provide a semi-primitive motorized recreation setting.

Implementation of this alternative would rapidly move the wild section, from Hells Canyon Dam to the Kirkwood Historic Ranch, toward the DFC's established in Chapter I by providing an exclusive weekly approach to an appropriate and equitable blend of motorized and non-motorized whitewater boating opportunities. The alternative would lead the wild section, from Kirkwood Historic Ranch to Pittsburg Landing, rapidly toward the established DFC's by providing a blend of motorized and non-motorized use levels and equitable access to the Kirkwood Historic Ranch. The regulated motorized and non-motorized use within the scenic section would rapidly move this portion of the river toward its DFC's by emphasizing the protection and enhancement of the ORV's.

See Figure II-5 for a map of Alternative E. See Table II-1 for a summary of management requirements. A detailed map of the river corridor is inside the back cover. Appendix I provides a discussion on the development of this alternative's use levels.

The following management direction would be added to the Forest Plan:

PRIVATE POWERBOAT USE

Dam to Kirkwood. There would be exclusive motorized-only, biweekly use from Thursday through Wednesday on alternating weeks for a daily maximum of 24 boats within the wild section during the primary season. This would be accomplished by allowing eight launches per day and assuming a three-day stay length (reference Appendix I).

In the secondary season, self-issued permits would be required and there would be no limitation on private powerboat use. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Kirkwood to Pittsburg. During the exclusive motorized week for powerboats, this section would be included in the allocation of a daily maximum of 24 powerboats. During the exclusive non-motorized weeks in the primary season, private powerboat use would be restricted to eight powerboats per day. Of these eight, a daily maximum of two powerboats would be available for overnight use. The remaining six powerboats would be for day-use only.

In the secondary season, self-issued permits would be required and there would be no limitation on private powerboat use. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Scenic. During the primary season, Monday through Thursday private powerboat use would be restricted to 10 powerboats per day. Friday

through Sunday private powerboat use would be restricted to 20 powerboats per day.

During the secondary season there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded. Self-issued permits would be required, year-round.

PERSONAL MOTORIZED WATERCRAFT USE

Dam to Kirkwood. Personal motorized watercraft would be permanently excluded.

Kirkwood to Pittsburg. Same as Dam to Kirkwood.

Scenic. During the primary season, one daily permit of up to four craft would be available for day-use only between the Salmon River and the northern boundary of the NRA. During the secondary season, personal motorized watercraft would be allowed within the Salmon River to northern boundary of the NRA; and there would be no restrictions on use levels, although self-issued permits would be required. The Pittsburg Landing to Salmon River section would have a permanent closure on the use of personal motorized watercraft. An education program would be developed for personal motorized watercraft users to stress proper river etiquette and safety.

Forest Service administrative use of two personal motorized watercraft would be allowed between the mouth of the Salmon River and the northern corridor boundary.

Use of motorized personal watercraft in the scenic section would be dependent upon coordination with the Oregon State Marine Board's approval and the possible amendment of Oregon Administrative Rule 250-21-040.

COMMERCIAL POWERBOAT USE

Dam to Kirkwood. There would be exclusive motorized-only, biweekly use from Thursday through Wednesday on alternating weeks with a daily maximum of 12 commercial powerboat trips with the wild section as a destination. Of these 12, a daily maximum of 6 commercial powerboat trips would be available for overnight use during the primary season (maximum of 12 commercial powerboats per day).

During the secondary season there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

The vacant permit at Hells Canyon Dam would be eliminated.

Commercial powerboat permittees operating upstream from Pittsburg Landing would not be permitted to originate passengers above Wild Sheep Rapid (reference CMP).

Kirkwood to Pittsburg. During the exclusive motorized week, this section would be included in the allocation for the Dam to Kirkwood section with a total daily maximum of 12 commercial powerboats. During the non-motorized week, use would be restricted to a daily maximum of 4 commercial powerboats for day-use only.

During the secondary season there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Scenic. During the primary season, for the exclusive motorized use in the wild section, the scenic allocation would be included in the wild section's allocation (12 boats/day total for entire river corridor). During the exclusive non-motorized week in the wild section, there would be a maximum eight boats per day.

During the secondary season there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control

period for the primary season would be expanded.

Restrict powerboats to single-deck craft that do not exceed 44 feet in length in all sections of the river.

PRIVATE FLOATCRAFT USE

Dam to Kirkwood. There would be exclusive non-motorized-only, biweekly use from Thursday through Wednesday on alternating weeks with a maximum of four launches per day during the primary season. Motors would be prohibited on floatcraft during the primary season. During the secondary season there would be no limitations on use levels, although self-issued permits would be required.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. Allow for an average of one launch per day, either commercial or private, for the primary season at either Pittsburg or Dug Bar. When monitoring indicates the primary seasonal average exceeds one launch per day at Pittsburg and Dug Bar, a daily limit would be implemented using a freedom of choice allocation system.

COMMERCIAL FLOATCRAFT USE

Dam to Kirkwood. There would be exclusive non-motorized-only, biweekly use from Thursday through Wednesday on alternating weeks with a maximum of three launches per day during the primary season. Motors would be prohibited on floatcraft during the primary season. During the secondary season there would be no limitations on use levels, although self-issued permits would be required. One-day floats with jetbacks would be allowed only during the secondary season and self-issued permits would be required.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. Allow for an average of one launch per day, either commercial or private, for the primary season either at Pittsburg and Dug Bar. When monitoring indicates the primary seasonal average exceeds one launch per day at Pittsburg and Dug Bar, a daily limit would be implemented using a freedom of choice allocation system.

LAUNCH RESERVATIONS

Launch reservations would be required in the wild river section for all users during the primary season.

Launch reservations in the scenic section would only be required if monitoring standards are exceeded.

NUMBER OF FLOATCRAFT

Commercial and private float parties would be limited to a maximum of eight floatcraft per party in all river sections year-round.

PARTY SIZE

Party size for day- and overnight-use for all river corridor users (with the exception of commercial powerboat day-use) would be limited to a maximum of 20 people per party in all river sections, year-round.

STAY LENGTHS

Stay lengths in the wild section would be two nights for float parties and four nights for powerboat parties during the primary season, and seven nights for all users during the secondary season. Scenic section stay lengths would be five nights for all users during the primary season, and seven nights during the secondary season. If monitoring indicates a need, and a use allocation system is implemented in the scenic section, stay lengths would be shortened.

Stay lengths may be adjusted to meet site specific resource protection needs and/or to create more equitable opportunities for camping at popular sites.

DROP CAMPS, BACKPACKERS, AND HORSEPACKERS

During the primary season, drop camps would only be available during the motorized weeks in the wild section. Drop camp users would com-

pete for private powerboat launch reservations during the primary season. Drop camp users, backpackers, and horsepackers would be required to obtain self-issued permits for river corridor use, year-round. Reserve camps for river- and land-based outfitters would be prohibited in the entire river corridor, year-round.

CAMPSITE RESERVATIONS

Campsite reservations would be required for floatboaters only in the wild section between Hells Canyon Dam and Kirkwood Historic Ranch during the primary season. If monitoring indicates a need, and an allocation system is implemented for motorized users in the scenic section, a campsite reservation system would be considered.

RECREATION OPPORTUNITY SPECTRUM

Dam to Kirkwood. During the primary season, this section would be managed as semi-primitive, motorized during the weeks allowing motorized use, and managed as semi-primitive, non-motorized during the weeks allowing non-motorized use. The ROS would be semi-primitive, motorized in the secondary season. Both periods of use would be managed pursuant to the ROS characteristics displayed in Table III-1.

Kirkwood to Pittsburg. This section would be managed as semi-primitive, motorized, year-round, pursuant to the ROS characteristics displayed in Table III-1.

Scenic. This section would be managed as semi-primitive, motorized, year-round, pursuant to the ROS characteristics displayed in Table III-2.

NAVIGATION MARKERS

Markers would be removed from the wild river section above Kirkwood in cooperation with the Corps of Engineers, and would remain in the wild section between Kirkwood and Pittsburg and in the scenic section.

PICNIC TABLES

Picnic tables would be removed from the wild river section, except they would remain at Kirkwood Historic Ranch. Picnic tables would remain in the scenic section.

AIRCRAFT USE

Dam to Kirkwood. In the primary season, Big Bar and Sluice Creek landing strips would be open to private aircraft during motorized-use weeks and closed to all aircraft except for emergency use, during non-motorized-use weeks. During the secondary season, the landing strips would be open to private aircraft. When monitoring indicates use levels are impairing the ORV's, an allocation system would be implemented.

Kirkwood to Pittsburg. There are no landing strips located in this section.

Scenic. Cache Creek, Dug Bar, Pittsburg, and Salmon Bar landing strips would be open to private aircraft use, year-round. When monitoring indicates use levels are impairing the ORV's, an allocation system would be implemented.

Prohibit private and commercial floatplane landings on the entire river corridor during the primary season.

GRAZING ALLOTMENT, PERMITTEE FACILITY, AND PRIVATE INHOLDING ACCESS

Dam to Kirkwood. Motorized access to Temperance Creek S&G Allotment would be prohibited during the non-motorized week of the primary season, with the exception of approved emergency use by the Area Ranger. Motorized access to the Sheep Creek S&G Allotment and the outfitter camp at Sheep Creek would be prohibited during the non-motorized week of the primary season. Onshore motorized ranching operations would be permissible at the Temperance Creek Ranch headquarters during the exclusive non-motorized week. During motorized weeks of the primary season, motorized access would not be restricted. During the secondary season, there would be no restrictions on motorized access.

Kirkwood to Pittsburg. During the primary season, motorized access of one round-trip per day would be allowed to the Kirby Creek inholding through a special use permit issued pursuant to the Alaska National Interest Lands Conservation Act of 1980 and the "Powerboat Access to Private Inholdings Guidelines" in the analysis file. Motorized access to the Kirby Creek inholding would not be restricted during the secondary season. In cooperation with the U. S. Postal Service, mail would only be delivered as far as Kirkwood during non-motorized weeks.

Scenic. During the primary season, motorized access of one round-trip per day would be allowed to grazing allotments or private inholdings through special use permits issued pursuant to the Alaska National Interest Lands Conservation Act of 1980 and the "Powerboat Access to Private Inholdings Guidelines" in the analysis file. There would be no restrictions on motorized access to grazing allotments or private inholdings during the secondary season.

STRUCTURES

The metal shed upstream of the Pittsburg administrative site and the metal grain silos at the Kirkwood Historic Ranch would be dismantled and removed.

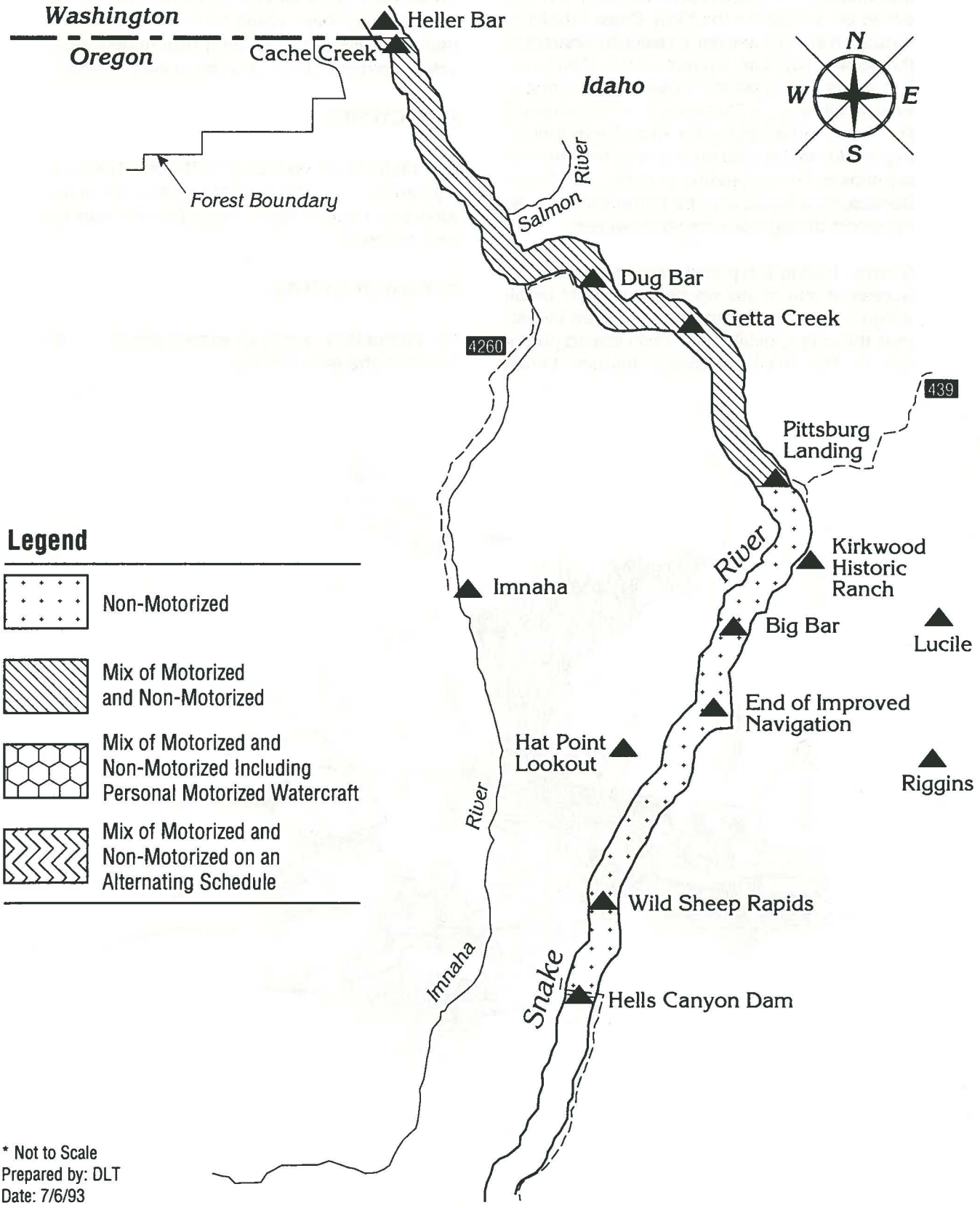
SPORTING EVENTS

No competitive sporting events would be allowed in the river corridor.



Figure II-6

Alternative F—Primary and Secondary Seasons



* Not to Scale
Prepared by: DLT
Date: 7/6/93

ALTERNATIVE F

This alternative is designed to specifically address the significant issues of the protection of threatened and endangered salmon and minimizing onshore degradation. These issues would be resolved by emphasizing an exclusive non-motorized recreation experience in the entire wild section, year-round. A motorized recreation experience would be emphasized within the scenic section, year-round.

The wild section would be managed to provide a primitive recreation setting, while requiring launch reservations. The scenic section would be managed to provide a semi-primitive motorized recreation setting.

While providing a primitive non-motorized recreation setting in the wild section, implementation of this alternative would not move the wild section toward its DFC's established for providing appropriate and equitable level of access or to Kirkwood Historic Ranch. Although the scenic section would emphasize motorized use, the prohibited launching of floatcraft in the Scenic section would not move this section toward the established DFC's for this section of river.

See Figure II-6 for a map of Alternative F. See Table II-1 for a summary of management requirements. A detailed map of the river corridor is inside the back cover. Appendix I provides a discussion on the development of use levels for this alternative.

The following management direction would be added to the Forest Plan:

PRIVATE POWERBOAT USE

Dam to Kirkwood. There would be no motorized use at any time during the year. Emergency use of Forest Service powerboats would occur with the Area Ranger's approval.

Kirkwood to Pittsburg. Same as Dam to Kirkwood except for continued motorized access to the Kirby Creek Ranch inholding from downriver launch locations (based on historic use) as noted in the alternative.

Scenic. There would be no limitations on use during the primary season until use reaches an average of 14 boats per day (30% growth over existing use) entering the scenic section. When monitoring indicates the standard has been exceeded for two consecutive years, an allocation system would be implemented.

During the secondary season, there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded. Self-issued permits would be required, year-round.

PERSONAL MOTORIZED WATERCRAFT USE

Personal motorized watercraft would be permanently excluded, year-round, in all river sections except for Forest Service administrative use of two personal motorized watercraft between the mouth of the Salmon River and the northern boundary of the NRA.

Administrative use of motorized personal watercraft in the scenic section would be dependent upon coordination with the Oregon State Marine Board's approval and the possible amendment of Oregon Administrative Rule 250-21-040.

COMMERCIAL POWERBOAT USE

Dam to Kirkwood. There would be no motorized use at any time during the year. The commercial operator at Hells Canyon Dam would be given the option of operating from Pittsburg Landing, Dug Bar, or Lewiston/Clarkston area. The vacant permit at Hells Canyon Dam would be eliminated.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. There would be no limitations on use during the primary season until use reached an average eight commercial powerboats per day (30% growth over existing use). When monitoring indicates the standard has been exceeded

for two consecutive years, an allocation system would be implemented.

During the secondary season, there would be no limitations on use levels. When monitoring indicates the daily averages in the secondary season exceed those established for the primary season for two consecutive years, the control period for the primary season would be expanded.

Restrict powerboats to single-deck craft that do not exceed 44 feet in length in all sections of the river.

PRIVATE FLOATCRAFT USE

Dam to Kirkwood. There would be a maximum allocation of 100 users per day, commercial and private, during the primary season. Permit holders would choose between using a commercial outfitter's service or running a private float trip. During the secondary season there would be no limitation on use, although self-issued permits would be required. Motors on floatcraft would be prohibited, year-round.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. Launches from Pittsburg and Dug Bar would be prohibited during the primary season. Self-issued permits would be required for the secondary season.

COMMERCIAL FLOATCRAFT USE

Dam to Kirkwood. There would be a maximum allocation of 100 users per day, commercial and private, during the primary season. Permit holders would choose between using a commercial outfitter's service or running a private float trip. During the secondary season there would be no limitations on use, although self-issued permits would be required. Motors on floatcraft would be prohibited, year-round.

Kirkwood to Pittsburg. Included in the allocation for the Dam to Kirkwood section.

Scenic. Launches from Pittsburg to Dug Bar would be prohibited during the primary season. Self-issued permits would be required for the secondary season.

LAUNCH RESERVATIONS

Launch reservations would be required in the entire wild and scenic river for all floatboaters during the primary season but would not be required for powerboat users in the scenic section.

NUMBER OF FLOATCRAFT

Commercial and private float parties would be limited to a maximum of eight floatcraft per party in all river sections, year-round.

PARTY SIZE

Party size for day and overnight use for all river corridor users (with the exception of commercial powerboat day-use) would be limited to a maximum of 20 people per party in all river sections, year-round.

STAY LENGTH

Stay lengths in the wild section would be two nights during the primary season, and seven nights during the secondary season. Scenic section stay lengths would be five nights during the primary season, and seven nights during the secondary season. If monitoring indicates a need, and a use allocation system is implemented in the scenic section, stay lengths would be shortened.

Stay lengths may be adjusted to meet site specific resource protection needs and/or to create more equitable opportunities for camping at popular sites.

DROP CAMPS, BACKPACKERS, AND HORSEPACKERS

No drop camps would be permitted in the wild section but would be allowed in the scenic section. Drop camp users (where permitted), backpackers, and horsepackers would be required to obtain self-issued permits for river corridor use, year-round. Reserve camps for river- and land-based outfitters would be prohibited in the entire river corridor, year-round.

CAMPSITE RESERVATIONS

No campsite reservations would be required in the wild or scenic sections, year-round. If an allocation system is implemented for motorized use in the scenic section based on monitoring, a campsite reservation system would be considered at that time.

RECREATION OPPORTUNITY SPECTRUM

Dam to Kirkwood. This section would be managed as primitive, year-round, pursuant to the Regional ROS guidelines. The Hells Canyon Creek Recreation Site would be managed pursuant to the ROS characteristics displayed in Table III-1.

The National Register buildings at Kirkwood Historic Ranch as historic structures. The interpretive facilities and displays at Kirkwood would be removed and not staffed.

Kirkwood to Pittsburg. This section would be managed as primitive, year-round, with the exception of the administrative sites which would be managed as semi-primitive, non-motorized, pursuant to the Regional ROS guidelines.

Scenic. This section would be managed as semi-primitive, motorized, year-round, pursuant to the ROS characteristics displayed in Table III-2.

NAVIGATION MARKERS

Markers would be removed from the wild river section in cooperation with the Corps of Engineers and would remain in the scenic section.

PICNIC TABLES

Picnic tables would be removed from the wild river section and would be available in the scenic section.

AIRCRAFT USE

Dam to Kirkwood. Big Bar and Sluice Creek landing strips would be closed to all aircraft except for emergency use. Private and commercial floatplane landings would be prohibited, year-round.

Kirkwood to Pittsburg. There are no landing strips located in this section.

Scenic. Cache Creek, Dug Bar, Pittsburg, and Salmon Bar landing strips would be open to private aircraft. When monitoring indicates use levels are impairing the ORV's, an allocation system would be implemented.

Prohibit private and commercial floatplane landings on the scenic section during the primary season.

GRAZING ALLOTMENT, PERMITTEE FACILITY, AND INHOLDING ACCESS

Dam to Kirkwood. There would be no motorized access allowed to Temperance Creek and Sheep Creek Allotments or the outfitter's facilities at Sheep Creek, year-round. Onshore motorized ranching operations would be permissible at the Temperance Creek Ranch headquarters, year-round.

Kirkwood to Pittsburg. Motorized access of one round-trip per day to the Kirby Creek inholding would be allowed through a special use permit pursuant to the Alaska National Interest Lands Conservation Act of 1980 and the "Powerboat Access to Private Inholdings Guidelines" in the analysis file. In cooperation with the U. S. Postal Service, mail would only be delivered to Pittsburg Landing. A mailbox would be allowed at Pittsburg Landing for the owner of the Kirby Creek inholding. The permitted Sheep Creek outfitter would be allowed to continue facility operations by catering to float, backpack, and horsepack parties.

Scenic. Motorized access of one round-trip per day to private inholding and grazing allotments would be be allowed through a special use permit pursuant to the Alaska National Interest Lands Conservation Act of 1980 and the "Powerboat Access to Private Inholdings Guidelines" in the analysis file.

STRUCTURES

The metal shed upstream of the Pittsburg Administrative site and the metal grain silos at the Kirkwood Historic Ranch would be dismantled and removed.

Any structures not on the historic register at Kirkwood Historic Site would be removed.

SPORTING EVENTS

No competitive sporting events would be allowed in the river corridor.

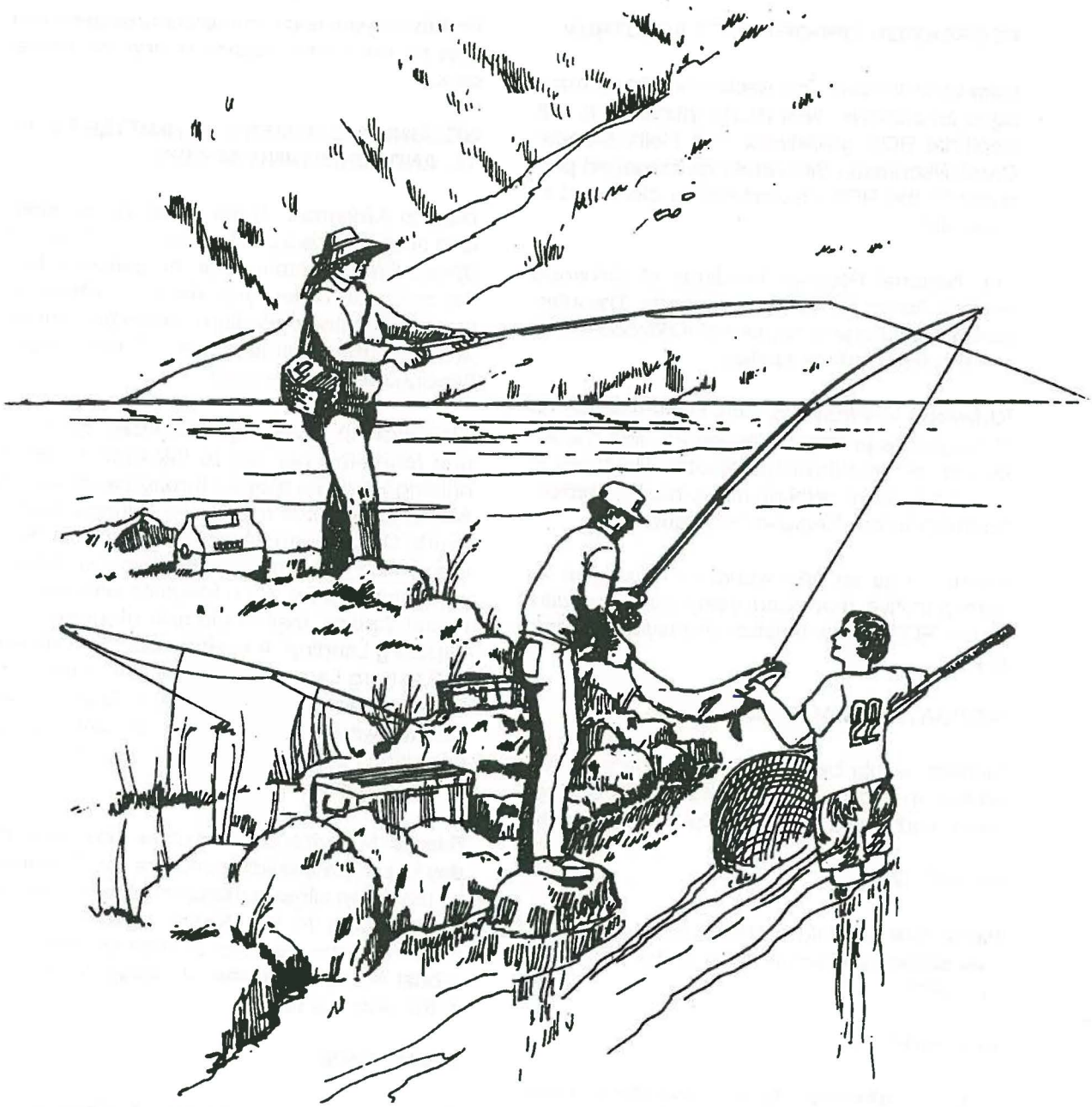
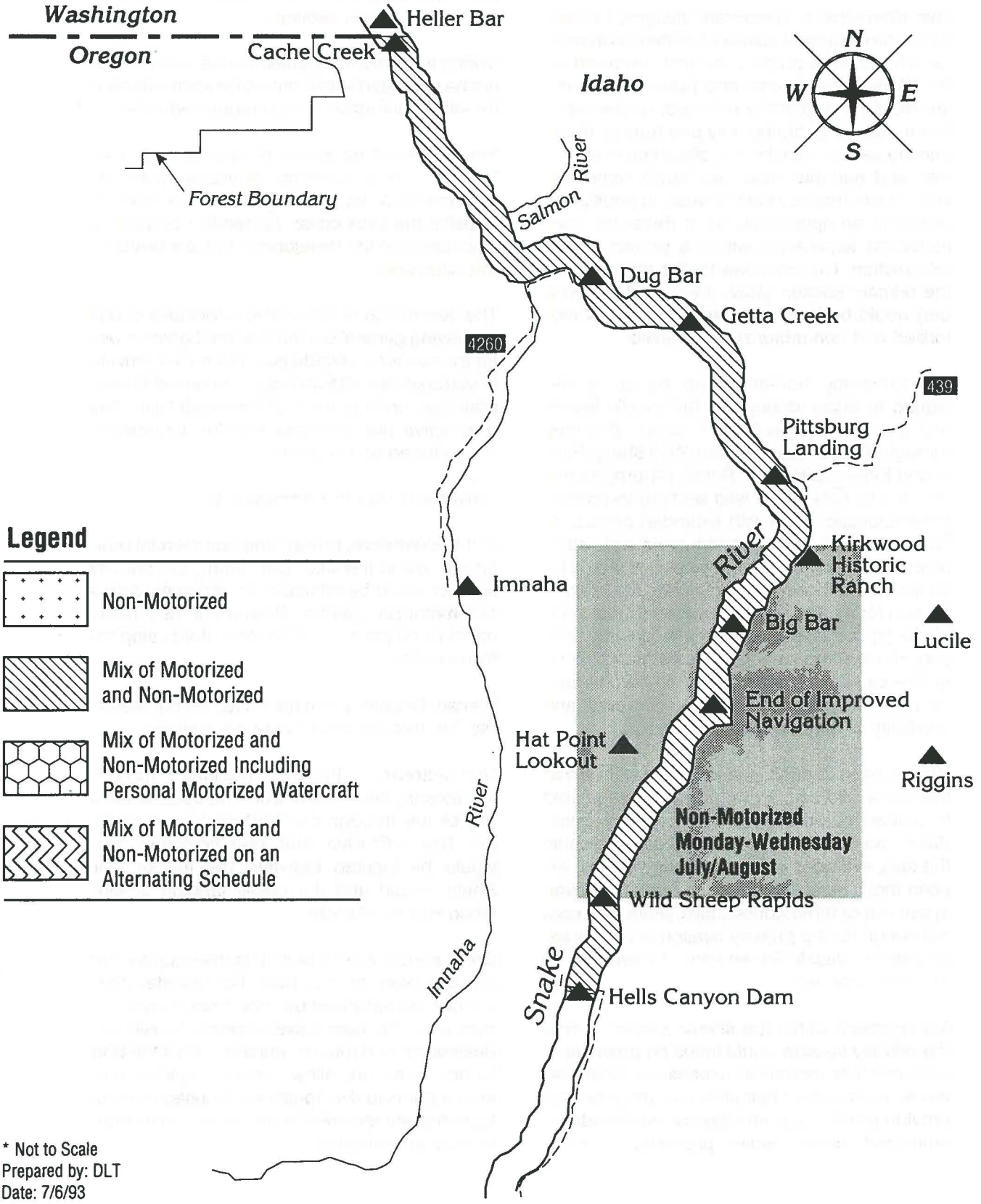


Figure II-7

Alternative G—Primary Season



* Not to Scale
Prepared by: DLT
Date: 7/6/93

ALTERNATIVE G - PREFERRED

This alternative is specifically designed to address the significant issues identified in Chapter I and the diverse public comments received on the DEIS. These issues and public comments are resolved or partially resolved, respectively, by emphasizing, during July and August of the primary season, a balanced allocation of motorized and non-motorized use levels within the wild section four days of the week, in addition to providing an opportunity for a three-day non-motorized experience within a portion of the wild section. The emphasis for the remainder of the primary season (May, June, and September) would be for a balanced allocation of motorized and non-motorized use levels.

The three-day non-motorized period is designed to occur during the historically lowest use periods for motorized users (Monday through Wednesday) between Wild Sheep Rapid and Kirkwood Historic Ranch (approximately 21 miles or 66% of the wild section) to provide non-motorized users with extended periods of remoteness by limiting encounters with other river users. The non-motorized period would be implemented for eight weeks during the primary season for a total of approximately 24 days annually (approximately 22% of the primary season). Annual monitoring of users' perceptions and recreation experiences would be conducted to determine the long-term durability and feasibility of the non-motorized period.

During the secondary season, use levels within the entire wild section would not be regulated for either motorized or non-motorized users. When monitoring on a weekly basis indicates the daily averages in the secondary season exceed those established for the primary season in two out of three consecutive years, the control period for the primary season would be expanded in weekly increments, a maximum of one week per year.

Management within the scenic section during the primary season would focus on providing a semi-primitive motorized experience. Daily use levels would reflect historical use patterns that provide greater opportunities on weekends for motorized users, while providing a more shared-use level on weekdays for those non-motorized trips that either continue into or initiate in the scenic section.

During the secondary season, use levels would not be regulated within the entire scenic section for either motorized or non-motorized users.

See Figure II-7 for a map of Alternative G. See Table II-1 for a summary of management requirements. A detailed map of the river corridor is inside the back cover. Appendix I provides a discussion on the development of use levels for this alternative.

The description of Alternative G includes charts displaying general powerboat and floatcraft use for the two time periods (see Figure II-8, Private Powerboat Use; Figure II-9, Commercial Powerboat Use; and Figure II-10, Floatcraft Use). The descriptive text provides detailed information not included on the charts.

Powerboat Use In Alternative G

In this alternative, private and commercial powerboat use in the wild river during the primary season would be allocated to accommodate a non-motorized period. Powerboat use (commercial and private) will be described using the following terms:

Primary Season: From the Friday before Memorial Day through September 10, inclusive.

Non-motorized Period: Monday through Wednesday each week from the second Monday of July through the Wednesday before Labor Day, inclusive (the non-motorized area would be located between the top of Wild Sheep Rapid and the upper landing at Kirkwood Historic Ranch).

Boat Launch: A boat launch is the equivalent of one trip taken by one boat. For one day commercial powerboat trips, one boat launch occurs when the boat leaves a portal, travels to a destination and returns, ending a trip. One boat launch does not allow running multiple trips from a portal to river locations. Consecutive day launches are required for overnight use by commercial powerboaters.

The following management direction would be added to the Forest Plan:

PRIVATE POWERBOAT USE

Dam to Kirkwood. During the primary season (excluding the non-motorized period), there would be a daily maximum of six private powerboat launches with destinations to any location between Hells Canyon Dam and Kirkwood Historic Ranch.

During the non-motorized period there would be a maximum of one private powerboat launch per day for day-use only issued at Hells Canyon Creek for use between Hells Canyon Dam and the top of Wild Sheep Rapid.

Kirkwood to Pittsburg. During the primary season, use in this section of the river would be included in the allocation listed for the Dam to Kirkwood section.

During the non-motorized period there would be five private powerboat launches per day for day-use only.

Entire Wild River. During the primary season (excluding the non-motorized period) there would be a maximum of six private powerboat launches per day that could travel and/or camp in any part of the wild river.

During the non-motorized period there would be a maximum of six private powerboat launches per day. All private powerboat use would be for day-use only and no boats could operate between the top of Wild Sheep Rapid and Kirkwood Historic Ranch.

Scenic. During the primary season there would be a maximum of 20 private powerboat launches per day on Friday through Sunday and 10 private powerboat launches per day on Monday through Thursday. All launches would be available for overnight or day-use from Cache Creek to Pittsburg Landing.

On Friday through Sunday, a maximum of five additional private powerboat launches would be available for day-use only from Cache Creek to the mouth of the Salmon River.

Wild and Scenic River. For the entire river corridor, private powerboats would be limited to 39.6 feet in overall length.

Private powerboat use would be managed with a launch reservation system.

In the secondary season, self-issued permits would be required and there would be no limitation on private powerboat use.

PERSONAL MOTORIZED WATERCRAFT USE

Personal motorized watercraft would be permanently excluded from the entire river corridor for personal, commercial, and administrative use.

COMMERCIAL POWERBOAT USE

Dam to Kirkwood. During the primary season (except during the non-motorized period) there would be a maximum of six boat launches per day that could travel to several locations between the Dam and Kirkwood, dependent upon each outfitter's limitations on permitted area of operations and maximum number of daily boat launches.

Two of the six daily boat launches would be allocated to two commercial powerboat permits operating from Hells Canyon Creek, with one daily boat launch allocated to each permit. One of these permits would be allocated a maximum of one boat launch per day that could leave from Hells Canyon Creek and travel downstream to Pittsburg Landing and return. The other permit would be allocated one boat launch per day to the top of Wild Sheep Rapid. A maximum of one additional boat launch per permit could be obtained from a common commercial powerboat pool of vacant launches, but any launches obtained using this method would only allow use to the top of Wild Sheep Rapid.

From all other river access points during the primary season, a maximum of four of the six daily boat launches would be available and allocated to outfitters on the basis of historic use.

During the non-motorized period, no commercial powerboat operation would be permitted between the top of Wild Sheep Rapid and the upper landing at Kirkwood Historic Ranch. The two commercial powerboat permits at Hells Canyon Creek would be permitted to run a maximum of one trip per permit per day between the dam and the top of Wild Sheep Rapid.

Kirkwood to Pittsburg. During the primary season (except during the non-motorized period) five of six launches into this section of the river would be included in the allocation for the dam to Kirkwood section. There would also be one launch per day from Pittsburg to Kirkwood for day-use only, allowing a maximum of six boats per day into this section of the river.

During the non-motorized period, a maximum of four commercial powerboats would be allowed in this section of river for day-use only. These would be included in the scenic river allocation. The one launch per day from Pittsburg to Kirkwood would not be allowed during the non-motorized period.

Entire Wild River. When combining total daily launches allowed to operate in the wild river during the primary season (excluding the non-motorized period), there would be a maximum of seven commercial boats allowed per day in the wild river, with five of the seven allowed to operate within the entire wild river corridor (dependent upon permitted area of operation), and two restricted to operating from portals on opposite ends of the wild river corridor (Pittsburg to Kirkwood and Hells Canyon Creek to the top of Wild Sheep Rapid). There would be a maximum of five commercial boats operating between Kirkwood and Wild Sheep Rapid.

During the non-motorized period, a maximum of four commercial powerboats per day would be allowed between Pittsburg and Kirkwood. When combined with the two launches per day from the dam to the top of Wild Sheep Rapid, this would allow a maximum of six boat launches per day into the wild river, while managing approximately two-thirds of the wild river for a non-motorized experience. During the non-motorized period, all trips into the motorized sections of the wild river would be for day-use only.

Scenic. During the primary season there would be a maximum of six trips per day. Two of these six launches would be limited to operating in the scenic river between Cache Creek and Pittsburg Landing. The remaining four launches would also be allowed access to the wild river.

The single, temporary use commercial powerboat permit issued for use in the scenic river only would not be reissued upon expiration at the end of 1994.

Wild and Scenic River. For the entire river corridor, any new commercial powerboats would be limited to 39.6 feet in overall length. Existing boats exceeding this length limit would be allowed to continue operating on the river, but only for commercial use.

Commercial operators would be allowed to run jetbacks or jetouts for commercial or private float parties within their allocation of launches. Transporting floatcraft by commercial jetboat for the purpose of launching a float trip would be prohibited.

During the primary season, overnight use by commercial outfitters would require consecutive day launch allocations for those outfitters permitted to conduct overnight trips. Outfitters using river campsites would be limited to trip lengths of two days and one night during the primary season.

Commercial powerboat use would be managed with a launch reservation system that would allow outfitters to exchange dates with other permitted outfitters or obtain vacant launch dates by use of a common commercial powerboat launch pool.

In the secondary season, self-issued permits would be required and there would be no limitation on commercial powerboat use.

Reference Appendix G for more complete operating guidelines for outfitters and guides, including specifics about number and location of permitted launches.

PRIVATE FLOATCRAFT USE

Dam to Kirkwood. During the primary season, there would be three launches per day. In the secondary season, self-issued permits would be required and there would be no daily launch limitation on private floatcraft use.

Kirkwood to Pittsburg. Included in the allocation for the above section.

Scenic. During the primary season, there would be one launch per day on Friday through Sunday from both Pittsburg Landing and Dug Bar. An average of one launch per day would be allowed on Monday through Thursday from both Pittsburg Landing and Dug Bar. In the secondary season, self-issued permits would be required and there would be no daily launch limitation on private floatcraft use.

COMMERCIAL FLOATCRAFT USE

Dam to Kirkwood. During the primary season, there would be two launches per day. Float permittees would be allowed to utilize a multi-day launch date for the purpose of a one-day float, providing the permittee can secure jetbacks or jetouts from the existing daily allocation of commercial motorized use. One-day floats are not permitted during the three-day, non-motorized periods.

The two temporary use one-day float permits at the Hells Canyon Launch Site would not be reissued upon expiration at the end of 1994. All float permits would authorize operation of multi-day float trips.

In the secondary season, self-issued permits would be required and there would be no daily launch limitation on commercial floatcraft use.

Kirkwood to Pittsburg. Included in the allocation for the above section.

Scenic. During the primary season, there would be no commercial launches from Pittsburg or Dug Bar. Commercial trips within the scenic river would be a continuation of trips that originated at Hells Canyon Creek or from the Salmon River.

In the secondary season, self-issued permits would be required and there would be no daily launch limitation on commercial floatcraft use.

Reference Appendix G for more complete operating guidelines for outfitters and guides, including specifics about number and location of permitted launches.

LAUNCH RESERVATIONS

Wild. Launch reservations would be required for all river users during the primary season.

Scenic. Launch reservations would be required for all river users on Friday through Sunday during the primary season. Monday through Thursday launch reservations would not be required for motorized or non-motorized trips until monitoring indicates that daily caps are being utilized and the daily cap has the potential of being exceeded more than 50% of the days during the season. Launch reservations would be required for all national holidays which fell on Monday through Thursday during the primary season.

NUMBER OF FLOATCRAFT

Commercial and private float parties would be limited to a maximum of eight floatcraft per party in all river sections, year-round.

PARTY SIZE

Party size for day and overnight use for all river users (with the exception of commercial powerboat day-use) would be limited to a maximum of 24 people per party in all river sections, year-round.

Party size for backpackers would be limited to a maximum of 24 people per party in all river sections, year-round. For horsepackers, a maximum of 16 people per party and 16 stock per party would be permitted in the wild section and a maximum of 24 people and 24 stock per party would be permitted in the scenic section.

STAY LENGTHS

Wild. During the primary season, stay lengths of three days and two nights per campsite would be permitted within 1/4 mile of high watermark. Shorter stay lengths would be implemented at individual campsites if monitoring indicates a need to manage campsite competition. Trip lengths would be monitored to assure adequate turnover of campsites.

During the secondary season, stay lengths of 14 days and 13 nights per campsite would be permitted within 1/4 mile of high watermark. Shorter stay lengths would be implemented at individual campsites if monitoring indicates a need to manage campsite competition.

Scenic. During the primary season, stay lengths of four days and three nights per campsite would be permitted within 1/4 mile of high watermark. Shorter stay lengths would be implemented at individual campsites if monitoring indicates a need to manage campsite competition.

During the secondary season, stay lengths of 14 days and 13 nights per campsite would be permitted within 1/4 mile of high watermark. Shorter stay lengths would be implemented at individual campsites if monitoring indicates a need to manage campsite competition.

DROP CAMPS

During the primary season, no commercial or private drop camps would be permitted for either river or upland users for the entire river corridor.

During the secondary season, drop camps would be permitted. Self-issued permits would be required in addition to the appropriate stay lengths discussed above.

BACKPACKERS AND HORSEPACKERS

Self-issued permits would be required at the following major access points: Freeze Out, Hat Point, Warnock Corral, Imnaha, Dug Bar, PO Saddle, Pittsburg Recreation Site, and Windy Saddle.

Packstock within the river corridor would be managed with established low impact wilderness standards, year-round.

Backpackers and hikers transported to trailheads from Hells Canyon Creek by powerboat would be required to obtain a self-issued permit prior to launch.

CAMPSITE RESERVATIONS

If monitoring indicates a need to resolve conflicts resulting from campsite competition and additional mitigation does not adequately resolve the conflict, a campsite reservation system would be implemented for the wild and/or scenic river.

RECREATION OPPORTUNITY SPECTRUM

The river corridor would be managed pursuant to the ROS characteristics displayed in Tables III-1 and III-2.

NAVIGATION MARKERS

Wild. Navigation markers would be removed upstream from Kirkwood Historic Ranch.

Scenic. Navigation markers would remain in place.

PICNIC TABLES

Wild. Picnic tables would be removed except at Sheep Creek and Kirkwood Historic Ranch.

Scenic. Picnic tables would remain in place.

AIRCRAFT USE

Wild. Big Bar landing strip would remain open, year-round, for private aircraft use. When monitoring of aircraft use levels indicates ORV's are being impaired, an allocation system would be

implemented. Sluice Creek would remain closed during the primary season and opened during the secondary season to private aircraft only. During the primary season, Sluice Creek would be available for emergency use related to fire suppression and rescue efforts. When monitoring of aircraft use levels indicates ORV's are being impaired, an allocation system would be implemented.

Scenic. Cache Creek, Dug Bar, Pittsburg, and Salmon Bar landing strips would be open, year-round, to private aircraft use. When monitoring of aircraft use levels indicates ORV's are being impaired, an allocation system would be implemented.

Floatplane landings would be prohibited on the entire river corridor, year-round.

Except for aircraft landings at Big Bar in support of the grazing operations at the Temperance Creek Ranch, incidental commercial aircraft use of airstrips within the river corridor would be allowed with the following guidelines:

- Incidental use permits would be issued to those commercial aviators who can demonstrate previous commercial use of the airstrips through the period of 1988 through 1992.

- Incidental use levels would be calculated based on an average of demonstrated use through the period of 1988 through 1992.

- Use must be demonstrated through the pilots' logs. Failure to adequately demonstrate use would result in non-issuance of an incidental use permit.

- Incidental use permits would specifically define which airstrips are permitted for such use with an emphasis on secondary season use, resulting in limited incidental use permitted in the primary season. Since the Sluice Creek and Cache Creek airstrips have been closed to public access, these airstrips would not be available for commerical aircraft use.

With the exception of administrative and emergency use, all other commercial aircraft landings and/or operations at airstrips would be prohibited, year-round.

GRAZING ALLOTMENT, PERMITTEE FACILITY, AND PRIVATE INHOLDING ACCESS

Dam to Kirkwood. The Temperance Creek allotment would be allocated one round trip per day during the primary season from Pittsburg Landing to Temperance Creek and unlimited use during the secondary season. For conformance during the Monday through Wednesday non-motorized period in July and August, there would be no motorized use except for emergency use approved by the Area Ranger. River crossings by powerboat between the ranch headquarters and Big Bar airstrip for necessary, ongoing commercial grazing operations at the Temperance Creek Ranch would not be regulated.

Use would be prohibited during the primary season for the Sheep Creek allotment and unregulated during the secondary season.

Access to Sheep Creek Ranch (Historic Site) during the primary season would be included in the commercial allocation for the permittee who is authorized to use and maintain the facility. For conformance during the Monday through Wednesday non-motorized period in July and August, there would be no motorized use except for emergency use approved by the Area Ranger. Use would be unregulated during the secondary season.

Kirkwood to Pittsburg. Kirby Creek would be allowed one round trip per day during the primary season from Pittsburg Landing or Cache Creek to the Kirby Creek inholding pursuant to the ANILCA and the guidelines for powerboat access to inholdings located in the analysis file. The lower Salmon River inholdings pursuant to the Alaska National Interest Lands Conservation Act and guideline for powerboat access to inholdings located in the analysis file. Use would be unregulated during the secondary season.

Scenic. For the primary season, motorized access to the outfitters facilities at Copper Creek would be included in the daily allocation of commercial powerboat use. Use would be unregulated during the secondary season.

Allow one round trip per day through special use permits to allotments and private inholdings during the primary season, if they have historically been accessed by river. Use would be unregulated during the secondary season.

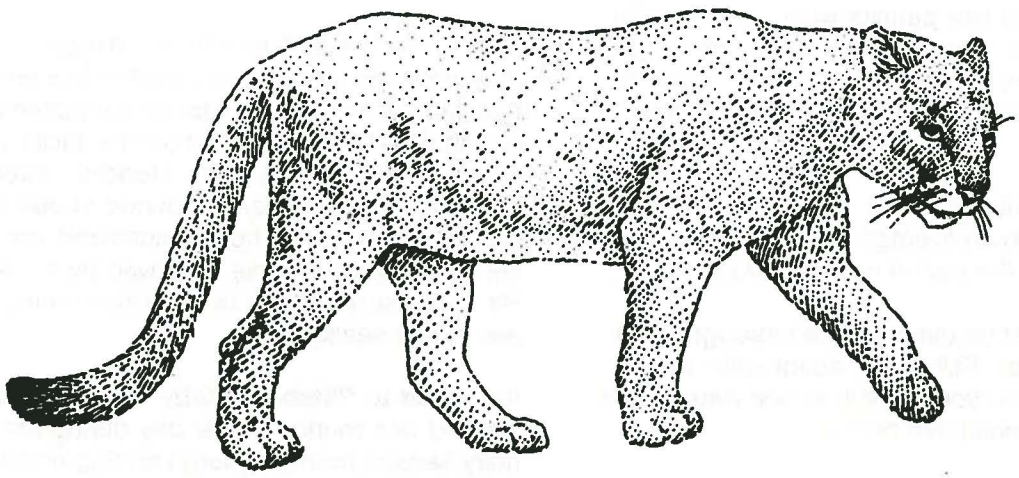
For the primary season, allow one round trip per day through special use permits to Lower Salmon River inholdings pursuant to the ANILCA and the guidelines for powerboat access to inholdings located in the analysis file. Use would be unregulated during the secondary season.

STRUCTURES

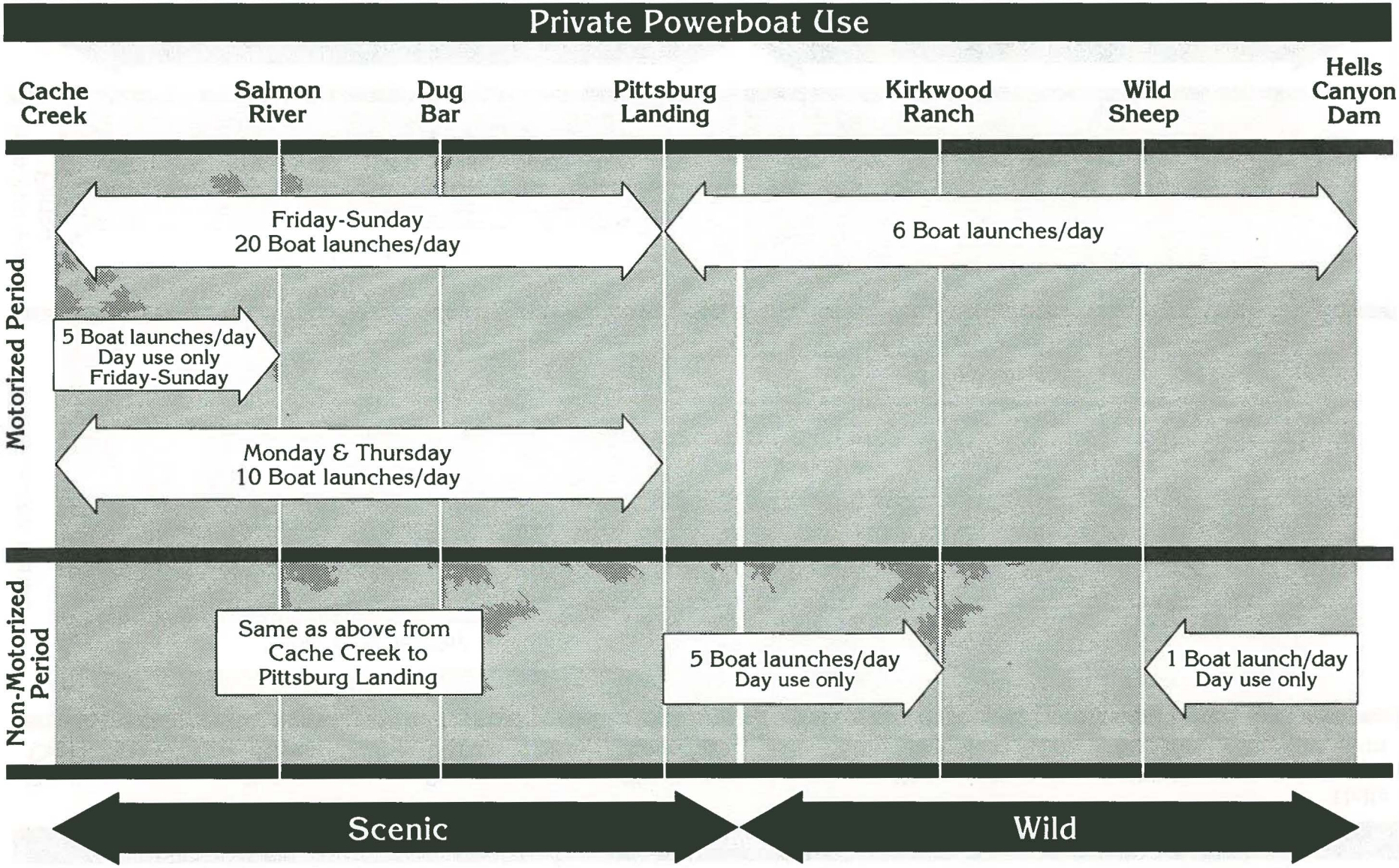
The metal shed upstream from the Pittsburg administrative site and the metal grain silos at the Kirkwood Historic Ranch would be dismantled and removed.

SPORTING EVENTS

No competitive sporting events would be allowed in the river corridor, year-round.

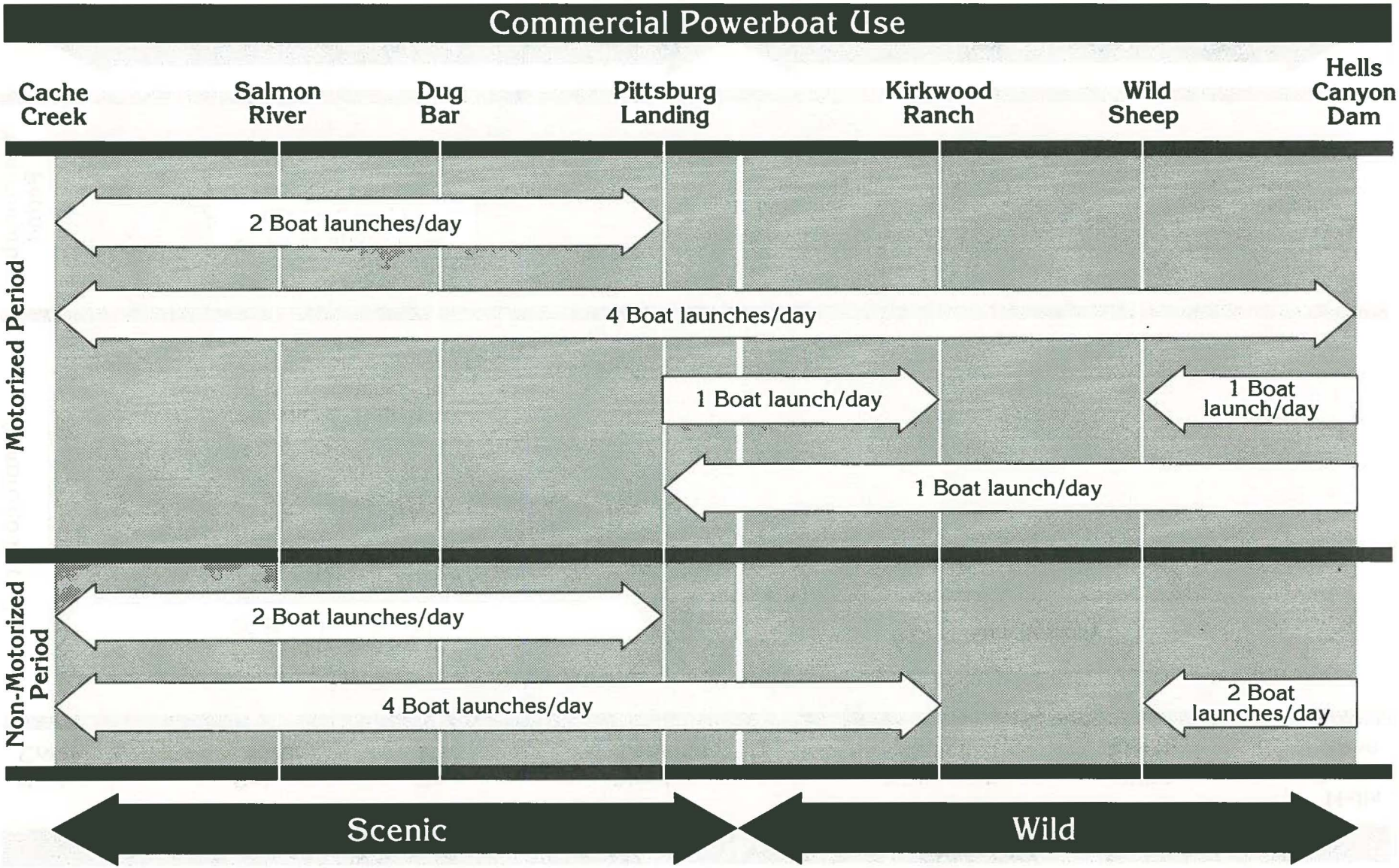


Alternative G—Primary Season



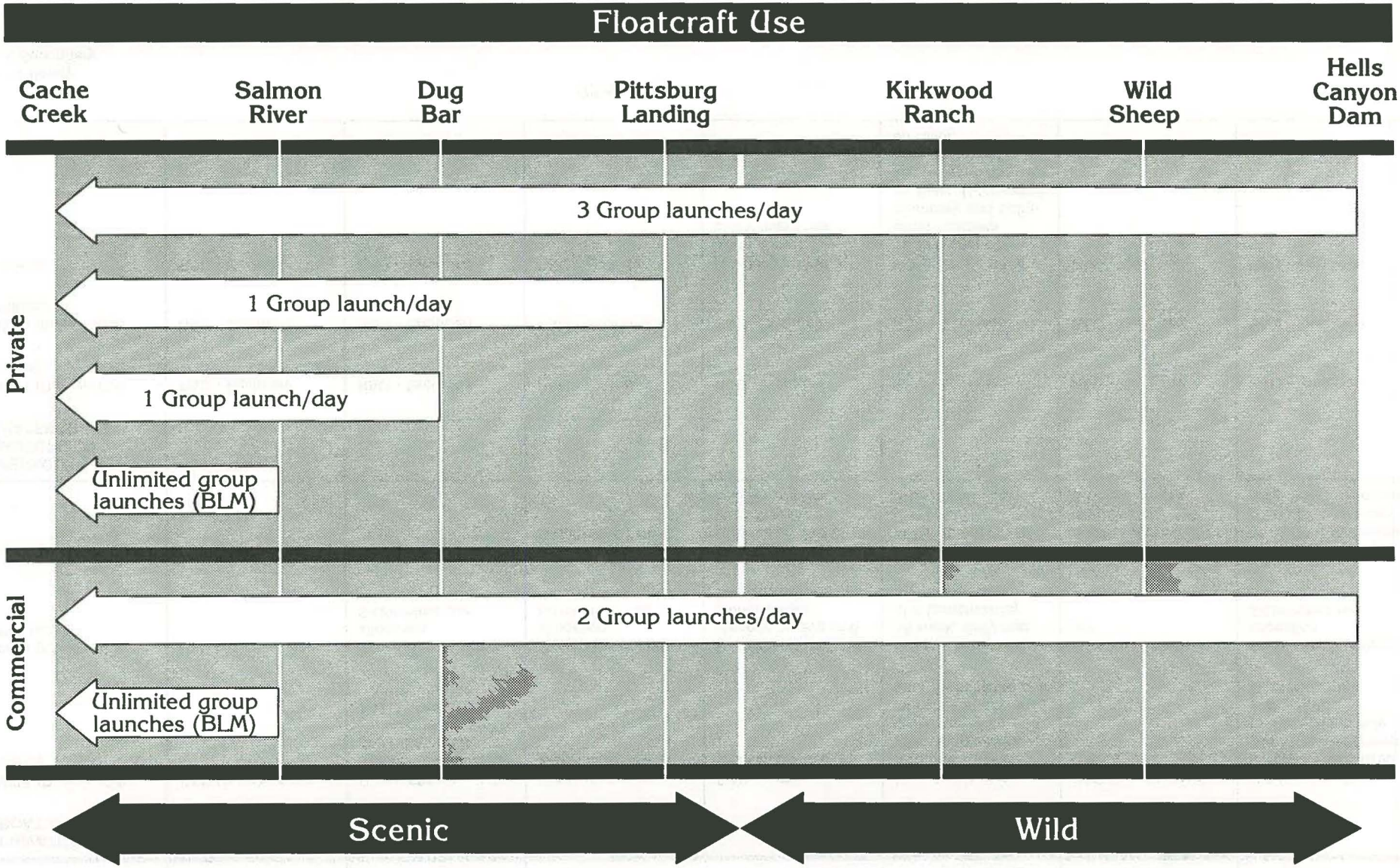
Note: Alternative G has a non-motorized period on a portion of the wild river. The period is Monday through Wednesday from the second Monday in July through the Wednesday before Labor Day weekend.

Alternative G—Primary Season



Note: Alternative G has a non-motorized period on a portion of the wild river. The period is Monday through Wednesday from the second Monday in July through the Wednesday before Labor Day weekend.

Alternative G—Primary Season



Note: Alternative G has a non-motorized period on a portion of the wild river. The period is Monday through Wednesday from the second Monday in July through the Wednesday before Labor Day weekend.

Table II-1 -- Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
PRIVATE POWER-BOAT USE							
Wild (Dam to Kirkwood)	P&S-Unlimited use	P-max 635 permits/ season 16 launches/ day F/Sa and 8 launches/days Su-Th S-Unlimited use	P-4 launches/day S-Unlimited use	P-No motorized use S-Unlimited use	P-Exclusive motorized use Th-W on alternating weeks. Daily max of 24 launches at any one time. S-Unlimited use	P&S-No motorized use.	P-6 launches/day except no motorized use M-W Wild Sheep to Kirkwood in July and August S-Unlimited use
Wild (Kirkwood to Pittsburg)	P&S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Unlimited until use reaches an avg of 6 launches/day S-Unlimited use	P-Same except for alt off week, daily max of 8 launches/day S-Unlimited use	P&S-No motorized use	P-Included in above allocation S-Unlimited use
Scenic	P&S-Unlimited use	P&S-Unlimited use	P-5 launches/day S-Unlimited use	P-Unlimited until use reaches an avg of 13 launches/day S-Unlimited use	P-10 launches/day M-Th. 20 launches/ day F-Su. S-Unlimited use	P-Unlimited until use reaches an avg of 13 launches/day S-Unlimited use	P-10 launches/day M-Th, 20 launches/day F-Su plus 5 day-use only. S-Unlimited use
PERSONAL MOTORIZED WATERCRAFT							
Wild (Dam to Kirkwood)	R&U - Excluded	R&U - Excluded	R&U - Excluded	R&U -Excluded	R&U - Excluded	R&U - Excluded	R&U - Excluded
Wild (Kirkwood to Pittsburg)	R&U - Excluded	R&U - Excluded	R&U - Excluded	R&U -Excluded	R&U - Excluded	R&U - Excluded	R&U - Excluded
Scenic	R&U - Excluded	R&U - Excluded	R&U - Excluded	R-1 daily permit of up to 4 craft. U-Unlimited use	R-1 daily permit of up to 4 craft between northern boundary and Salmon River. U-Unlimited use between northern boundary and Salmon River.	R&U - Excluded	R&U - Excluded

P = Primary
S = Secondary

Table II-1 -- Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
COMMERCIAL POWERBOAT USE							
Wild (Dam to Kirkwood)	P&S-Unlimited use	P-max 1368 launch-days/season avg 12 launches/day S-Unlimited use	P-Daily max 4 launches S-Unlimited use	P-No motorized use S-Unlimited use	P-Exclusive motorized use Th-W on alternating weeks. Daily max of 12 launches (max of 6 for overnight trips) S-Unlimited use	P&S-No motorized use.	P-7 launches/day except no motorized use M-W Wild Sheep to Kirkwood in July and August S-Unlimited use
Wild (Kirkwood to Pittsburg)	P&S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Daily max 6 launches S-Unlimited use	Same except for alt off week allow daily max 4 launches/day S-Unlimited use	P&S-No motorized use	P-Included in above allocation S-Unlimited use
Scenic	P&S-Unlimited use	P&S-Unlimited use	P-Daily max 5 launches S-Unlimited use	P-Unlimited until use averages 8 launches/day S-Unlimited use	P-included in wild allocation for alt on week. Alt. off week allow 8 launches/day S-Unlimited use	P-Unlimited until use averages 9 launches/day S-Unlimited use	P-6 launches/day No overnight except at Copper Creek S-Unlimited use
PRIVATE FLOAT-CRAFT USE							
Wild (Dam to Kirkwood)	P-3 launches/day S-Unlimited use	P-348 launches/season with max 3 launches/day S-Unlimited use	P-3 launches/day S-Unlimited use	P-3 launches/day S-Unlimited use	P-Exclusive non-motorized use Th-W on alternating weeks. Max 4 launches/day S-Unlimited use	P-Max 100 users/day, comm and pvt S-Unlimited use	P-3 launches/day S-Unlimited use
Wild (Kirkwood to Pittsburg)	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use
Scenic	P&S-Unlimited use	P&S-Unlimited use	P-Average 1 launch/day, comm or pvt, from Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use	P-No launches at Pittsburg or Dug Bar S-Unlimited use	P-Average 1 launch/day, comm or pvt, from Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use	P-No launches at Pittsburg or Dug Bar S-Unlimited use	P-Average 1 launch/day, comm or pvt, from Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use

P = Primary
S = Secondary

Table II-1 -- Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
COMMERCIAL FLOATCRAFT USE							
Wild (Dam to Kirkwood)	P-2 launches/day, 1 one-day trip M-F S-Unlimited use	P-232 launches/ season with max 2 launches/day; 2 one-day trips included in seasonal launch max) S-Unlimited use	P-2 launches/day one-day trips would be included in multi-day allocations S-Unlimited use	P-2 launches/day and no one-day permits S-Unlimited use	P-Exclusive non-motorized use Th-W on alternating weeks with limit of 3 launches/day S-Unlimited one-day trips w/jetbacks	P-Max 100 users/day, comm and pvt S-Unlimited use	P-2 launches/day one-day trips would be included in multi-day allocations S-Unlimited use
Wild (Kirkwood to Pittsburg)	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use	P-Included in above allocation S-Unlimited use
Scenic	P&S-Unlimited use	P&S-Unlimited use	P-Allow average of 1 launch/day, comm or pvt, Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use	P-No launches from Pittsburg or Dug Bar S-Unlimited use	P-Allow average of 1 launch/day, comm or pvt, Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use	P-No launches from Pittsburg or Dug Bar S-Unlimited use	P-Allow average of 1 launch/day, comm or pvt, Pittsburg or Dug Bar. When average reaches 1 launch/day, implement daily limit S-Unlimited use
LAUNCH RESERVATIONS							
Wild (Dam to Kirkwood)	P-Required for floatcraft only S-Not required	P-Required for floatcraft only S-Not required	P-Required for all river users S-Not required	P-Required for floatcraft S-Not required	P-Required for all river users S-Not required	P-Required for floatcraft S-Not required	P-Required for all river users S-Not required
Wild (Kirkwood to Pittsburg)	P-Required for floatcraft only S-Not required	P-Required for floatcraft only S-Not required	P-Required for all river users S-Not required	P-Required for floatcraft S-Not required	P-Required for all river users S-Not required	P-Required for floatcraft S-Not required	P-Required for all river users S-Not required
Scenic	P&S-Not required	P&S-Not required	P-Required for all river users S-Not required	P&S-Not required	P-Not required exc F-Su for powerboats S-Not required	P&S-Not required	P-Required for all river users S-Not required

P = Primary
S = Secondary

Table II-1 -- Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
NAVIGATION MARKERS							
Wild (Dam to Kirkwood)	In	Out	In	Out	Out	Out	Out
Wild (Kirkwood to Pittsburg)	In	Out	In	Out	In	Out	In
Scenic	In	In	In	In	In	In	In
PICNIC TABLES							
Wild (Dam to Kirkwood)	In	In	Out except at Kirkwood	Out except at Kirkwood	Out except at Kirkwood	Out	Out except at Kirkwood
Wild (Kirkwood to Pittsburg)	In	In	Out except at Kirkwood	Out except at Kirkwood	Out except at Kirkwood	Out	Out except at Kirkwood
Scenic	In	In	In	In	In	In	In
AIRCRAFT USE							
Wild (Dam to Kirkwood)	Big Bar open, Sluice Creek closed	Big Bar and Sluice Creek open	Big Bar and Sluice Creek open	P-Big Bar and Sluice Creek would be closed except for emergencies S-Open	P-Big Bar and Sluice Creek open on motorized weeks and closed except for emergencies on non-motorized weeks S-Open	Big Bar and Sluice Creek would be closed except for emergencies	Big Bar open to private aircraft year-round. Sluice Creek would be closed primary season only
Wild (Kirkwood to Pittsburg)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scenic	Cache Creek closed; Dug Bar, Pittsburg, and Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open	Cache Creek, Dug Bar, Pittsburg, Salmon Bar open

P = Primary
S = Secondary

Table II-1 -- Summary of Alternative Management Requirements

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G
CAMPSITE STAY LENGTH							
Wild (Dam to Kirkwood)	P-5 nights except 1 night at Saddle and Granite S-14 nights	P-2 nights S-6 nights	P-5 nights S-7 nights	P-2 nights S-7 nights	P-2 nights for float parties, 4 nights for powerboat parties S-7 nights all users	P-2 nights S-7 nights	P-2 nights S-7 nights
Wild (Kirkwood to Pittsburg)	P-5 nights S-14 nights	P-2 nights S-6 nights	P-5 nights S-7 nights	P-2 nights S-7 nights	P-2 nights for float parties, 4 nights for powerboat parties S-7 nights all users	P-2 nights S-7 nights	P-2 nights S-7 nights
Scenic	P-5 nights S-14 nights	P-4 nights S-6 nights	P-5 nights S-7 nights	P-5 nights S-7 nights	P-5 nights S-7 nights	P-5 nights S-7 nights	P-3 nights S-14 nights
DROP CAMP USERS							
Wild (Dam to Kirkwood)	P&S-Self-issued permits required	P-Campground reservations required S-Self-issued permits required	P-Campground reservations required S-Self-issued permits required	P&S-No drop camps allowed	P-Campground reservations required float only. No drops allowed on non-motorized weeks S-Self-issued permits required	P&S-No drop camps allowed	P-No drop camps allowed S-Self-issued permits required
Wild (Kirkwood to Pittsburg)	P&S-Self-issued permits required	P-Campground reservations required S-Self-issued permits required	P-Campground reservations required S-Self-issued permits required	P&S-No drop camps allowed	P-not required S-Self-issued permits required	P&S-No drop camps allowed	P-No drop camps allowed Self-issued permits required
Scenic	P&S-Self-issued permits required	P&S-Self-issued permits required	P&S-Self-issued permits required	P&S-Self-issued permits required	P&S-Self-issued permits required	P&S-Self-issued permits required	P-No drop camps allowed S-Self-issued permits required
CAMPSITE RESERVATIONS							
Wild (Dam to Kirkwood)	P-Management option	P-Required	P-Required	P&S-Not required	P-Required for floatcraft S-Not required	P&S-Not required	P&S-Not required
Wild (Kirkwood to Pittsburg)	P-Management option	P-Required	P-Required	P&S-Not required	P&S-Not required	P&S-Not required	P&S-Not required
Scenic	P-Management option	P&S-Not required	P&S-Not required	P&S-Not required	P&S-Not required	P&S-Not required	P&S-Not required

P = Primary
S = Secondary

COMPARISON OF THE ALTERNATIVES

This section of Chapter II contains a narrative and graphic comparison of the alternatives. Tabular and written comparisons of the environmental, social, and economic effects of implementing each alternative are presented.

ISSUE: Recreation use allocation should be consistent with the protection and enhancement of threatened and endangered salmon fisheries and habitat in the river corridor.

KEY INDICATORS:

- Potential for species to be inadvertently hooked by anglers.
- Potential for boat disturbance on migration/spawning behavior.
- Potential for boat disturbance to eggs/embryo in redds.
- Potential for species to be disturbed while in tributary streams.

Reference Table II-2 for a summary of the issue's key indicators by alternative.

SUMMARY: In all of the alternatives, there is a no to low potential for a species to be inadvertently hooked by anglers.

During the primary season, in all of the alternatives, there is a no to low potential for boat disturbance on migration/spawning behavior of the analyzed fish species. During the secondary season, the potential for boat disturbance on migration/spawning behavior ranges from no potential to a low potential dependent on the proposed recreation use levels and fish species.

There is no potential for boat disturbance to eggs/embryos in redds for spring/summer chinook and sockeye salmon in any of the alternatives. There is no potential for boat disturbance on fall chinook eggs/embryos in redds during the primary season in all of the alternatives. During the secondary season the potential is moderate in all alternatives.

In the wild section there is no potential for fall chinook in tributary streams to be disturbed by recreation users, year-round, although there is a low potential for disturbance by recreation users in the scenic section during the secondary season. The potential for disturbance to spring/summer chinook salmon is estimated to be low for both the wild and scenic sections, year-round. There is no potential for disturbance to sockeye salmon in tributary streams by recreation users in either the wild or scenic sections, year-round.



Table II-2
SUMMARY OF EFFECTS OF ALTERNATIVES ON SALMON SPECIES FOR PRIMARY AND SECONDARY SEASONS

Wild River Section													
		Fall Chinook				Spr/Sum Chinook				Sockeye			
Alter.		1	2	3	4	1	2	3	4	1	2	3	4
A	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
B	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
C	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
D	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
E	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
F	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
G	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N

Scenic River Section													
		Fall Chinook				Spr/Sum Chinook				Sockeye			
Alter.		1	2	3	4	1	2	3	4	1	2	3	4
A	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
B	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
C	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
D	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
E	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
F	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
G	R	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N

Alter. = Alternative **P** = Primary season **S** = Secondary season

KEY INDICATORS USED TO EVALUATE EFFECTS TO SPECIES

1 = Potential for species to be inadvertently hooked by angler.
2 = Potential for boat disturbance on migration/spawning behavior.
3 = Potential for boat disturbance to eggs/embryo in redds.
4 = Potential for species to be disturbed while in tributary stream.

RISK ASSESSMENT (Consequences of Adverse Effect From a Particular Activity.)

N = **No** potential effect anticipated to species.
L = **Low** potential for effect anticipated to species. None or questionable adverse effect on habitat or population. No cumulative effects expected.
M = **Moderate** potential for effect anticipated to species.Possible adverse effects in habitat or on population. Cumulative effects possible.
H = **High** potential for effect anticipated to species.
Obvious adverse effects on habitat or population.
Cumulative effects probable.

NOTE: Risk Assessment definitions for "low, moderate, and high" taken from FSM 2672.24b - 2676.173, page 6 of 7.

ISSUE: Regulation of recreation use could affect the socio-economic condition of current and future river users, recreation-related businesses, and related community and regional infrastructures.

KEY INDICATORS:

- Commercial permittee revenue.
- Associated expenditures by recreationists.

Table II-3

Annual Commercial and Private Powerboat Revenue and Expenditure Impacts, by Alternative[1] (Thousands $)

	A	B	C	D	E	F	G
Commercial Powerboat:							
Permittee Revenue							
No Flex	1,040	1,040	564	624	816	624	899
Max Flex	1,040	1,040	708	832	914	727	951
Recreation Expenditures							
No Flex	1,765	1,765	940	1,021	1,332	1,021	1,537
Max Flex	1,765	1,765	1,144	1,390	1,491	1,205	1,623
Total: No Flex	**$2,805**	**$2,805**	**$1,904**	**$1,645**	**$2,149**	**$1,644**	**$2,436**
Total: Max Flex	**$2,805**	**$2,805**	**$1,852**	**$2,222**	**$2,404**	**$1,932**	**$2,574**
Private Powerboat:							
Recreation Expenditures							
No Flex	938	938	444	799	870	799	901
Max Flex	938	938	444	871	904	836	916
Boating Expenditures							
No Flex	236	236	112	201	219	176	227
Max Flex	236	236	112	220	228	211	231
Total: No Flex	**$1,175**	**$1,175**	**$556**	**$1,000**	**$1,089**	**$975**	**$1,128**
Total: Max Flex	**$1,175**	**$1,175**	**$556**	**$1,091**	**$1,132**	**$1,047**	**$1,147**

[1] Based on 1991 use data.

SUMMARY: Commercial permittee revenue for Alternatives A and B would remain the same under the no flex scenario. Alternatives B and G have a similarly moderate impact on commercial permittee revenue under the no flex scenario based on their respective use allocations. Alternatives C, D, and F have significant effects on commercial permittee revenue under the no flex scenario based on their respective non-motorized allocations in the wild section.

Associated expenditures by private motorized recreationists remains the same for Alternatives A and B under the no flex scenario. Alternative E shows a $86,000 reduction from Alternative A under the no flex scenario based on the alternating week of exclusive use in the Dam to Pittsburg segment of the wild section. Alternative C shows a $619,000 reduction in associated expenditures from Alternative A under the no flex scenario based on moderate use allocations in both the wild and scenic sections. Alternative D shows a $175,000 reduction in associated expenditures from Alternative A under the no flex scenario based on the non-motorized use allocation in the Dam to Pittsburg segment of the wild section during the primary season. Alternative F shows a $200,000 reduction in associated expenditures for private powerboaters from Alternative A under the no flex scenario based on the non-motorized use allocation in the entire wild section, year-long. Alternative G shows a $47,000 reduction from Alternative A under the no flex scenario.

Table II-4

Annual Primary Season Commercial and Private Floatboat Total Revenue and Expenditure Impacts, by Alternative[1] (Thousands $)							
	A	B	C	D	E	F	G
Commercial Float							
Permittee Revenue							
No Flex	708	708	708	691	349	691	691
Max Flex	708	708	708	699	616	699	699
Recreation Expenditures							
No Flex	428	428	428	394	214	394	394
Max Flex	428	428	428	411	373	411	411
Total: No Flex	**$1,136**	**$1,136**	**$1,136**	**$1,085**	**$563**	**$1,085**	**$1,085**
Total: Max Flex	**$1,136**	**$1,136**	**$1,136**	**$1,110**	**$989**	**$1,110**	**$1,110**
Private Float							
Recreation Expenditures							
No Flex	631	631	631	602	329	602	631
Max Flex	631	631	631	631	432	631	631

[1] Based on 1991 use data.

Table II-4. Summary of Commercial and Private Floatboat Total Revenue and Expenditure Impacts, by Alternative.

SUMMARY: Commercial permittee revenue for floatboats remains the same in Alternatives A, B, and C under the no flex scenario. Alternative E shows a $573,000 reduction in commercial revenue under the no flex scenario based on the alternatives alternating week of exclusive use in the Dam to Kirkwood segment of the wild section. Alternatives D, F, and G show a $51,000 reduction in commercial revenue based on the elimination of thw two temporary use one-day float permits.

Associated expenditures by private nonmotorized recreationists remains the same in Alternatives A, B, C, and G under the no flex scenario. Alternatives D and F show a $29,000 reduction in associated expenditures from Alternative A under the no flex scenario based on the use allocation that would prohibit floatboat launches in the scenic section. Alternative E shows a $302,000 reduction in associated expenditures from Alternative A under the no flex scenario.



KEY INDICATOR:

- Number and type of recreational users displaced.

Table II-5

Annual Displaced Recreators by Activity and Alternative, Based on 1991 Use Levels												
Activity	**A**	**B**	**C**	**%[1]**	**D**	**%[1]**	**E**	**%[1]**	**F**	**%[1]**	**G**	**%[1]**
Commercial Powerboat												
No Flex	0	0	-6,672	-46	-6,020	-41	-3,471	-24	-6,020	-41	-1,783	-12
Max Flex	0	0	-5,074	-35	-2,988	-21	-2,179	-15	-4,511	-31	-1,076	-7
Private Powerboat												
No Flex	0	0	-3,161	-53	-893	-15	-440	-7	-893	-15	-242	-4
Max Flex	0	0	-3,161	-53	-429	-7	-220	-4	-665	-11	-141	-2
Commercial Float												
No Flex	0	0	0	0	-279	-13	-1,048	-50	-279	-13	-279	-13
Max Flex	0	0	0	0	-140	-7	-267	-13	-140	-7	-140	-7
Private Float												
No Flex	0	0	0	0	-123	-5	-1,276	-52	-123	-5	0	0
Max Flex	0	0	0	0	0	0	-842	-32	0	0	0	0

[1] Percentages are the percent reduction from 1991 primary season passenger levels for the indicated activity.

Table II-5. Summary of annual displaced recreationists by activity and alternative.

SUMMARY: Commercial powerboat recreationists would not be displaced in Alternatives A and B under the no flex scenario. Alternatives C, E, and G would displace 46%, 24%, and 12%, respectively, of the commercial recreationists compared to Alternative A under the no flex scenario based on their respective proposed use allocation systems. Alternative D would displace 41% of the commercial powerboat recreationists compared to Alternative A under the no flex scenario based on the non-motorized allocation in the Dam to Kirkwood segment of the wild section. Alternative F would displace 41% of the commercial powerboat recreationists compared to Alternative A under the no flex scenario based on the year-round, non-motorized, allocation in the entire wild section.

Private powerboat recreationists would not be displaced in Alternatives A and B under the no flex scenario. Alternatives C would displace 53% of the private recreationists compared to Alternative A under the no flex scenario based on the moderate use allocation proposed. Alternative D would displace 15% of the private powerboaters compared to Alternative A under the no flex scenario based on the non-motorized allocation in the Dam to Kirkwood segment of the wild section. Alternative F would displace 41% of the private powerboat recreationists compared to Alternative A under the no flex scenario based on the year-round, non-motorized, allocation in the entire wild section. Alternatives E and G would displace 7% and 4%, respectively, of private powerboat recreationists compared to Alternative A under the no fles scenario.

Commercial floatboat recreationists would not be displaced in Alternatives A, B, and C under the no flex scenario. Alternative E would displace 50% of the commercial floatboat recreationists compared to Alternative A under the no flex scenario based on the alternating week of exclusive use. Alternatives D, F, and G displace 13% of commercial floatboat recreationists compared to Alternative A based on the elimination of the two temporary use one-day float permits.

Private floatboat recreationists would not be displaced in Alternatives A, B, and C under the no flex scenario. Alternatives D and F would displace 5% of the private floatboat recreationists compared to Alternative A under the no flex scenario based the prohibition of floatboat launches in the scenic section. Alternative E would displace 47% of the private floatboat recreationists compared to Alternative A under the no flex scenario based on the alternating week of exclusive use.

KEY INDICATOR:

- Cost of alternative implementation.

Table II-6

Alternative	Amount	Percent Change from Alt A
A	$463,900	NA
B	$463,900	0%
C	$441,000	-5%
D	$418,800	-11%
E	$457,900	-1%
F	$375,500	-19%
G	$463,900	0%

SUMMARY:

Management implementation costs for the river corridor remain under Alternatives A, B, and G. Significant differences to river corridor management costs are associated to Alternatives D and F which both propose portions of the wild section as non-motorized for periods of time.



ISSUE: The establishment of appropriate and equitable levels of boating and aircraft use should meet the intended recreation experience in the following settings:

- **Wild river between Hells Canyon Dam and Kirkwood Historic Ranch**
- **Wild river between Kirkwood Historic Ranch and Pittsburg Landing**
- **Scenic and Study river between Pittsburg Landing and the Northern boundary of the NRA.**

KEY INDICATOR:

- Using the ROS classes, evaluate each alternative's ability to protect and enhance the recreation ORV and DFC's through the following settings:

- Degree of providing access
- Degree of providing remoteness
- Degree of social encounters
- Degree of visitor management
- Degree of facilities and site management
- Degree of user fairness and equitability

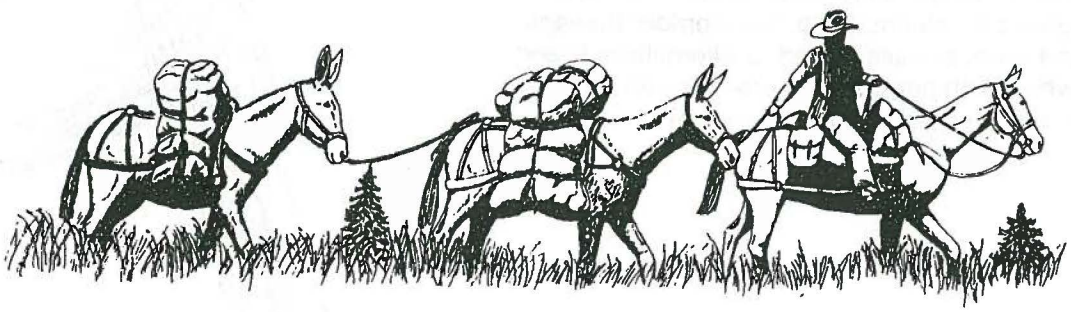


Table II-7 -- Capability to Achieve ROS Settings

Alternative	A		B		C		D		E		F		G	
Analysis Category	Wild	Scenic	Wild	Scenic	Wild	Scenic	Wild	Scenic	Wild	Scenic	Wild	Scenic	Wild	Scenic
Access Level	L	L	M	M	H	H	H	H	H	H	H	H	H	H
Sense of Remoteness	L	L	L	L	H	H	M	H	H	M	L	M	H	M
Social Encounters	L	L	L	L	H	H	H	M	H	M	H	M	H	M
Visitor Management	L	L	L	L	M	H	H	H	M	H	H	H	H	H
Facility/Site Management	L	L	M	M	H	H	H	H	H	H	H	H	H	H
Desired Recreation Experience	L	L	L	L	M	L	L	M	H	M	L	L	H	M
Campsite Competition	L	*	H	*	H	*	M	*	M	*	M	*	H	*

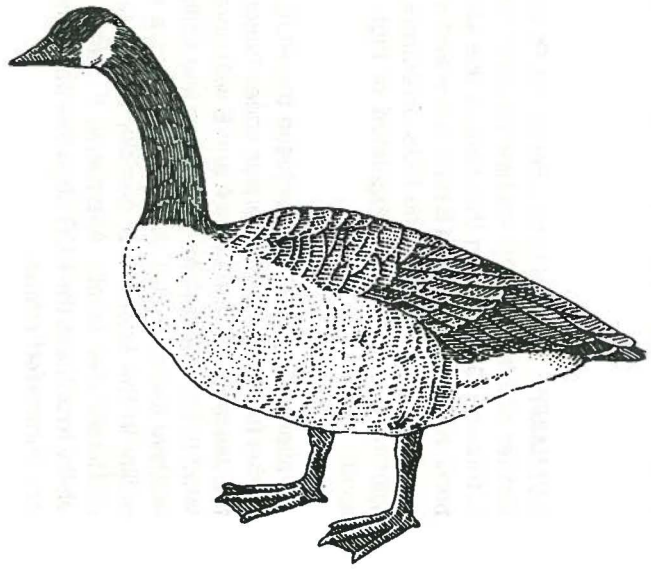
H = High potential for achieving objective

M = Moderate potential for achieving objective

L = Low potential for achieving objective

* Acceptable for Alternatives C, D, E, F, and G. Unacceptable for Alternatives A and B.

Table II-7. Summary of the alternatives' ability to protect and enhance the ROS classes.



SUMMARY: The ability to achieve the ROS objectives of access levels are high for Alternatives C through G based on the various use allocations. Alternatives A and B have a low and moderate ability to achieve the ROS objectives, respectively, based on unregulated or high use levels.

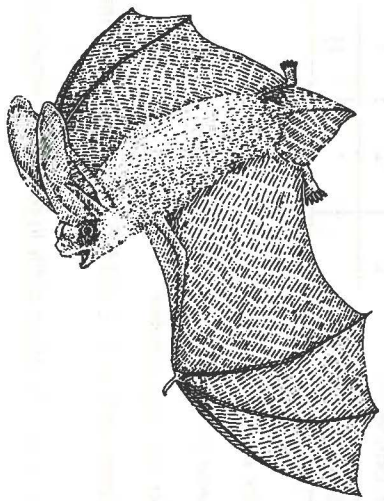
An alternative's ability to achieve the ROS objective for sense of remoteness varies based on the use levels. Alternatives A and B with unregulated to high motorized use have a low ability to achieve the objective. Alternative C has a high ability in the entire river corridor based on its moderate use levels. Alternative F has a low ability to achieve the ROS objective based on its non-motorized status.

Alternatives A and B both have a low potential to achieve the ROS objective for social encounters with unregulated to high motorized use. Alternatives C, D, E, F, and G have a high ability to achieve the social encounter objective in the wild section based on the various use allocations. Alternatives D, E, F, and G have a moderate ability based on moderate use levels in the scenic section.

Alternatives A and B both have a low potential to achieve the ROS objective for visitor management with unregulated to high motorized use. Alternatives C and E both have a moderate potential to achieve the visitor management ROS objective in the wild section with a high potential in the scenic section. Alternatives D, F, and G have a high potential to meet the visitor management ROS objectives in both the wild and scenic river.

Alternatives A and B have a low and moderate potential to achieve the ROS objective for facility/site management, respectively. Alternatives C, D, E, F, and G all have a high potential to achieve the ROS objective for facility/site management.

Alternatives A and B both have a low potential to achieve the objective for desired recreation experience. Alternative C in the scenic section, D in the wild section, and F in both wild and scenic sections have a low potential to achieve the desired recreation experience based on the allocation or timing of uses. Alternative C in the wild section and D, E, and F in the scenic section have a moderate potential to achieve the desired recreation experience based on the allocation of use. Only Alternatives E and G have a high potential to achieve the desired recreation setting in the wild section based on providing both shared use and exclusive use allocations.



ISSUE: Party size restrictions, solid human waste carryout, and campsite stay limits should minimize onshore impacts from recreational users.

KEY INDICATOR:

- Risk of visitor impacts from onshore recreation use on:
  - Proposed, endangered, threatened, and sensitive (PETS) plant species and habitat
  - Cultural resources

Table II-8

WILD RIVER SECTION

	ALTERNATIVES						
KEY INDICATOR	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Risk of Disturbance on PETS Plant Species and Habitat	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Risk of Disturbance on Cultural Resources	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Table II-8. Summary of risk of disturbance from onshore recreation use on proposed, endangered, threatened, and sensitive species, and cultural resources for the wild river section.

Table II-9

SCENIC RIVER SECTION

	ALTERNATIVES						
KEY INDICATOR	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Risk of Disturbance on PETS Plant Species and Habitat	High	High	Moderate	Moderate	Moderate	Moderate	Moderate
Risk of Disturbance on Cultural Resources	High	High	Moderate	Moderate	Moderate	Moderate	Moderate

Table II-9. Summary of risk of disturbance from onshore recreation use on proposed, endangered, threatened, and sensitive species, and cultural resources for the scenic river section.

SUMMARY: Within the wild section, Alternatives A has the highest potential to adversely impact PETS plant species and habitat, and cultural resources based on unlimited or high recreation use levels. Alternatives C, E, and G have a moderate potential to adversely impact PETS plant species and habitat, and cultural resources based on moderate recreation use levels. Although Alternatives D and F have low water-based recreational use levels they would have a moderate potential to adversely impact PETS plant species and habitat, and cultural resources based on the potential to increase foot and horse traffic on the paralleling trail systems.

Within the scenic section, Alternatives A and B have the highest potential to adversely impact PETS plant species and habitat, and cultural resources based on unlimited or high recreation use levels. Alternatives C, D, E, F, and G have a moderate potential to adversely impact PETS plant species and habitat, and cultural resources based on moderate recreation use levels.

All of the action alternatives would minimize impacts by implementation of a user education program and solid human waste carryout program.

CHAPTER III
AFFECTED ENVIRONMENT

INTRODUCTION

This chapter discusses resource values that affect or may be affected by recreation use levels. It also displays social and economic conditions.

The Wild and Scenic Snake River runs north from Hells Canyon Dam to the Washington-Oregon border and forms the northern portion of the boundary between Oregon and Idaho. The proposed action will affect the river and onshore resources within the corridor boundary (reference the LAC report in the analysis file). The corridor is generally about a quarter-mile on each side of the high-water mark.

This chapter consists of the following sections:

- Introduction
- River Description
- Description of Outstandingly Remarkable Values
  - Scenic
  - Recreation
  - Geologic
  - Wildlife
  - Fisheries
  - Historic and Prehistoric Cultural Resources
  - Traditional Use, Cultural
  - Vegetation/Botanical
  - Ecological
- Description of Social and Economic Conditions
  - Social Environment
  - Economic Conditions

RIVER DESCRIPTION

The Act establishing the Hells Canyon NRA, designated 67.5 miles of the Snake River as wild and scenic, classified into the following segments:

WILD RIVER: The 31.5 miles from Hells Canyon Dam to Pittsburg Landing.

SCENIC RIVER: The 36.0 miles from Pittsburg Landing to the northern boundary of the Wallowa-Whitman National Forest

STUDY RIVER: Four miles of river frontage was added to Forest Service ownership and management with the acquisition of property at Cache Creek and has been included in this analysis.

DESCRIPTION OF THE RECREATION OPPORTUNITY SPECTRUM

The Wild and Scenic Rivers Act provides clear direction that river management plans shall be prepared to provide for the protection of river values for which it was designated. Plans need to address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of the Act (Section 3(d)(1)(2)).

FSM 2310.3 directs the use of recreation opportunity spectrum (ROS) to establish planning criteria, generate objectives for recreation, evaluate public issues, integrate management concerns, anticipate recreation needs and demands, and coordinate management objectives. It also says to use the ROS system to develop standards and guidelines for proposed recreation resource use and development.

According to FSM 2354.32 management plans must state the ROS classifications featured and procedures for maintaining the ROS over time. FSM 2354.41 says to use ROS classifications as an aid in determining an adequate mix of recre-

ation opportunities to ensure physical and social capabilities of the river environment are protected.

Regional Office guidance refined the national ROS guidelines to be more useful in the application of river planning and management (reference the analysis file).

ROS is based upon managing for a range of recreation experiences. These experiences range from those found in a primitive setting where the influence of humans is minor to an urban setting where experiences are highly influenced by humans. An analysis of the overall trends for the Snake River since designation in 1975 indicates that human activities have either moved the river away from a more primitive or semi-primitive experience normally associated with a wild and scenic river designation or have fluctuated within a middle range (reference analysis file).

The direction these trends have taken can be directly associated with increased levels of use by both motorized and non-motorized rivercraft as well as different management strategies. In order to protect and enhance ORV's found on the Snake River, the objective of a management strategy using ROS as a guideline would be to make sure overall trends remain focused toward the primitive, semi-primitive end of the spectrum with attributes that accommodate motorized use.

Using these legislated requirements and national and regional policy, the Forest Service planning team developed ROS characteristics for the Wild and Scenic Snake River corridor, as displayed in Tables III-1 and III-2.

Although recommendations coming out of the LAC planning process were based on an opportunity class that identified physical, social, and managerial conditions, the Forest Service planning team chose to use the ROS characteristics developed under the above referenced guidance. These ROS characteristics provide the basis for standard and guideline development of the action Alternatives C through G displayed in Chapter II. They are to be combined with the DFC's displayed in Chapter I to establish specific goals and objectives for the long-term programmatic and project level management that will occur in the river corridor. These ROS characteristics also provide the basis, as key indicators, by which to evaluate the effectiveness of the action alternatives in resolving the significant issues listed in Chapter I.

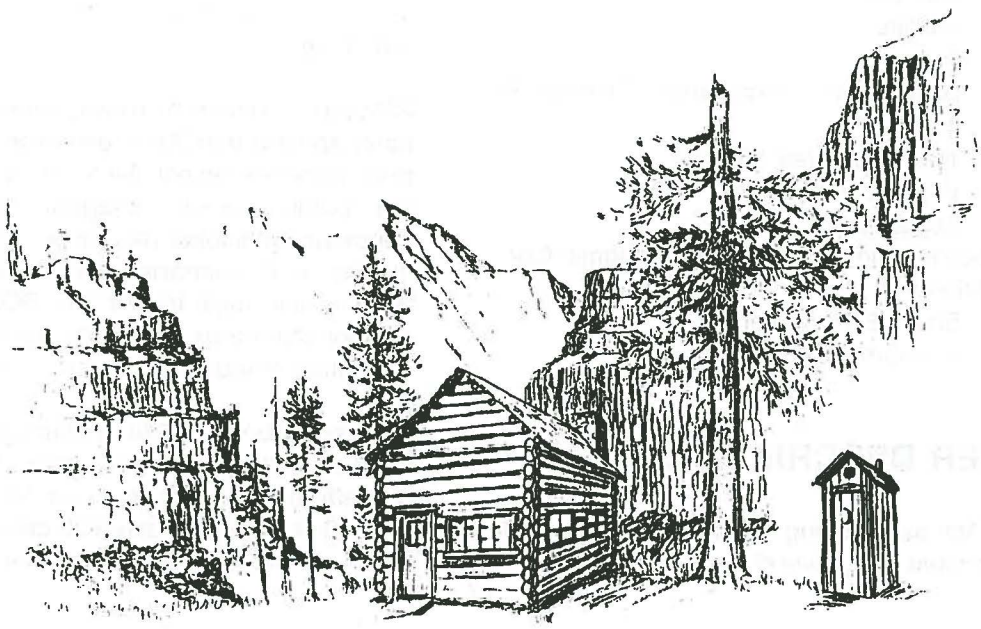


TABLE III-1

RECREATION OPPORTUNITY SPECTRUM CHARACTERISTICS
WILD RIVER

Management Area	Naturalness/Visual Quality	Access	Remoteness	Social Encounters	Visitor Management	Visitor Impact	Facilities
General Corridor Management Area 8	Largely undisturbed natural environment with little evidence of human development. Manage for preservation visual quality.	Very few access sites developed along the river. Roads are to access points only and do not parallel river. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others. Sense of remoteness.	Few contacts with other users at rapids and access points. Little but some evidence of other users. Small party sizes are managed through limited boats per group. Upland user's may frequent the corridor through established trails.	Self-reliance through application of outdoor skills in an environment that offers a high degree of challenge and risk. No on-site visitor management controls or regulations apparent. On non-motorized trips, visitors participate in navigation of the river and perceive a high degree of challenge and risk.	Natural ecosystems operate freely. Human impact should not be apparent in an area greater than 750 sq. ft. at any campsite. No site hardening, except needed for resource protection. No toilets provided.	No facility development for user comfort. Solid human waste carryout is required. Low impact camping practices are required.
Hells Canyon Creek Recreation Site Management Area 16	Substantially modified landscape having both manmade and natural features. Evidence of human development is prevalent. Manage for partial retention visual quality.	Developed access is provided with road paralleling a portion of river. Auto use is consistent and may be seen from river. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate evidence of the sights and sounds of others.	Contact with others expected, including frequent interface between river users and shore users.	Challenge and risk are less important. Visitor management controls are visible and expected. Contacts with management personnel are more frequent.	Visitor impacts a major concern. Site hardening may be dominant but in harmony.	Some facility development for protection of the resource and to accommodate visitor comfort. Facilities developed to manage/aid greater number of visitors. Site is developed to provide health/sanitation facilities and recreation convenience. Land based recreation facility development more prevalent.
Sheep Creek Recreation Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant with moderate evidence of human development. Manage for retention visual quality.	Access is by river or trail only. Valid motor-ized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others. Sense of remoteness.	Little but some evidence of other users. Small party sizes are managed through limited boats per group.	Self-reliance through application of outdoor skills in an environment that offers a moderate degree of challenge and risk. Only a few on-site visitor management controls or regulations are apparent.	Natural ecosystems dominate. Human use obvious but subordinate. Sites may be hardened to accommodate use. Pit toilets are provided.	Minimal facility devel-opment primarily for resource protection. Low impact camping practices required.

TABLE III-1 (cont.)

RECREATION OPPORTUNITY SPECTRUM CHARACTERISTICS WILD RIVER							
Management Area	**Naturalness/Visual Quality**	**Access**	**Remoteness**	**Social Encounters**	**Visitor Management**	**Visitor Impact**	**Facilities**
Sand Creek Administrative Site Management Area 16	Largely undisturbed natural environment with little evidence of human development. Manage for preservation visual quality.	Access is by river or trail only. Valid motor -ized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others. Sense of remoteness.	Little but some evidence of other users. Small party sizes are managed through limited boats per group.	Self-reliance through application of outdoor skills in an environment that offers a moderate degree of challenge and risk. No on-site visitor management controls or regulations apparent.	Natural ecosystems operate freely. Human impact should not be apparent in an area greater than 750 sq. ft. at any campsite. No site hardening. No toilets provided.	Minimal facility devel -opment primarily for resource protection. Solid human waste carryout required. Low impact camping practices required.
Temperance Creek Ranch Headquarters Administrative Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant with evidence of human development. Manage for retention visual quality as seen from the river corridor.	Access is by river, trail, aircraft (Big Bar strip) only. Valid motorized and non-motorized watercraft are consistent with management objectives in support of grazing operations.	Low expectation of solitude with moderate evidence of the sights and sounds of others.	Little but some evidence of other recreation users.	Only a few subtle on-site visitor management controls or regulations apparent.	Human use obvious. Sites may be hardened as a result of motorized use. Toilets are provided to accommodate ranching operations only.	Facilities developed for protection of resource and to accommodate ranching operations.
Salt Creek Administrative Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant with moderate evidence of human development. Manage for retention visual quality.	Access is by river or trail only. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others. Sense of remoteness.	Little but some evidence of other users. Small party sizes are managed through limited boats per group.	Self-reliance through application of outdoor skills in an environment that offers a moderate degree of challenge and risk. Only a few on-site visitor management controls or regulations are apparent.	Natural ecosystems dominate. Human use obvious but subordinate. Sites may be hardened to accommodate use. Pit toilets are provided.	Minimal facility development primarily for resource protection. Low impact camping practices required.
Kirkwood Historic Ranch Recreation Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant with moderate evidence of human development. Manage for retention visual quality.	Access is by river, trail, or Kirkwood road. Kirkwood road is an access point only and does not parallel river. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others.	Moderate use occurs. Contact with others is expected and occasionally continual, some chance of isolation.	Opportunities for challenge in a natural environment but less expectation of risk. A few on-site visitor controls or regulations may be expected. Contacts with management personnel are more frequent.	Natural ecosystems dominate. Human use obvious but subordinate. Sites may be hardened to accommodate use. Toilets are provided.	Rustic facilities developed for protection of the resource and to accommodate visitor use.

TABLE III-1 (cont.)

RECREATION OPPORTUNITY SPECTRUM CHARACTERISTICS WILD RIVER							
Management Area	**Naturalness/Visual Quality**	**Access**	**Remoteness**	**Social Encounters**	**Visitor Management**	**Visitor Impact**	**Facilities**
Historic Structures Management Area 8	Alterations to the landscape are subtle. Natural characteristics remain dominant with moderate evidence of human development. Manage for retention visual quality.	Access is by river or trail only. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others. Sense of remoteness.	Little but some evidence of other users. Small party sizes are managed through limited boats per group.	Self-reliance through application of outdoor skills in an environment that offers a moderate degree of challenge and risk. Only a few on-site visitor management controls or regulations are apparent.	Natural ecosystems dominate. Human use obvious but subordinate. Sites may be hardened to accommodate use. No toilets provided.	Minimal facility development primarily for resource protection. Solid human waste carryout required. Low impact camping practices required.
Scientific Monitoring Stations	Largely undisturbed natural environment with little evidence of human development. Manage for preservation visual quality.	Very few sites developed along the river unless it is accessible by existing road. Valid motorized and non-motorized watercraft are consistent with management objectives.	Sense of remoteness on-site unless located in administrative or developed recreation site.	Few contacts with other users at rapids and access points. Little but some evidence of other users.	Only a few subtle on-site visitor management controls or regulations are apparent.	Natural ecosystems operate freely. Human impact should not be apparent in an area greater than 750 sq. ft. at any campsite. No site hardening. No toilets provided.	Minimum facility development necessary for collection of scientific data.
Private Lands	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.

TABLE III-2

RECREATION OPPORTUNITY SPECTRUM CHARACTERISTICS
SCENIC RIVER

Management Area	Naturalness/Visual Quality	Access	Remoteness	Social Encounters	Visitor Management	Visitor Impact	Facilities
General Corridor Management Area 8	Largely undisturbed natural environment with limited evidence of human development. Manage for retention visual quality.	Very few access sites developed along the river. Roads are to access points only and do not parallel river. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others. Sense of remoteness.	Some contacts with other users at rapids and access points. Some evidence of other users. Small party sizes are managed through limited boats per group. Upland users may frequent the corridor through established trails.	Self-reliance through application of outdoor skills in an environment that offers a moderate degree of challenge and risk. Only a few subtle on-site visitor management controls or regulations are apparent. Outfitter and guides are often used but customers experience a moderate degree of challenge and risk.	Natural ecosystems dominate. Human use obvious but subordinate. Sites may be hardened to accommodate use. No toilets provided.	Minimal facility development primarily for resource protection. Solid human waste carryout is required.
Pittsburg Landing Recreation Site Management Area 16	Substantially modified landscape having both manmade and natural features. Evidence of human development is prevalent. Manage for partial retention visual quality.	Developed access is provided with road paralleling a portion of river. Auto use is consistent and may be seen from river. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate evidence of the sights and sounds of others.	Moderate use occurs. Contact with others is expected and occasionally continual. Some chance for isolation.	Opportunities for challenge in a natural environment but less expectation of risk. A few on-site visitor management controls or regulations may be expected. Contacts with management personnel are more frequent.	Visitor impacts a major concern. Site hardening may be dominant but in harmony. Toilets are provided.	Some facility development for protection of the resource and to accommodate visitor comfort. Facilities developed to manage/aid greater number of visitors. Site is developed to provide health/sanitation facilities and recreation convenience. Land based recreation facility development more prevalent.
Pittsburg Administrative Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant. Moderate evidence of human development. Manage for partial retention visual quality.	Access is by river, trail, or aircraft only. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others.	Few contacts with other users. Little but some evidence of other users.	Only a few subtle on-site visitor management controls or regulations are apparent. Contacts with management personnel are more frequent.	Human use obvious but subordinate. Site modified and subtle site hardening provided to minimize impacts and to provide for user convenience. Toilets are provided.	Minimal facility development primarily for resource protection.

TABLE III-2 (cont.)

RECREATION OPPORTUNITY SPECTRUM CHARACTERISTICS SCENIC RIVER							
Management Area	**Naturalness/Visual Quality**	**Access**	**Remoteness**	**Social Encounters**	**Visitor Management**	**Visitor Impact**	**Facilities**
Tryon Creek Administrative Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant. Moderate evidence of human development. Manage for retention visual quality.	Access by river or trail only. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expection of experiencing isolation from the sights and sounds of others.	Few contacts with other users. Little but some evidence of other users. Small party sizes managed through limited boats per group.	Self-reliance through application of outdoor skills in an environment that offers a moderate degree of challenge and risk. Only a few subtle on-site visitor management controls or regulations are apparent.	Natural ecosystems dominate. Human use obvious but subordinate. Sites may be hardened to accommodate use. No toilets provided.	Minimal facility development primarily for resource protection.
Copper Creek Recreation Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant. Moderate evidence of human development. Manage for partial retention visual quality.	Access is by river or trail only. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others.	Moderate use occurs. Contact with others is expected and occasionally continual. Some chance of isolation.	Opportunities for challenge in a natural environment but less expectation of risk. A few on-site visitor management controls or regulations may be expected. Outfitter and guides are often used but customers experience a moderate degree of challenge and risk.	Natural ecosystems dominate. Human use obvious but subordinate. Sites may be hardened to accommodate motorized use and user convenience. Toilets are provided.	Some facility development for protection of the resource and to accommodate visitor comfort. Facilities developed to manage/aid greater number of visitors. Site is developed to provide health/sanitation facilities and recreation convenience.
Dug Bar Recreation Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant. Moderate evidence of human development. Manage for partial retention visual quality.	Access is by road, river, trail, or aircraft only. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others.	Moderate use occurs. Contact with others is expected and occasionally continual. Some chance for isolation.	Opportunities for challenge in a natural environment but less expectation of risk. A few on-site visitor management controls or regulations may be expected. Contacts with management personnel are more frequent.	Human use apparent. Site modified and subtle site hardening provided to minimize impacts and to provide for user convenience. Toilets are provided.	Rustic facilities developed for protection of resource and to accommodate visitor use at portal, trailheads, and administrative facilities.

TABLE III-2 (cont.)

RECREATION OPPORTUNITY SPECTRUM CHARACTERISTICS SCENIC RIVER							
Management Area	**Naturalness/Visual Quality**	**Access**	**Remoteness**	**Social Encounters**	**Visitor Management**	**Visitor Impact**	**Facilities**
Cache Creek Recreation Site Management Area 16	Alterations to the landscape are subtle. Natural characteristics remain dominant. Moderate evidence of human development. Manage for partial retention visual quality.	Access is by river, trail, or aircraft only. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others.	Moderate use occurs. Contact with others is expected and occasionally continual. Some chance for isolation.	Opportunities for challenge in a natural environment but less expectation of risk. A few on-site visitor management controls or regulations may be expected. Contacts with management personnel are more frequent.	Human use apparent. Site modified and subtle site hardening provided to minimize impacts, to provide for user convenience, and accomodate limited motorized use. Toilets are provided.	Rustic facilities developed for protection of the resource and to accommodate visitor use.
Historic Structures Management Area 8	Alterations to the landscape are subtle. Natural characteristics remain dominant. Moderate evidence of human development. Manage for retention visual quality.	Access by river or trail only. Valid motorized and non-motorized watercraft are consistent with management objectives.	Moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others.	Few contacts with other users. Little but some evidence of other users. Small party sizes managed through limited boats per group.	Self-reliance through application of outdoor skills in an environment that offers a moderate degree of challenge and risk. Only a few subtle on-site visitor management controls or regulations are apparent.	Natural ecosystems dominate. Human use obvious but subordinate. Sites may be hardened to accommodate use. No toilets provided.	Minimal facility development primarily for resource protection.
Scientific Monitoring Stations	Largely undisturbed natural environment with little evidence of human development. Manage for retention visual quality.	Very few sites developed along the river unless it is accessible by existing road. Valid motorized and non-motorized watercraft are consistent with management objectives.	Sense of remoteness on-site unless located in administrative or developed recreation site.	Few contacts with other users at rapids and access points. Little but some evidence of other users.	Only a few subtle on-site visitor management controls or regulations apparent.	Natural ecosystems operate freely. Human impact should not be apparent in an area greater than 750 sq. ft. at any campsite. No site hardening. No toilets provided.	Minimum facility development necessary for collection of scientific data.
Private Lands	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.	Manage pursuant to private land use regulations 36 CFR 292 Subpart E.

DESCRIPTION OF OUTSTANDINGLY REMARKABLE VALUES

Because the Snake River was never designated a "study" river, outstandingly remarkable values were not previously identified. It is appropriate to identify them in this document as a means of describing the environment to be affected by various levels of recreation use on the river, and to use them to develop desired future conditions.

The Forest Service planning team has determined the following values of the Snake River to be outstandingly remarkable: scenic, recreational, geologic, wildlife, fisheries, cultural resources (both historic and prehistoric), vegetation/botanical, and ecological. Other values considered are derived from social and economic environments.

Although the determination of value significance is a matter of informed professional judgment and interpretation, this process includes the following steps or verification techniques:

- The use of resource specialists working as an interdisciplinary team;
- Consideration of uniqueness and rarity at a regional and national level;
- Values must be river-related, owing their existence or contributing to the functioning of the river system and its environs;
- The use of qualitative guidelines to help determine significance;
- Verification by other experts in the subject area.

SCENIC

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions within the geographic region. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment length and not common to other rivers in the geographic region.

EVALUATION OF THE PRESENT SITUATION

The Snake River is one of the largest rivers in the western United States and has long been a major focus of water recreation in the country. Thousands of recreationists come to view this wonderland of diverse landscapes--some from the top of Hells Canyon, and some from the river, to look into its massive ruggedness and the beauty of its expanse.

Where the Snake River runs through Hells Canyon it has carved the deepest river canyon in North America. Steep canyon walls rise from the rushing river. Layers of rock created by the Columbia River basalt flows form the canyon walls. Several small sandy beaches add variety to the rocky shorelines. Small grass- and pine-covered benches appear in the narrow part of the gorge. As the canyon widens, larger benches lie below the steep, upper canyon walls. Ponderosa pine trees grow at mid-elevation providing stringers of texture to thousands of grassy acres. The vast differences in elevation create a tremendous diversity of vegetation and provide habitat for many species of wildlife. Remains of several historic structures and many prehistoric sites also exist in the canyon.

Another attribute of this ORV is related to the natural sounds produced by the river. The size and force of the waterway makes this a value not to be intruded upon. Large volumes of rushing water tumbling over huge boulders, through rapids and along slow stretches create a strong attraction for people.

FINDING

The Wild and Scenic Snake River is recognized nationally for its scenic qualities. The corridor is within a national recreation area and its boundaries are adjacent to designated wilderness on portions of both sides. Grass-shrub and cactus-covered benches with rugged mountains rising

behind them, spectacular rock formations, and the river itself create a beautiful landscape. Great contrasts of landform, vegetation, color, climate, and sound are found. Scenery within view of the Wild and Scenic Snake River is an outstandingly remarkable value.

RECREATION

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING

Recreational opportunities are, or have the potential to be, unique enough to attract visitors from outside of the geographic region. Visitors would be willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but may not be limited to, sightseeing, wildlife observation, photography, hiking, fishing, hunting, and boating.

Interpretive opportunities may be exceptional and attract, or have the potential to attract, visitors from outside the geographic region.

The river may provide, or have the potential to provide, settings for national or regional usage or competitive events.

EVALUATION OF THE PRESENT SITUATION

The Wild and Scenic Snake River offers a blend of motorized and non-motorized boating in a setting that is unique in North America. Recreationists can pursue a variety of activities in a backcountry river environment. Unlike most rivers in a backcountry setting, the Snake River is accessed by different types of watercraft and provides a variety of whitewater challenges. It allows visitors to gain an appreciation and understanding of other users from diverse social backgrounds and with various recreational interests. Recreationists commonly use the river for both motorized and non-motorized recreation during the same river trip.

Class I to V rapids provide a variety of challenges for novice to expert boaters based on their skill level and the type of watercraft (powerboats, rafts, kayaks, canoes, and dories) used to travel through the canyon. Running world class rapids can be combined with traveling through placid, quiet stretches of river on the same trip. The scenic beauty of the canyon and the challenge and risk associated with whitewater boating attract powerboaters and floatboaters to the river.

The quality of whitewater floating in the canyon surpasses all other similar experiences in the Pacific Northwest. The major class IV and V rapids of the upper canyon provide the largest volume rapids in the western United States outside of the Grand Canyon of the Colorado River. Floatboaters can run a variety of trip lengths, usually one to six days in duration. Down river from Pittsburg Landing, the rapids become less technical and provide an excellent opportunity for less-experienced floatboaters and families with small children to float through a major river canyon. Floatboaters continuing down the Snake River from the Lower Salmon River travel through the two deepest river canyons in North America on a single trip. Many floatboaters take advantage of being able to use motors on the Snake River to assist them in traveling through the quieter stretches of the river where commonly occurring upstream winds make downstream float travel more physically challenging. Recreational demand for a float trip on the Snake River is high. A lottery guarantees fair and equitable opportunities for private floatboaters. Private and commercial demand is regional, national, and international in scope.

This is the premier whitewater powerboating river in the United States and is one of the few areas available for powerboaters to travel in a backcountry setting through major rapids (See Appendix H). Due to its size, volume, and characteristics, the river provides excellent opportunities for new boaters to learn whitewater boating skills and to increase the degree of challenge as they improve these skills and navigate more difficult sections of the river. Powerboaters can also experience backcountry overnight camping. The river creates a unique teaching environment for developing low impact/no trace camping ethics among the recreationists. Unlike other major whitewater rivers

in the northern and western United States, the river provides a year-round powerboating experience and remains generally free of ice during the winter.

The Snake River provides habitat for a diverse and productive mix of warm and cold water fish species. White sturgeon, steelhead, rainbow trout, and small mouth bass allow year-round fishing on a seasonal basis. The catch-and-release policy established for sturgeon emphasizes the importance of maintaining this species for its intrinsic value and sport fishing. Many regional newspaper and magazine articles focus on fishing in the Snake River. A thriving outfitter industry specializes in the fall steelhead fishing season. They also emphasize the abundant variety and size of species available for year-round fishing. Fishing is especially valued by powerboaters, and if the fishing is poor, powerboat use drops proportionately.

Trail users come to the river during the spring and fall seasons because of the favorable canyon/river climate. Steep, narrow trails wind through spectacular scenery accented by the river in a backcountry setting. The corridor also provides access to the adjacent wilderness with its great variety of challenges and experiences.

The designation of the Snake River Trail from Pittsburg Landing to Granite Creek as a national recreation trail indicates the high quality of the experience for trail users. Backpacking and horsepacking within the river corridor provide a wonderful backcountry experience in a remote river location set amidst incredible scenery with outstanding wildlife viewing opportunities. Regional newspaper and magazine articles regularly feature the early springtime trail use.

A variety of interpretive themes exist in the corridor. Large concentrations of prehistoric sites and a colorful history of exploration, mining, and settlement combine to create numerous national historic sites as well as a national historic district.

Herds of deer and elk, a year-round population of Canadian geese, wintering bald eagles, black bears, mountain goats, and many other mammals and birds create memorable viewing experiences for wildlife watchers. Bighorn sheep can easily be viewed from a number of river locations. Visitors, including the physically-challenged, can travel by boat to view wild flowers, wildlife, and prehistoric sites.

Although big game hunting takes place on the uplands and benches above the river, hunting was not found to be an outstandingly remarkable value within the confines of the corridor. The corridor provides a unique experience for big game and chukar hunters when access to the area is by boat.

Access to the corridor by motor vehicle occurs at the major portals, i.e., Hells Canyon Dam, Pittsburg Landing, Dug Bar. The road in to Kirkwood Historic Ranch is open to those who care to face the challenge. There are roads in to the Cache Creek Administrative Site and Jim Creek, but they are currently closed to public use. Other access opportunities are by aircraft at the backcountry airstrips (Big Bar, Pittsburg Landing, Dug Bar, Salmon Creek), trails, and motorized and non-motorized river craft.

FINDING

Designation as a national recreation area, and as a wild and scenic river, signifies the national importance of recreation values in the corridor. The wide range of available recreation activities, the unique backcountry river setting, and the diversity of users combine to make recreation an outstandingly remarkable value.

GEOLOGIC

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING

The river, or the area within the river corridor, contains an example(s) of a geologic feature, process, or phenomena that is rare, unusual, one-of-a-kind, or unique to the geographic region. The feature(s) may be in an unusually active stage of development, represent a "textbook" example and/or represent a unique or rare combination of geologic features (erosion-

al, volcanic, glacial, and other geologic structures).

EVALUATION OF THE PRESENT SITUATION

From the river to the rim, Hells Canyon provides a geological cross section of over 300 million years of earth history. The canyon walls portray a complex geological history which until very recently was somewhat of a mystery to earth scientists.

This history includes how chains of volcanic islands and blocks of sea floor crust and sediments, originating far out in the Pacific Ocean, were added to the westward moving North American Continental Plate. Some of these blocks were welded to the western edge of the continental plate while others were forced beneath the plate. The dynamics of plate tectonics formed these exotic blocks or terranes into a layered mosaic of rocks as they successively docked against the old continental plate boundary along what is now western Idaho near Riggins.

The canyon bottom bears evidence of more recent geological events of a catastrophic nature. These include the Bonneville floods and the eruption of Mount Mazama. The Bonneville floods occurred about 15,000 years ago when water from Lake Bonneville (ancestral Salt Lake) spilled over at American Falls and into the Snake River. This spectacular event increased the volume of the river at least 1,000 times greater then the present spring runoff. This huge outflow of water widened the canyon and left behind massive sand and gravel terraces, such as those at Big Bar and Pittsburg Landing. Some of these terraces are 400 feet above the present flood plain.

Light-colored ash layers from Mount Mazama (Crater Lake) can be seen along the river. This eruption occurred about 6,900 years ago and covered much of the northwest with easily recognized ash layers which conveniently marks time for both geologists and archaeologists.

FINDING

The geological research potential of the river corridor and adjacent canyon walls is significant. The canyon has been the source of numerous graduate research projects, both completed and ongoing. Based on these factors, the geology is an outstandingly remarkable value.

WILDLIFE

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING

Wildlife values may be judged on the relative merits of either wildlife populations, habitat, or Native American cultural use - or a combination of these conditions.

Populations. The river or area within the river corridor contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species considered to be unique or populations of federal or state listed or candidate threatened, endangered, and sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Habitat. The river or area within the river corridor provides exceptionally high quality habitat for wildlife of national or regional significance, or may provide unique habitat or a critical link in habitat conditions for federal or state listed and candidate threatened, endangered, and sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EVALUATION OF THE PAST SITUATION

Populations. Archeological surveys along the Snake River in Hells Canyon identified 33 wildlife species associated with late-Holocene Native American camps and houses (Reid et al. 1991). Species not previously recorded include

the Great Basin pocket mouse and fisher. Also of interest is the recording of gray wolf and red fox from this region. Chalfant (1974) reported the principal game species of the Nez Perce Indians was the deer. The most abundant wintering grounds were the Snake River Valley and its tributary canyons. Deer would be driven into the box canyons to be hunted. Elk, black and grizzly bear, mountain sheep, fish, and waterfowl were other principal game species locally hunted.

EVALUATION OF THE PRESENT SITUATION

Populations. The area designated as Hells Canyon NRA supports approximately 360 wildlife species. The Wild and Scenic river corridor supports many of these wildlife species, some of which are regionally or nationally important. A variety of passerines, such as swallows, buntings, and waxwings; elk, deer, black bears, cougar, golden eagles and other raptors, otters, rattlesnakes, chukar and gray partridges are common in the corridor. A population of cliff nesting Canadian geese are present year round. Cliff nesting is rare and is seen in few areas.

Rocky Mountain big horn sheep have been reestablished in the Snake River Canyon. A herd of approximately 75 animals range from Hells Canyon Dam to the Washington border. One herd that ranges above Cherry Creek provides especially popular viewing for recreationists on the river. Mountain goats are also present and can be viewed while within the designated wild section.

Federally Listed or Candidates for Listing. A number of less common species found within the corridor are state, Forest Service, or federally listed as endangered, threatened, sensitive or rare.

The vulnerable tailed frog is likely to be found within the cold, fast flowing tributary streams of the Snake River (Nussbaum et al. 1983). Surveys for this species are ongoing. Estimates of populations are not available.

The Snake River is a spring/fall migration corridor for many species of waterfowl. During migration periods, sensitive species such as the common loon, long-billed curlew, or black tern can be seen as individuals or in small numbers (Stephens and Sturts 1991).

Thirty-one birds of prey inhabit the Wallowa-Snake Province and migration or juvenile dispersal may bring individuals of these species into the corridor. Eighteen species can be found during the breeding season or wintering in the corridor. The endangered peregrine falcon nested in the cliffs and bluffs above the Snake River prior to 1950. Since 1987 the Peregrine Fund, Idaho Fish and Game, Oregon Department of Fish and Wildlife, and the USDA Forest Service have cooperated to successfully release 62 young peregrine falcons in the canyon. Although observations have been limited, individuals or pairs have been sighted from the river. The threatened bald eagle winters along the river and can be seen foraging and roosting during the winter months. Estimates of populations within the corridor range from 59 to 138 birds depending on the month, weather, and year (Issacs et al. 1992). The sensitive northern pygmy owl resides year-round on the river. Little is known about this species and population estimates have not been published.

Four species of sensitive woodpeckers can be found in the coniferous stands within the corridor, pileated, Lewis', whiteheaded, and threetoed. Throughout their range, pileated and Lewis' woodpecker populations are declining due to fire suppression, competition, and decreased numbers of large trees. The presence of large trees within the corridor and adjacent wilderness provides habitat for these woodpeckers and the secondary cavity nesters that rely on their excavations. The vulnerable western bluebird is one secondary cavity nester found within the corridor. Sensitive passerines that use the corridor as a migration route include pygmy nuthatches and loggerheaded shrikes. Breeding habitat is present for the sensitive yellow-billed cuckoo though nesting has not yet been confirmed. The sensitive mountain quail is seen within tributary stream riparian areas. Population surveys have not been con-

ducted for this species within the Snake River canyon.

Hibernaculum and maternity colonies of Townsend's big-eared bats are present in the corridor. Monitoring indicates there are an estimated 250-350 big-eared bats in the corridor (Perkins and Schommer 1993). Suitable habitat for the palid bat exists in ponderosa pine ecotypes (Verts and Carroway 1984) but this species has not been found in the corridor to date.

Historically, gray wolves, grizzly bears, fishers, and lynx inhabited the canyon (Reid et al. 1991). Wolverines have been sighted on both the Oregon and Idaho side of the river (ONHDB). Recent unconfirmed sightings of grizzlies and wolves have been reported from above the Snake River corridor.

Habitat. The area within the Wild and Scenic corridor includes a number of habitat types. They range from rock bluffs and talus slopes, to bunchgrass communities and fingers of Douglas-fir and ponderosa pine that reach down from the canyon rim. Riparian vegetation, including hackberry and other deciduous trees is found in draw bottoms and along stream channels (McKern 1976). Many species of birds use these areas for nesting and feeding. The riparian vegetation provides excellent cover for virtually all wildlife species and is used disproportionately more than any other type of habitat by wildlife (Thomas et al 1979).

Bunchgrass plant communities are no longer present on the bars and benches since the settlement of the Snake River corridor by Euro-Americans. Livestock grazing and farming have resulted in the introduction of non-native grasses, forbs, shrubs and trees. To a lesser extent, fire suppression has altered the vegetation patterns in the corridor. Developed mine shafts have increased the roosting habitat for Townsend's big-eared bats. Human recreation alters habitat in some areas of the corridor. The ruggedness of the steep slopes provides buffers and isolates wildlife from some human activity.

FINDING

The number and diversity of wildlife species that inhabit the wild and scenic corridor of the Snake River establishes its importance as wildlife habitat. The area incorporates significant migration, wintering, and year-round habitat for numerous wildlife species and provides opportunities for human interactions with these creatures. Wildlife and wildlife habitat are outstandingly remarkable values of the Snake River Wild and Scenic corridor.

FISHERIES

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING

Fish values may be judged on the relative merits of either fish populations, habitat, or Native American cultural use - or a combination of these river-related conditions. Consideration shall be given for potential as well as existing values.

Populations. The river is internationally, nationally, or regionally an important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or federal or state listed threatened, endangered, and sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Habitat. The river provides or has the potential to provide exceptionally high quality habitat for fish species indigenous to the region. Of particular significance is habitat for wild stocks and/or federal or state listed or candidate threatened, endangered, and sensitive species. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

EVALUATION OF THE PRESENT SITUATION

Populations. The Snake River supports populations of fish species that are regionally and nationally important. Anadromous fish include

Snake River spring, summer, and fall chinook salmon which are federally listed as threatened, sockeye salmon which are federally listed as endangered, and summer steelhead trout which are listed as sensitive on the Forest Service Pacific Northwest Region sensitive species list. Healthy populations of white sturgeon, which are no longer considered anadromous above Bonneville Dam, exist within the Snake River corridor as separate populations between dams. The Pacific lamprey, a lesser known species is a native anadromous fish with declining populations. Little attention has been directed to the management or research on Snake River stocks. The American shad is an introduced, non-native anadromous fish which has spread rapidly along the Pacific coast. This species is currently establishing a sharply increasing breeding population above Lower Granite Dam within the Snake River system. Reservoirs provide ideal spawning and rearing habitat for shad, and it is likely that current population trends will continue into the foreseeable future.

A conservative estimate of total chinook produced from the Snake River basin prior to 1850, based on the amount of habitat available, was 1.4 million fish (Northwest Power Planning Council, 1986; Corps, 1992a). By the mid-1900s, the historic abundance of Snake River spring and summer chinook had been reduced by 95%. In the past 30 to 40 years the abundance decreased another tenfold. Current populations are 0.5 percent of historic levels (Matthews and Waples, 1991; Corps, 1992a).

Historic fall chinook runs for the Snake River are not known, but were probably a large part of the total chinook run. Estimated average escapement went from 72,000 fish in the years 1938-1949, down to 29,000 fish during the 1950's (Waples et al, 1991; Corps, 1992b). By 1964 to 1968, average counts over Ice Harbor Dam were 13,000 fish. Escapement ranged from 200-400 fish from 1983 to 1989, with a sharp decline to 78 fish in 1990 (Waples et al. 1991; Corps, 1992b).

The historic run size of sockeye salmon from the Snake River was estimated to be 150,000 fish (NPPC, 1986; Corps, 1992b). Sockeye salmon migrate through the lower Snake River corridor to the mouth of the Salmon River and then move up the Salmon. Much of the original rearing and spawning habitat is inaccessible and potential production has been greatly reduced. The only remaining spawning and rearing area for Snake River sockeye is Redfish Lake, located at the headwaters of the Salmon River in the Stanley Basin, Idaho. Potential production of Redfish Lake has been estimated at 1,500 spawning adults (Chapman et al., 1991; Corps 1991a). The actual returns of sockeye destined for Redfish Lake have been less than 1,000 fish since 1970 and less than 100 since 1981 (Chapman et al, 1991; Corps, 1991a). Escapement averaged less than 20 fish from 1985 to 1988. Only two fish returned in 1989 and none in 1990. In 1991 four sockeye returned to Redfish Lake.

Summer steelhead are also an important anadromous fish species in the Snake River system. Escapement numbers are unknown prior to the construction of the four lower Snake River dams. The total escapement (native and hatchery) is currently estimated at 114,800. Under present hatchery plans, native stock are expected to be used for hatchery supplementation programs. This plan recommends maintaining stock integrity of native fish as much as possible (Herrig, D., 1991).

The Pacific lamprey, a lesser understood anadromous fish species once ranged widely throughout the Columbia/Snake River system. These fish have played an important ecological role in these rivers, although their populations are believed to be in a state of significant decline. Lamprey have also played a significant role in Native American cultures, as the migrating adults were, and to some extent remain an important food source. Lamprey were also used for trade, ceremonial and medicinal purposes. Construction of dams, degradation of water quality and spawning and rearing habitat within the mainstem and tributary streams has led to the decline of their numbers (Broderick, 1993).

White sturgeon, the largest of the anadromous fish in the western Pacific, exist in healthy numbers. This slow-growing species is restricted by the upper and lower dams and generally no

longer migrates above Bonneville Dam (Corps, 1991b). Historic over-fishing by commercial and sport fishermen has led to regulations allowing only a catch and release fishery. The current population is stable.

Other dominant native species include bull trout, northern squawfish, redside shiner, mountain whitefish, chiselmouth, bridgelip sucker, and largescale sucker, as well as channel catfish and small mouth bass.

Three species of molluscs have been reported in the Snake River. The California floater is a candidate for listing under the Endangered Species Act. The species is a freshwater mussel found in the middle Snake River. The short face lanx and the Columbia pebblesnail are also candidates for listing under the Endangered Species Act (Neitzel and Frest, 1990; Corps, 1992b).

Habitat. The riverine habitat and flows of the Snake River are controlled by Hells Canyon Dam and have changed significantly since settlement. The dam does not provide for fish passage and is a barrier to upstream and downstream migration of fish.

The water quality of the Wild and Scenic Snake River is considered poor, primarily because of irrigation and grazing area nonpoint sources above Hells Canyon Dam. Water is characterized by high loading of nutrients, suspended sediment, and bacteria. Water temperatures are elevated. It is likely that organic residuals from pesticides and herbicides are present. Water quality improves downstream of the confluence with the Salmon River.

The Snake River is an important migration corridor, providing access to several high quality tributaries used by salmon and steelhead, despite the poor quality of the main stem of the river. There are five major spawning and rearing tributaries to the Snake: the Clearwater, Grande Ronde, Salmon, Tucannon, and Imnaha rivers.

Adult spring and summer chinook salmon migrate through the Snake River corridor to the streams where they were hatched, then hold in deep pools until they spawn in August and September (Chapman et al, 1991; Corps, 1992b). Spring and summer chinook are not known to spawn in the reservoir area of the river.

The current known spawning range of the Snake River fall chinook is limited to approximately 103 miles of the Snake River's main stem (from Hells Canyon Dam to the Lower Granite reservoir) and the lower reaches of its major tributaries including the Imnaha, Grande Ronde, Clearwater, and Tucannon rivers. Some deep-water spawning may occur below the tailrace of the lower Snake River dams (Waples et al, 1991; Corps, 1992a).

A majority of migrating adult sockeye salmon pass through the Snake River corridor to the Salmon River to spawn in Redfish Lake in October (Chapman et al, 1991; Corps, 1992a). Juveniles rear in the lake one to two years before migrating seaward through the Salmon and Snake rivers.

White sturgeon reside in the deep pools with sandy bottoms (Nigro, 1990; Corps, 1992b) and complete their life cycle without migrating to the sea. Juveniles rear in calm water after settling to the deep bottoms as a larval form.

The molluscs previously mentioned, typically prefer relatively unpolluted, cold, and well-oxygenated rivers that have permanent flow and a cobble-boulder substrate (Neitzel and Frest, 1990). Although these conditions are not "typical" throughout the middle reach of the river, these molluscs have been found within the Hells Canyon section of the Snake River.

FINDING

The Snake River supports several stocks of anadromous fish, including spring, summer, and fall chinook salmon, sockeye salmon, and summer steelhead trout, as well as several other resident species of native fish. Spring, summer, and fall chinook are federally listed as threatened, sockeye salmon are federally listed as endangered, and steelhead trout are listed as sensitive on the Forest Service Pacific Northwest Region sensitive species list. The white

sturgeon, a fascinating and unique species, is a resident of the Snake River corridor and has been proposed for protective listing.

These diverse fish stocks are important internationally, nationally, and regionally for their sport fishing, commercial, historic values, and contribution to the river ecology. The Snake River anadromous fisheries are important as producers for high seas commercial fish harvest. Nationally and regionally the Snake River is known for its abundant, unique, and diverse sport fishery.

The protection of the diverse Snake River aquatic resources is important to the continued existence of these important species. Fisheries is an outstandingly remarkable value of the Wild and Scenic Snake River.

HISTORIC AND PREHISTORIC CULTURAL RESOURCES

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING (Historic)

The river or area within the river corridor contains a site(s) or feature(s) associated with a significant event, an important person, or a cultural activity of the past that was rare, unusual or one-of-a-kind in the region. A historic site(s) and/or feature(s) in most cases is 50 years old or older. Of particular significance are sites or features listed in, or are eligible for inclusion in, the National Register of Historic Places.

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING (Prehistoric)

The river or area within the river corridor contains a site(s) where there is evidence of occupation or use by Native Americans. Sites must be rare, one-of-a-kind, have unusual characteristics or exceptional human interest value(s). Sites may have national or regional importance for interpreting prehistory; may be rare and represent an area where a culture or cultural period was first identified and described; may have been used concurrently by two or more cultural groups; or may have been used by cultural groups for rare or sacred purposes. Of particular significance are sites or features listed or eligible for inclusion in the National Register of Historic Places.

EVALUATION OF THE PRESENT SITUATION

In the preamble of the HCNRA Act (PL 94-199), archaeological and historical cultural resources are afforded premier standing within the structure of the legislation. The wild and scenic river corridor contains one of the richest accumulations of riverine archaeological resources in western North America. This is largely because of the canyon's extreme isolation and the fact that the HCNRA was spared further hydroelectric development.

To date, 711 prehistoric sites and 152 historic sites have been recorded within the canyon (USDA, Forest Service, Cultural Resource Inventory, 1977-1978; Leen, 1990 and 1991). In 1983, a National Register district was established within Hells Canyon. The National Register of Historic Places lists 550 prehistoric and 152 historic sites within the corridor (Torgeson, 1982). The district boundaries correspond to those of the wild and scenic river corridor. The Hells Canyon Archaeological District is one of the largest districts in the National Forest System.

Prehistoric site types represented include 144 pithouse village sites, 368 rock shelters and 199 rock art sites. Historic site types include the remnants of subsistence homesteads, mining sites, shipwrecks, and steamboat landings.

The archaeological research potential of the river corridor alone is unlimited and has been the basis of numerous professional publications, MA theses and PhD. dissertations (Reid, 1991). Archaeological research continues in Hells Canyon today.

FINDING

The historic and prehistoric cultural resources within the wild and scenic river corridor represent an outstandingly remarkable value.

TRADITIONAL USE, CULTURAL

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING (Traditional Use)

The river or area within the river corridor contains regionally unique location(s) of importance to Indian tribes (religious activities, fishing, hunting, and gathering). Locations may have unusual characteristics or exceptional cultural value being integral to continued pursuit of such activities. Locations may have been associated with treaty rights on ceded lands or activities unprotected by treaty on ceded lands to traditional territories outside ceded lands.

EVALUATION OF THE PRESENT SITUATION

Following the forced removal of the Nez Perce Indians from the Hells Canyon area by the U. S. Army in 1877, there has been little if any Native American activity within the canyon. Hells Canyon does lie within the boundaries of the reservation established by the 1855 treaty, but was later excluded when the current Nez Perce reservation was created in 1863.

The traditional use which does exist within the HCNRA tends to focus along the Imnaha River, a Native American fishery, and in upland areas where hunting of big game occurs. There are currently no documented traditional use sites within the wild and scenic river corridor.

FINDING

Traditional use is not an outstandingly remarkable value.

VEGETATION/BOTANICAL

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING

The river or area within the river corridor contains nationally or regionally important populations of indigenous plant species. Of particular significance are species considered to be unique or populations of federally-listed or candidate threatened and endangered species. When analyzing vegetation, additional factors such as diversity of species, number of plant communities, and cultural importance of plants may be considered.

EVALUATION OF THE PRESENT SITUATION

Northeast Oregon and adjacent Idaho have a diverse array of plant life. This diversity is due, in part, to the variety of terrain found over relatively short distances and the region's position between the Cascade Range, northern Rocky Mountains and Great Basin. This convergence of species from three geographic provinces results in great diversity as well as a number of endemics (i.e., species found only within a restricted area). The Snake River canyon and its major tributaries have long been of interest to botanists, both professional and amateur. A relatively warm climate as well as the physical barriers to migration has resulted in a very high number of rare or endemic plant species, particularly at the lowest elevations.

This report compiles information derived from a number of documented plant surveys (Johnson 1977, Johnson 1978, Meinke 1978, Moseley 1989, Moseley 1991, Moseley 1992) conducted within the Snake River Canyon as well as the records of the Idaho Conservation Data Center (ICDC), Oregon Natural Heritage Program (ONHP) and U.S. Fish and Wildlife Service. Species on the Northern, Intermountain, and Pacific Northwest Regions' sensitive lists are considered as well as those plants which may be too common to be considered sensitive but nonetheless are restricted to the Snake River canyon and therefore unique.

The following species have been documented to occur within the area covered by this report or are highly suspected of occurring.

FEDERALLY LISTED OR CANDIDATES FOR LISTING

Currently the only plant species found on National Forest System lands in the Northern and Pacific Northwest Regions and federally listed as endangered is MacFarlane's four-o'clock.

Described and classified in 1936, the four-o'clock is named in honor of riverboat pilot Ed MacFarlane who pointed out the showy plant to botanists. The species is restricted to the Snake River canyon and its major tributaries. Of the sixteen colonies known to exist, 50% occur within the corridor. The Forest Service is presently working in cooperation with U. S. Fish and Wildlife, Oregon Department of Agriculture, Idaho Department of Fish and Game, Boise State University, Utah State University and the Plant Conservation Center to locate additional colonies, monitor known sites, and meet the requirements of the recovery plan.

The Snake River goldenweed occurs in the southern portion of the Snake River canyon and its tributaries in Baker and Malheur counties (Oregon) and Washington County (Idaho). Populations of this species are presently known to occur just south of the corridor. Suitable habitat does occur in the southern portion of the wild and scenic river.

Stalk-leaved monkey-flowers are restricted to the Snake River canyon in Wallowa County and adjacent Idaho. Habitat is generally rock cliffs which are wet in the spring and early summer.

The Washington monkey-flower ranges from central Oregon and Washington east to northern Idaho. The two populations occur within the Snake River canyon at an elevation of 4,400 to 4,800 feet. Populations elsewhere are found as low as 2,100 feet; and therefore, the potential exists for this species to occur within the river corridor. Habitat consists of small vernal seeps along fracture zones.

Hazel's prickly-phlox is a local endemic of the Snake and Imnaha river canyons in Oregon and adjacent Idaho. It grows at elevations below 1500 feet.

FOREST SERVICE SENSITIVE SPECIES

The range for the salmon-flowered lomatium is thought to be along the Snake and Clearwater rivers of southeast Washington, northeast Oregon and west-central Idaho (Hitchcock 1973). At this time salmon-flowered lomatium is assumed to be extirpated from Oregon.

Gold-fern is widely distributed in western North America from Vancouver Island to Baja California and east to southwestern Utah and southwestern New Mexico. In the Pacific Northwest it mainly occurs west of the Cascade crest but is disjunct in southeast Washington and in Idaho County, Idaho. The Idaho population consists of about 25 plants within the river corridor.

Bartonberry, restricted to low elevations within the Snake River canyon, occurs in riparian communities adjacent to small- or medium-sized streams. Substrate is metavolcanic rock or limestone.

Fee's lipfern grows on limestone cliffs and outcrops at elevations below 3,000 feet. It is found in California, Washington, and Idaho as well as Wallowa County, Oregon. It is considered peripheral or disjunct in Oregon and threatened or endangered within the state but more common and stable elsewhere.

Geyer's onion grows on moist ledges associated with mosses at 1,000 to 2,000 feet in elevation. It is found in Idaho and Nevada as well as Wallowa County, Oregon.

The canyon also supports a number of species which are restricted in range but locally common. Included are:

Rollins' desert-parsley, Snake River canyon desert-parsley, Kirtley's nemophila, Snake River phlox, wax current, whorled penstemon, rough stickseed, large-flowered tonella, and Snake River canyon milkvetch.

FINDING

The Snake River canyon contains populations of MacFarlane's four-o'clock, the only plant species listed as endangered by the U. S. Fish and Wildlife Service which occurs on National Forest System Lands in Oregon and Idaho. In addition, four species which are candidates for listing also occur in the canyon. Ten species are considered Forest Service sensitive and a total of

nineteen are either rare or endemic to the canyon. Few locations in the Pacific Northwest, or western North America, equal the Snake River canyon in the concentration and number of rare or endemic plant species. The vegetation/ botanical resource of the Wild and Scenic Snake River is an outstandingly remarkable value.

ECOLOGICAL

CRITERIA FOR OUTSTANDINGLY REMARKABLE RATING

While no specific evaluation guidelines have been developed for the ecological resource, an assessment is being provided because its value is consistent with similar river-related values.

EVALUATION OF PRESENT CONDITION

The north-trending Snake River canyon, between the mountainous uplifts of the Seven Devils in Idaho and the Wallowa Mountains in Oregon, provides a deep fissure with specialized plant communities as a result of unique microclimates. The surrounding canyon ridgetops and adjacent plateau are generally at elevations of 3,000 to 5,500 feet. Here vegetation is influenced by a temperate continental climate where warm summers and moderately severe winters prevail. However, at the lower elevations in the canyon lands (800 to 3,000 feet) hot summers provide a drought and mild winters permit the occurrence of plants and plant communities which would otherwise find the overall climate of the region too severe for their growth.

The Snake River corridor is that narrow environmental band which is influenced by the fluvial trough and adjacent uplands where temperatures are moderated. This microenvironment provides for communities of plant species which are found only in the deepest canyon recesses. Examples of these are as follows (Johnson and Simon, 1987):

Snake River greenbush forms communities with bluebunch wheatgrass on steep slopes. Here, underlying fissures in metabasaltic rocks permit the shrubs to acquire needed water for sustaining the plant in an otherwise hot, dry setting.

Netleaf hackberry communities are found on colluvial toeslopes, river bars and along streams with bluebunch wheatgrass at the edge of riparian vegetation zones. Other sites are on hot, dry exposures where the tree can tap available water in outcrop fissures deep below the surface. Often seepage lines on river terraces are defined by hackberry occupation, where moisture is sufficient to maintain the tree.

Sand dropseed communities occur on sandy river terraces and alluvial bars below 2,000 feet elevation. The river and its major tributaries, the Grande Ronde and the Imnaha, directly influence the capability of the corridor to support these communities by providing specialized land forms which are conducive to their growth and maintenance.

White alder occurs as a major riparian community dominant only in the riverine vegetation adjacent to the Snake River and its tributaries. The species is especially prolific on gravel bars and terraces along the larger watercourses of the deep canyons.

Were it not for the deeply dissected canyons of the Snake and its tributaries, the above examples of plant communities would not exist in the landscape of this region. Most of these species are found more predominantly in the warmer latitudes of the western United States. Thus the Snake River corridor provides a unique set of environmental conditions conducive to the northward extension of a more southern flora.

Because Snake River canyon is characterized by a wide range of breeding habitats and microhabitats, and is a migration corridor, diverse populations of animals are permanently or seasonally found here. Although many plant and animal populations are considered healthy, approximately 120 species are documented or listed under the Endangered Species Act, Regional Foresters Sensitive Species Lists (Regions 1,

4, and 6), State Sensitive Species List (Oregon and Idaho), and conservation data centers as species of concern. Many of the declines in these populations are attributed to human activities, primarily outside of the river canyon. Historic range and farming practices have contributed to habitat alterations, most notably non-native plant introductions.

FINDING

Ecologic values inherent in the scenic, geologic, fisheries, and wildlife resources indicate the uniqueness and importance of the river corridor environment. Snake River communities are receiving protection and a special interest designation through the inclusion of certain sites in the Research Natural Area system. Its special environment fosters unusual and specific relationships in the flora and fauna of the corridor and make ecological aspects of the corridor an outstandingly remarkable value.

DESCRIPTION OF SOCIAL AND ECONOMIC CONDITIONS

Changes in levels or recreation use will directly affect the major social and economic characteristics of a broad geographic area. The Hells Canyon National Recreation Area Final Environmental Impact Statement, pages 54-65 and pages 77-78, gives a general description of the main social and cultural characteristics of the area. Pages 65-78 discuss major economic activities. A broader description of the affected areas can be found in the Forest Plan and associated documents (Reference the analysis file).

SOCIAL ENVIRONMENT

The corridor has a rich history of human occupation and use. Native Americans hunted, fished, gathered berries and fruit in the upper reaches of the canyon, and established permanent winter villages along the river.

More recently the corridor has provided access to mining and ranching operations. The use of motorized watercraft on the river started with steamboats serving the mining industry, and later, homesteaders. Today visitors come for recreational purposes in ever-increasing numbers and occasionally disagree on how access should be attained. Scoping at public meetings revealed opinions on use levels for watercraft ranging from totally unregulated for all users to complete elimination of all water access.

Since implementation of the CMP in 1982, floatboat use during the primary season is limited to five daily overnight launches (three private and two commercial) in the wild river section, with a maximum party size of 30 people in the wild and scenic river sections. There are no launch or party size limits in the secondary season. Private powerboat use is not limited. Commercial powerboat use is limited to a maximum of two permittees who provide services downstream from Hells Canyon Dam. Regulations allow additional commercial powerboat permits to a limited number of qualified applicants for service on the entire river corridor. This number is currently limited based on the number licenses issued by the State of Idaho. (Revised CMP, 1983)

The Snake River is one of the few national wild and scenic rivers where powerboating is a major recreational pursuit. Forest Service reports show motorized river traffic has grown tremendously in the past decade and currently accounts for about two-thirds of the people who visit during the primary season. Powerboat users represent 90% of the total use during the secondary season--primarily for steelhead fishing and big game hunting (Cole, 1989).

Class IV and V rapids draw rafters, kayakers, and canoeists who do not always know they will encounter motorized rivercraft on a river known for its wild and scenic values and remote ruggedness. Forty-three percent of the floatboaters saw "more" or "far more" powerboaters than they expected to see (Visitor Use Study, 1989, page 16). Approximately 90% of the powerboaters responding to the Visitor Use Study (1989, page 7) claimed they did not float in the canyon, and approximately 90% of the floatboaters said they did not powerboat in the canyon during the two-year period prior to a 1988-1989 survey.

However, Forest Service use records indicate some floatboaters do use motors for power to travel through the river's slower sections and work with or hire powerboaters to transport personnel and/or equipment (Cole, 1989).

Some floatboaters complain about engine noise, the size of the powerboats, close and/or numerous encounters, wakes, and speed. Some powerboaters complain about floatboaters' use of inappropriate social behavior, blocking river channels, and blocking launch and take-out ramps (Cole, 1989). About 78% of surveyed visitors felt the presence of powerboats on the river was not a major problem and about 85% felt noise from powerboats was not a major problem (Visitor Use Study, 1989, page 22). Recreationists are generally satisfied with the amount and mix of activity on the river, but also feel a need to regulate use to maintain the quality of the experience.

Camp space is limited. Sediment entrapment behind upstream dams diminishes the natural replenishment of the sand beaches preferred by most campers. Conflicts are becoming more common, especially between groups with different social values, as recreation use in the river corridor increases. Most people favor assignment of campsites, but private powerboaters are not as supportive as other river users; 35% said they would not accept such an action (Visitor Use Study, 1989, page 30).

Limited, confined facilities for launching watercraft can create conflicts if launch parties are not patient and courteous during high use periods. Most people support assigning launch times during the primary season (Visitor Use Study, 1989, page 30).

Aircraft landings are restricted to the Big Bar strip in the wild river, except for certain permitted ranching activities (CMP, page 27). Aircraft use is allowed at Dug Bar, Salmon Bar, and Pittsburg Landing in the scenic section. Aircraft use is infrequent, especially during the primary season. Almost 30% of the river users have no opinion regarding aircraft restrictions (Visitor Use Study, 1989, page 34).

Despite a common concern for the outstandingly remarkable values of the natural resources of the river corridor, social attitudes differ sharply regarding management of these resources. While river users may not agree upon acceptable activities and activity levels, the majority of the people who use the river do agree regulated use is necessary to preserve the qualities that make the corridor special.

ECONOMIC CONDITIONS

Specific topics addressed in this section include a definition of area impacted, area population, general employment characteristics including earnings and per capita personal income, river recreation use including economic impacts of river use by type of recreation and non-recreation use, and Hells Canyon NRA management costs.

A number of communities are economically affected by recreation use on the Wild and Scenic Snake River. Most directly affected are those communities which provide goods and services to recreationists. Boat construction (primarily powerboats) and related support industries (metal stamping and forming, engine manufacturing) are important components of the local economies of the Lewiston-Clarkston area and Grangeville, Idaho. Commercial and private powerboat and float operations generate considerable revenue and direct and indirect employment opportunities in the area.

Recreation-related travel to and from the river generates a significant amount of economic activity for communities on major access routes. Hotels, motels, restaurants, retail trade, gas stations, automotive repair businesses and food stores are affected by recreation use. The trade and service sectors, which these businesses represent, typically account for a significant portion of community and county-wide employment and income. A portion of the revenues generated from commercial use of the river by Forest Service permittees is returned to those counties which have part of their land base in Hells Canyon NRA.

AFFECTED GEOGRAPHICAL AREA

Nez Perce, Idaho, and Adams Counties are the counties in Idaho most directly affected by recreation use. The cities of Lewiston and Clarkston are a major access point and center of river recreation-related businesses. US Route 95 is the major north-south travel corridor providing access to recreation opportunities on the Idaho side of the Snake River. US Route 12 is a major east-west access route to the northern portion of the river corridor. This route provides the most divert access for the Tri-cities area (Richland, Pasco, and Kennewick) and Walla Walla in Washington and north-central Idaho and western Montana. Grangeville has a number of recreation-related businesses. Riggins is the home base of several river guides and outfitters who provide floatcraft and powerboat services. Riggins also has a small powerboat manufacturing and repair shop.

Wallowa County in Oregon contains the towns of Wallowa, Lostine, Enterprise, and Joseph, which are all on Oregon State Route 82, a major access route to the river. The towns of Richland and Halfway lie between Baker City and Oxbow Crossing, which is on the Oregon-Idaho border and leads to Hells Canyon Dam.

Asotin County in Washington contains the city of Clarkston, which has a variety of river recreation-related businesses.

POPULATION

Population growth, primarily through in-migration in the short and intermediate terms, may expand the potential user base. Population growth or decline could significantly affect recreation use levels, not only in counties adjacent to the river but also in outlying areas which have traditionally been a source of river users, such as Spokane, Portland, Missoula, Boise, Orofino, Walla Walla, and the Tri-cities (Pasco, Kennewick, and Richland).

Table III-3 shows a comparison of population trends for potentially impacted counties and states. Nez Perce County has the largest population followed by Asotin, Baker, Idaho, Adams, and Wallowa Counties respectively. From 1980 to 1990, Asotin County had the highest growth rate, increasing by 4.6%. This was substantially below the population growth rate for Washington state (17.8%) during the same time period. All of the counties experienced slower rates of growth than their respective states. While a variety of factors contributed, continued out-migration from rural to urban areas (continuing a decades-long trend), two recessions during the 1980's, more capital intensive and less labor intensive farming and continued technological innovation in natural resource commodity production and manufacturing (requiring fewer but more skilled workers) played a significant role in explaining the discrepancy between state and county growth rates.

Comparatively speaking, county growth rates have been much higher during the period 1990-92. For example, Nez Perce County, which grew by only 1.6% during the 1980's, grew at a 4.9% rate between 1990 and 1992. Wallowa County, which actually lost population during the 1980's (-4.4% growth rate), grew at 2.9% from 1990-92.

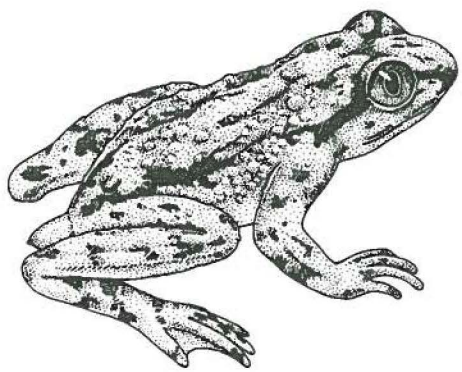


Table III-3. State and County Population, 1980-1992

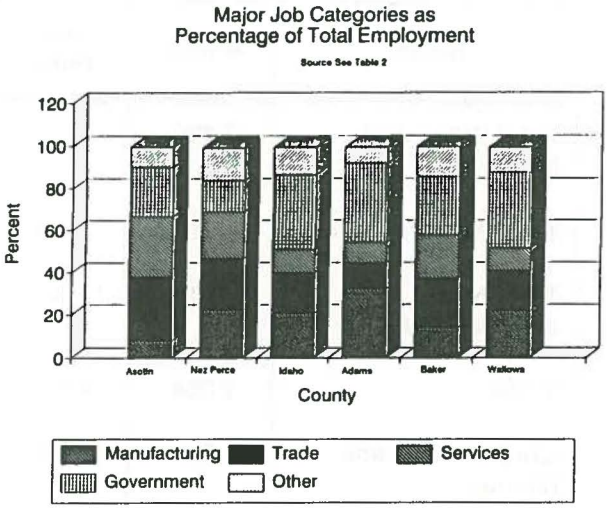
State/County	1980	1990	Percent Change 1980-90	1992	Percent Change 1990-92
Idaho	943,935	1,006,749	+6.7%	1,067,000	+6.0%
Nez Perce	33,220	33,754	+1.6%	35,402	+4.9%
Idaho	14,769	13,783	-6.7%	14,171	+2.8%
Adams	3,347	3,254	-2.8%	3,436	+5.6%
Washington	4,132,156	4,866,692	+17.8%	5,116,700	+5.1%
Asotin	16,823	17,605	+4.6%	18,000	+2.2%
Oregon	2,633,149	2,847,000	+8.1%	2,979,000	+4.6%
Wallowa	7,273	6,950	-4.4%	7,150	+2.9%
Baker	16,134	15,300	-5.2%	15,800	+3.3%
State Totals	7,709,240	8,720,441	+13.1%	9,162,700	+5.1%
County Totals	91,566	90,663	-1.0%	93,959	+3.6%

Source: Idaho: 1980 population: U.S. Department of Commerce, Bureau of the Census. **County and City Data Book 1988**. GPO, Washington DC, 1988. 1990 and 1992 population: Idaho Department of Employment, Research and Analysis Bureau. 1993. Washington: 1980 population: **County and City Data Book 1988**. 1990 and 1992 population: Washington State Employment Security Department. **Annual Demographic Information**. Service Area X. 1992. Oregon: State of Oregon, Employment Division, Department of Human Resources. **Labor Trends**. East-Central Trends. December 1992, p.5. (Note: all 1992 population figures are preliminary estimates).

Possible factors in this reversal include: (1) significant cost of living differential between the major urban centers on the West coast (Los Angeles-San Diego, San Francisco, Portland and Seattle) and the cities and towns of southeastern Washington, northeastern Oregon and north central Idaho; and (2) the perceived higher quality of life in rural areas in terms of affordable housing, good climate, comparatively low crime rates, and proximity to outdoor recreation areas (State of Oregon, 1992a,b; State of Idaho, 1993).

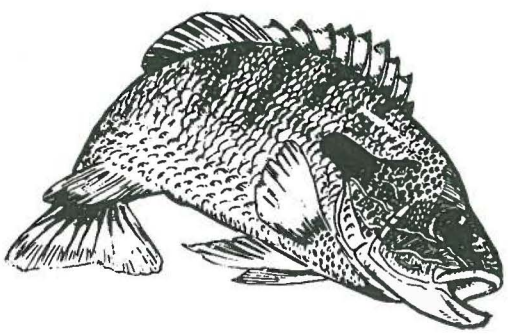
Changes in the type and magnitude of river recreation use may affect the demand for recreation-related goods and services. This in turn may affect employment levels and related earnings and personal income in areas with recreation-dependent businesses.

Figure III-1



EMPLOYMENT

Table III-4 shows county employment by major sector categories. Across counties, manufacturing jobs accounted for 23% of total wage and salary employment; non-manufacturing jobs accounted for 77%. The service sector at 23% and the government sector at 25% were the two sectors with the largest percentage of total employees. Figure III-1 compares counties with respect to major job categories. For example, the importance of manufacturing to the respective county economies can be seen by comparing the bottom segment of the bar for each county. Manufacturing represents a comparatively higher proportion of total jobs for Adams County than the other counties. The government sector represents a higher proportion of jobs in Wallowa, Adams, and Idaho Counties than other counties.



EARNINGS

The following earnings information was obtained from the Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce, 1992.

Asotin County. Total employment earnings in Asotin County increased at an average annual growth rate of 6.5% from 1980 to 1990. The gross increase from 1980-to 1990 was 88.1%. In 1990, the largest sectors in terms of employment earnings were: (1) services, which accounted for 27.4% of total earnings; (2) state and local government, 15.8%; and (3) retail trade, 14.7%. Of all industries that accounted for at least 5% of total earnings, the fastest growing sector was retail trade, which increased at an average annual rate of 8.2%. The slowest growing sector

Table III-4. County Employment by Major Categories[1]

	County Average[2]					
Sector	**Asotin**	**Nez Perce**	**Adams**	**Idaho**	**Baker**	**Wallowa**
Total Wage and Salary[3]	3,490	17,114	911	3,909	4,720	2,293
Total Manufacturing	271	3,808	295	811	660	503
Total Non-manufacturing	3,218	13,307	616	3,098	4,067	1,787
Trade	1,054	4,247	115	764	1,113	447
Construction and Mining	261	649	0	204	170	90
Transportation and Public Utilities	60	940	31	158	280	90
Finance, Insurance, Real Estate	116	944	28	764	230	93
Services	991	3,860	88	429	963	247
Government	838	2,607	344	1,400	1,313	823

[1] Sources: Asotin County: Employment and Payrolls in Washington State by County and Industry. 1989, 1990, 1991 editions. Washington State Employment Security Department; Nez Perce, Adams, Idaho Counties: Basic Economic Data for Idaho 1991, 1990, 1985-90 editions. State of Idaho Department of Employment; Baker and Wallowa Counties: State of Oregon, Employment Division, Department of Human Resources. Area Office, La Grande, OR.

[2] 1989-91 for Asotin County; 1989-91 for Nez Perce, Idaho and Adams Counties; 1990-92 for Baker and Wallowa Counties.

[3] Non-agricultural wage and salary employment only.

was farming, which grew at an average annual rate of 5.4% (Regional Economic Information System, Bureau Of Economic Analysis, U.S. Department of Commerce, 1992).

Nez Perce County. Total employment earnings in Nez Perce County increased at an average annual growth rate of 5.0% between 1980-1990. The gross increase from 1980 to 1990 was 62.8%. In 1990, the largest sectors in terms of employment earnings were: (1) services, accounting for 21.1% of total earnings; (2) nondurable goods manufacturing, 17.2%; and (3) durable goods manufacturing, 13.1%. The fastest growing industry from 1980 to 1990 was services, which grew at an average annual rate of 8.2%. The slowest growing sector was durable goods manufacturing which increased at an average annual rate of 0.3% during the same time period.

Idaho County. Total employment earnings in Idaho County increased at an average annual rate of 4.3% between 1980 and 1990. The gross increase during the period was 52.2%. The largest industries in 1990 in terms of employment earnings were: (1) durable goods manufacturing, which accounted for 22.2% of earnings; (2) farming, 17.0%; and services, 13.4%. The transportation and public utilities sector was the fastest growing industry among those accounting for at least 5% of employment earnings. It increased 8.2%. The slowest growing sector was durable goods manufacturing, which increased 0.8% during the same time period.

Adams County. Total employment earnings in Adams County increased at an average annual rate of 4.1% from 1980 to 1990. The gross increase from 1980 to 1990 was 48.9%. In 1990, the largest industries in terms of employment earnings were: (1) durable goods manufacturing, 40%; (2) federal civilian government, 12.6%; and (3) farming, 12.5%. The fastest growing sector was services, increasing at an average annual rate of 10%. Durable goods manufacturing was the slowest growing sector, increasing at an average annual rate of 5%.

Wallowa County. Total employment earnings in Wallowa County increased at an average annual rate of 5.8% from 1980 to 1990. The gross increase from 1980 to 1990 was 75.2%. The largest employment earnings sectors in 1990 were: (1) farming, 27.3%; (2) durable goods manufacturing, 20%; (3) and state and local government, 12.4%. The fastest growing sector in 1990 was federal civilian government, which grew at an average annual rate of 12.5% during 1980-90. The slowest growing sector was retail trade, which grew at an average annual rate of 2.5% during 1980-90.

Baker County. Total employment earnings in Baker County increased 53.8% from 1980 to 1990. The average annual growth rate was 4.4%. In terms of employment earnings, the largest sectors were: (1) services, 17.5%; (2) Farming, 16.3%; (3) state and local government, 12.7%; and (4) durable goods manufacturing, 12.3%. The fastest growing sector was services, which increased at an average annual rate of 6.8%. The slowest growing sector was retail trade, which grew at an annual rate of 3.4%.

PER CAPITA PERSONAL INCOME

Changes in personal income may affect the demand for river recreation, which in turn may affect river recreation-dependent businesses. Table III-5 shows a comparison of per capita personal income across counties (information obtained from Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce. 1992). For the counties as a whole, per capita personal income increased 66.8% from 1980 to 1990. Adjusting for inflation, per capita income increased 7.8% during the same time period. It is interesting to note that during the same time period, national consumer debt (not including housing mortgages) rose by 126.8% or 42.6% when adjusted for inflation to 1990 dollars (Economic Report of the President, February 1992. Table B-73, p. 384.). To the extent that consumer debt characteristics in the impact area are similar to national trends, it is apparent

Table III-5. Per Capita Personal Income, 1980-90

County	1980	1990	Percent increase (nominal dollars)	Percent increase, adjusted for inflation (1990 $)
Asotin	$9,235	$15,422	67.0%	8.0%
Nez Perce	$9,425	$16,268	72.6%	8.6%
Idaho	$7,849	$13,510	72.1%	8.3%
Adams	$8,894	$14,680	65.1%	3.8%
Wallowa	$9,653	$17,461	80.9%	13.8%
Baker	$8,975	$14,670	63.5%	2.8%
County Average	**$9,005**	**$15,335**	**70.3%**	**7.1%**

Source: Asotin, Nez Perce, Idaho and Adams Counties: Regional Economic Information System. U.S. Dept. of Commerce, Bureau of the Census. 1992; Wallowa and Baker Counties: State of Oregon, Employment Division, Department of Human Resources. La Grande Area Office, La Grande, OR.

that at least a part of the motivation behind the rapid increase in debt is to offset the relatively small gains in income during the 1980's. If real increases in income are slow throughout the 1990's and people are willing to continue carrying high levels of debt, the effect of changes in personal income on area recreation use may be minimal. If people decide to lower their household debt levels and real personal income growth is similar to the 1980's, both the magnitude and type of recreation use in Hells Canyon NRA may be affected, other things remaining constant.

RIVER RECREATION USE

In-river recreation uses up to the late 1970's are discussed in the Hells Canyon National Recreation Area Final Environmental Impact Statement, pages 82-96. Besides boating, other recreational uses such as hiking, camping, fishing, wildlife viewing and bird watching are enjoyed by visitors.

The use of data from 1982 to 1991 allows for the consideration of fluctuations in various factors which may affect river use (water levels, fish populations, weather, and economic recessions or expansions) over a ten year period.

Figure III-2 shows the total annual number of people using the river for powerboating and floating, both commercially and privately, during the regulated season. Since 1984, powerboat and float use of the river has increased substantially. The number of floatboaters has been fairly constant since 1986, showing a 9.1% increase between 1986 and 1991. This compares with an overall increase of 80.5% between 1982 and 1991. Powerboat use has increased much faster than float use in terms of annual number of users. Between 1986 and 1991, powerboat use has increased 100.7%. From 1982 to 1991, the increase was 136.2% (Snake River Visitor Use Report. 1986, 1988-91, 1989-1992).

Figure III-2

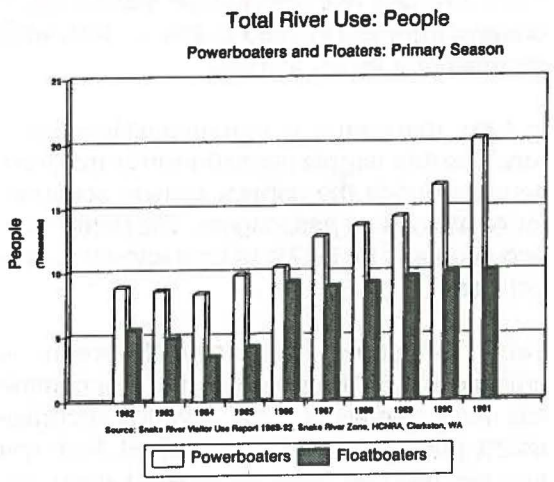


Figure III-3

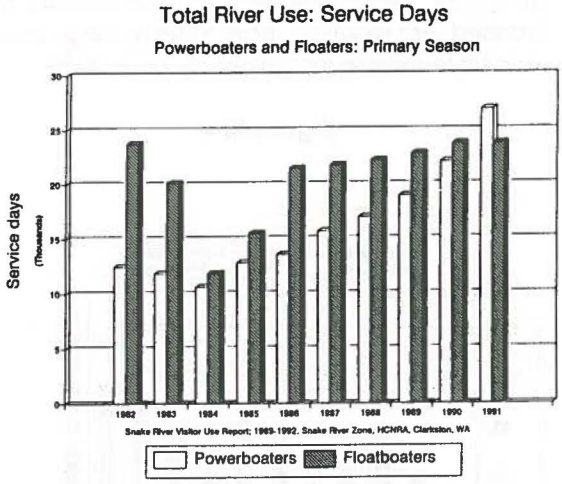
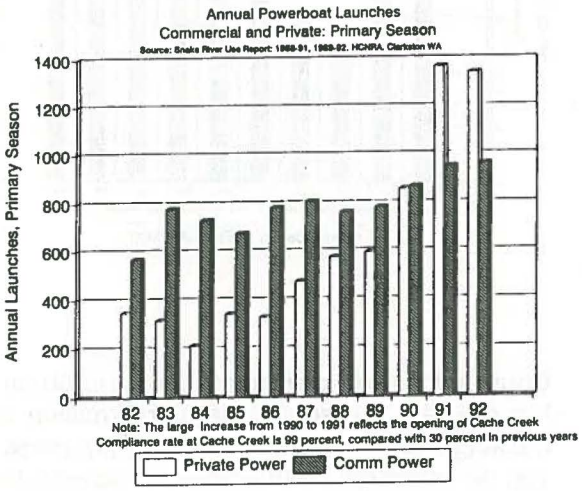


Figure III-3 shows total river use during the primary season in terms of service days for both commercial and private powerboaters and floatboaters. A service day is defined as one person spending one day on the river (Snake River Visitor Use Report, 1986, page 1). Service days for both powerboaters and floatboaters have shown a steady increase since 1984. Service days for float users showed a rapid increase from 1985 to 1986 and then a more moderate rate of increase from 1986 to 1991. The increase from 1985 to 1986 was 40.0% compared with an increase of 10.7% from 1986 to 1991. Powerboat user service days showed an increase of 158.5% between 1984 and 1991 (Snake River Visitor Use Report. 1986, 1988-91, 1989-1992).

Considering river use in terms of both total number of users and service days, information on the length of time spent on the river per person can be estimated. With respect to powerboaters, the average length of time spent on the river (in terms of service days) has been relatively constant from 1982 to 1991. From 1982 to 1991, the highest average service days per person was 1.4 (1982, 1983 and 1990), the lowest 1.2 (1987 and 1988). This has not been the case for floatboaters, however. In 1982, the average service day per person was 4.3. This average steadily declined until 1988 when it reached 2.4. It has since remained constant up to 1991. Figure III-4 shows annual commercial and private powerboat launches for the primary season from 1982 to 1992. Private powerboat launches were fairly constant from 1982 to 1986, with the exception of 1984. Private launches increased rapidly from 1986 to 1988, and then decreased from 1988 to 1990. The large increase from 1990 to 1991 is primarily the result of the staffing of the Cache Creek administrative site during the primary season.

Commercial launches have been fairly constant from 1982 to 1990. From 1990 to 1992, commercial powerboat launches increased by 29%. Since 1985, commercial powerboat launches during the secondary season have steadily increased. For example, from 1986 to 1992, commercial launches increased by over 200%.

Figure III-4



Recreation-related river use generates substantial revenue for commercial operators of powerboat and float tours. Commercial operators are required to obtain permits from the Forest Service at a cost of 3% of total annual gross revenue (HCNRA, Clarkston, WA). Tables III-6 and III-7 show revenue and use data for commercial powerboat and float operators, respectively.

In 1991, there were 19 commercial powerboat permittees. Four permittees accounted for over 75% of commercial powerboat passengers during the primary season. In 1991, the primary season accounted for 72.8% of total annual commercial powerboat passengers.

Table III-6 shows nominal (unadjusted for inflation) revenue increased steadily from 1985 to 1991 for commercial powerboat operators. Gross nominal revenue increased 196.3% from 1985 to 1991. Adjusting for inflation (1992 dollars), the increase was 138.7%. This represents an average annual real increase (from 1985 figures) of 23.1$. Average real revenue per passenger increased from $68 in 1985 to $84 in 1991. Average real revenue per service day increased from $59 in 1985 to $74 in 1991, which represents a 25.4% increase.

In 1991, there were 17 commercial float operators. The four largest permittees in terms of passengers during the primary season accounted for 45.4% of total passengers. The primary season accounts for 88.7% of total annual passenger use.

Table III-7 shows that nominal revenue increased 103.8% from 1985 to 1991 for commercial float operators. Real revenue increased 64.2% during the same time period. Real revenue per trip has been decreasing since 1985 because average passengers per trip has been declining steadily. In 1985, passengers per trip averaged 12.3; in 1991 the average was 7.9. However, real revenue per passenger and service day has increased from 1985 to 1991. Real revenue per passenger has increased from $303 in 1985 to $391 in 1991, a 29% increase. Real revenue per service day has also increased. In 1985, revenue per service day was $113. In 1991, revenue was $127, an increase of 12.4%.

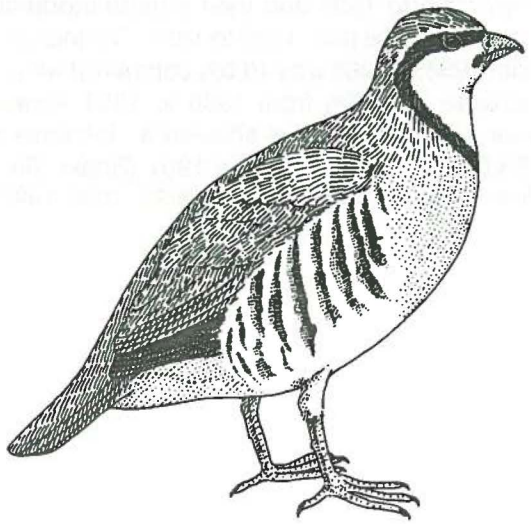


Table III-6. Gross Revenue from FS Permittee Commercial Powerboat Use

Year	Nominal $	1992 $	Passengers	1992$/ Passenger	Service Days	1992$/ Service Day
1985	539,329	687,644	10,082	$68	11,568	$59
1986	651,894	807,044	11,149	$72	13,158	$61
1987	920,693	1,107,594	13,404	$82	15,590	$71
1988	970,118	1,125,337	15,716	$72	18,091	$62
1989	1,182,819	1,314,112	16,184	$81	19,442	$68
1990	1,522,235	1,624,225	20,287	$80	23,936	$68
1991	1,598,133	1,641,283	19,497	$84	22,169	$74

Source: Snake River Visitor Use Report: 1986, 1987, 1988-1991. Snake River Zone, Hells Canyon National Recreation Area, Clarkston, WA.

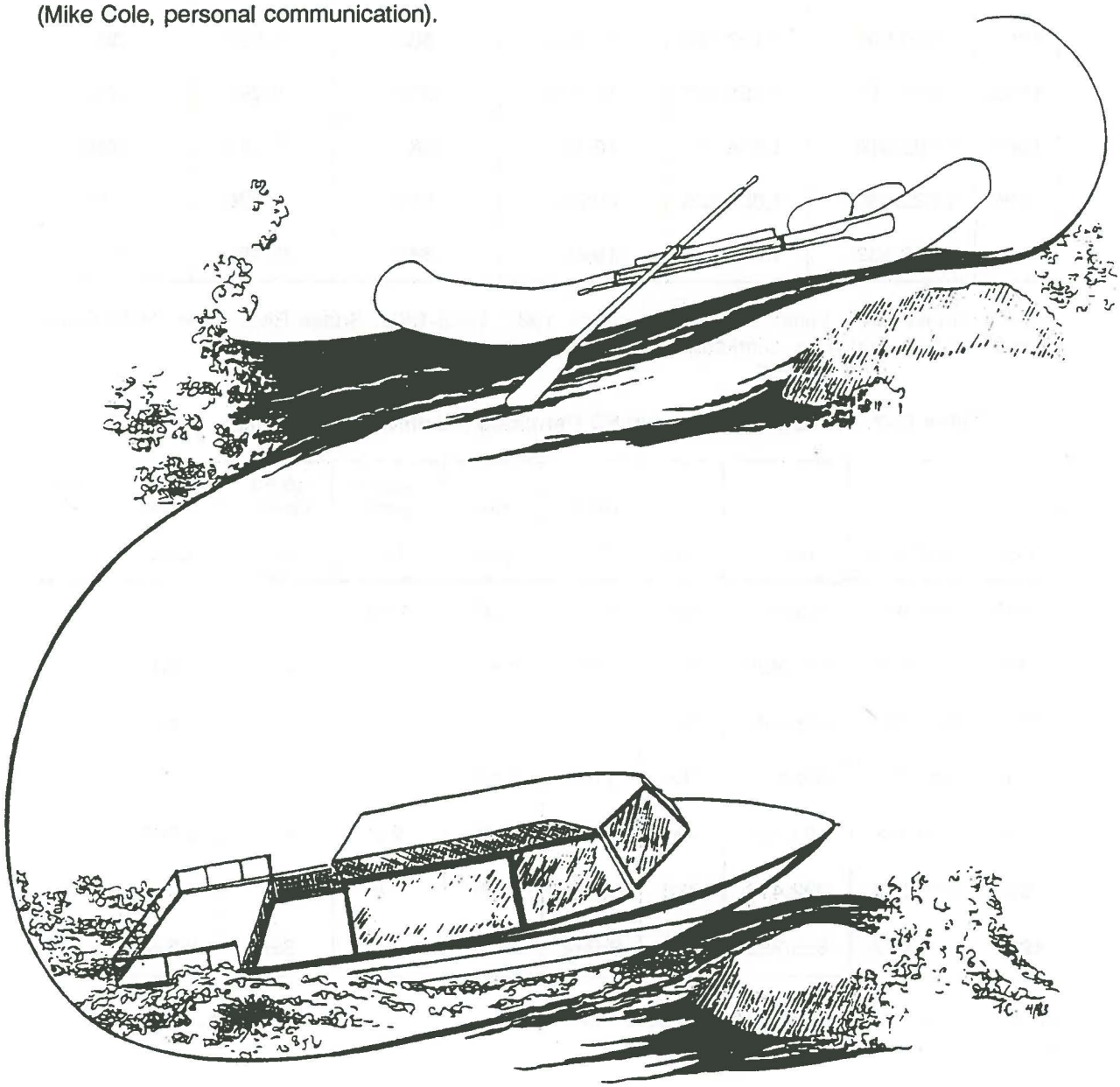
Table III-7. Gross Revenue from FS Permittee Commercial Float Use, 1985-1991

Year	Nominal $	1992 $	Trips	1992$/ Trip	Pas-sen-gers	Passen-gers/ Trip	1992$/ Passen-ger	Service Days	1992$/ Service Day
1985	394,448	502,921	135	3,725	1,660	12.3	303	4,463	113
1986	453,819	561,828	132	4,256	1,325	10.0	424	5,138	109
1987	521,190	626,992	166	3,777	1,579	9.5	397	5,592	112
1988	582,787	676,033	188	3,596	1,758	9.4	385	6,122	110
1989	714,158	793,430	206	3,852	1,921	9.3	413	6,709	118
1990	677,055	722,418	250	2,890	1,896	7.6	381	6,002	120
1991	804,072	825,782	267	3,092	2,113	7.9	391	6,524	127

Source: Snake River Visitor Use Report, 1986, 1987, 1988-91. Snake River Zone, Hells Canyon National Recreation Area, Clarkston, WA.

RIVER CORRIDOR MANAGEMENT COSTS

Administrative and management costs for the river corridor for fiscal year 1993 is $456,360. These costs are the actual funds necessary to implement current management direction for the river corridor, and may not be reflective of actual expenditures or budget allocation levels (Mike Cole, personal communication).



CHAPTER IV
ENVIRONMENTAL CONSEQUENCES

The organization of this chapter is similar to Chapter III. The description of each outstandingly remarkable value (ORV) and the social and economic conditions provide the foundation for the effects discussed in the chapter. Each affected resource is introduced with key indicators, models, technical assumptions, analysis boundary, and analysis intensity. Direct, indirect, and cumulative effects are disclosed. This chapter consists of the following sections:

- Introduction
- Environmental Consequences on the Scenic Resources Outstandingly Remarkable Value
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INTRODUCTION

Environmental consequences are the estimated physical, biological, social, and economic effects that would result from implementing each of the alternatives described in Chapter II. This chapter describes the scientific and analytic basis for the comparison of alternatives. The effects of the components of the environment that result from the implementation of alternatives are discussed in terms of their direct and indirect effects as well as the cumulative effect(s) that could potentially occur in the reasonably foreseeable future through the remainder of the planning decade.

DIRECT AND INDIRECT EFFECTS

Direct and indirect effects occur in the corridor from management activities. They are also the consequences expected to occur from implementation of each alternative. Direct effects are caused by the action and occur at the time and place. Indirect effects are caused by the action

and occur later in time or are farther removed in distance.

CUMULATIVE EFFECTS

The cumulative effects are the sum of the direct and indirect effects of each alternative, as well as the effects of activities anticipated in the reasonably foreseeable future.

The analysis and disclosure of cumulative effects is required by the NEPA. It provides a method by which the ID Team, the public, and the responsible official can assess the spatial and timing characteristics and effects of activities that could occur with implementation of the selected alternative. For purposes of this analysis the reasonably foreseeable future is defined as a planning decade through the year 2003.

ENVIRONMENTAL CONSEQUENCES ON THE SCENIC RESOURCES OUTSTANDINGLY REMARKABLE VALUE

Although the potential environmental consequences of the proposed action and its alternatives on the scenic ORV were not identified as a significant issue, they are presented here to ensure full disclosure of potential environmental effects and the protection and enhancement of the ORV.

The Wild and Scenic Rivers Act sets the framework for displaying the value of the scenery through the following definitions:

- Wild river areas - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive, and waters unpolluted. These represent vestiges of primitive America.

- Scenic river areas - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive, and shorelines largely undeveloped, but accessible in places by roads.

Based on the great contrasts of landform, vegetation, color, climate and sound the scenery within the river corridor is an outstandingly remarkable value (reference Chapter III). The landscape elements of landform, vegetation, water, color, and related factors that result in notable or exemplary visual features and/or attractions were used in this determination. When analyzing scenic values, additional factors such as seasonal changes in vegetation, amount of cultural change, and the length of time sights are generally viewed may be considered.

The Visitor Use Study displays the importance of scenery and the primitive setting of the river corridor as viewed by river users (reference analysis file). When asked a series of questions on why they visited the Wild and Scenic Snake River, users responded as follows:

- "view the scenery" 97% agreed/ strongly agreed
- "be close to nature" 89% agreed/ strongly agreed
- "find some solitude" 71% agreed/ strongly agreed
- "enjoy peace and quiet" 86% agreed/ strongly agreed

The ROS naturalness/visual quality category for river management (reference analysis file) and VQO are used to analyze environmental consequences of the alternatives on the scenery of the river corridor. The river corridor defines the analysis boundary for the direct and indirect effects, while the canyon defines the analysis boundary for the cumulative effects.

Reference Tables III-1 and III-2 for the presentation of the naturalness/visual quality objectives for management areas.

In the following description of effects to the scenic ORV, the desired setting for the ROS naturalness characterization is used to identify management emphasis and does not imply the prohibition of permitted types of use simply because the activity or facility is not included in the classification title/description. As stated in Chapter II, Mitigation Common to All Action Alternatives, a scenery survey would be conducted by the end of calendar year 1996 to establish

the baseline for naturalness and visual quality settings.

DIRECT AND INDIRECT EFFECTS - WILD SECTION

ALTERNATIVE A

In Alternative A the wild section would continue to be managed as semi-primitive, motorized with a largely undisturbed natural environment and little evidence of human development. Navigation markers, picnic tables, and all structures would be left in place, although the pit toilets at all river campsites would be removed. Navigation markers, picnic tables, and structures would continue to moderately detract from the intended primitive characteristics and the perception of remoteness.

The administrative sites at Kirkwood Historic Ranch and Hells Canyon Dam would continue to be managed in accordance with the site development plans to reduce impacts to the desired primitive characteristics and perception of remoteness of the semi-primitive motorized ROS category.

ALTERNATIVE B

In Alternative B the wild section would be managed as semi-primitive, motorized with a largely undisturbed natural environment and little evidence of human development. Picnic tables and all structures would be left in place; navigation markers and pit toilets at all river campsites, the metal shed upstream from Pittsburg administrative site, and the silos at Kirkwood Historic Ranch would be removed. Picnic tables would slightly detract from maintaining the intended ROS setting for the general corridor of the wild section.

The administrative sites at Hells Canyon Creek, Sheep Creek, Sand Creek, Temperance Creek and Kirkwood Historic Ranch would continue to be managed in accordance with their individual site development plans to achieve the ROS settings addressed in Table III-1. These administrative sites would create patches within the general river corridor that would be inconsistent with the desired naturalness setting that provides an unmodified natural environment with no evidence of human development. Although encounters at these administrative sites would not be consistent with the desired naturalness setting, the encounter would generally be of low extensity and low to moderate intensity.

Historic structures within the general corridor would be managed to maintain subtle alterations to the landscape, with natural characteristics remaining dominant and with moderate evidence of human development.

Scientific monitoring stations would continue to be operated with the objective of maintaining a largely undisturbed natural environment with little evidence of human development.

ALTERNATIVE C

In Alternative C the wild section would be managed as semi-primitive, motorized with a largely undisturbed natural environment and little evidence of human development. Navigation markers would be left in place. Picnic tables (except at Kirkwood) and pit toilets at all river campsites, the metal shed upstream from Pittsburg administrative site, and the metal silos at the Kirkwood Historic Ranch would be removed. The presence of navigation markers would slightly detract from maintaining the intended ROS setting for the general corridor in the wild section.

The administrative sites at Hells Canyon Creek, Sheep Creek, Sand Creek, Temperance Creek, and Kirkwood Historic Ranch would continue to be managed in accordance with their individual site development plans to achieve the ROS settings addressed in Table III-1. These administrative sites would create patches within the general river corridor that would be inconsistent with the desired naturalness setting that provides an unmodified natural environment with no evidence of human development. Although encounters at these administrative sites would not be consistent with the desired naturalness setting, the encounter would generally be of low extensity and low to moderate intensity.

Historic structures within the general corridor would be managed to maintain subtle alterations to the landscape, with natural character-

istics remaining dominant and with moderate evidence of human development.

Scientific monitoring stations would continue to be operated with the objective of maintaining a largely undisturbed natural environment with little evidence of human development.

ALTERNATIVE D

Alternative D would manage the wild section from Hells Canyon Dam to Kirkwood Historic Ranch as semi-primitive, non-motorized during the primary season and as semi-primitive, motorized during the secondary season, both with the objective of providing a largely undisturbed natural environment with little evidence of human development. The Kirkwood to Pittsburg section would be managed as semi-primitive, motorized, year-round. Navigation markers, picnic tables (except at Kirkwood) and pit toilets at all river campsites, the metal shed upstream from Pittsburg administrative site, and the metal silos at Kirkwood Historic Ranch would be removed. Removal of these facilities would benefit the maintenance of the intended ROS setting for the general corridor in the wild section.

The administrative sites at Hells Canyon Creek, Sheep Creek, Sand Creek, Temperance Creek, and Kirkwood Historic Ranch would continue to be managed in accordance with their individual site development plans to achieve the ROS settings addressed in Table III-1. These administrative sites would create patches within the general river corridor that would be inconsistent with the desired naturalness setting that provides an unmodified natural environment with no evidence of human development. Although encounters at these administrative sites would not be consistent with the desired naturalness setting, the encounter would generally be of low extensity and low to moderate intensity.

Historic structures within the general corridor would be managed to maintain subtle alterations to the landscape, with natural characteristics remaining dominant and with moderate evidence of human development.

Scientific monitoring stations would continue to be operated with the objective of maintaining a largely undisturbed natural environment with little evidence of human development.

ALTERNATIVE E

In Alternative E the wild section from Hells Canyon Dam to Kirkwood Historic Ranch would be managed as both semi-primitive, non-motorized and semi-primitive, motorized but on alternating weeks during the primary season; and as semi-primitive, motorized during the secondary season. The Kirkwood to Pittsburg section would be managed as semi-primitive, motorized, year-round. All of these would provide for the objective of a largely undisturbed natural environment with little evidence of human development. Navigation markers would be removed in the Hells Canyon Dam to Kirkwood portion but left in the Kirkwood to Pittsburg section. Picnic tables (except at Kirkwood) and pit toilets at all river campsites, the metal shed upstream from Pittsburg administrative site, and the metal silos at Kirkwood Historic Ranch would be removed. Removal of these facilities would benefit the maintenance of the intended ROS setting for the general river corridor from Hells Canyon Dam to Kirkwood. The maintenance of navigation markers in the Kirkwood to Pittsburg section would slightly detract from maintaining the intended ROS setting in the general corridor of this section.

The administrative sites at Hells Canyon Creek, Sheep Creek, Sand Creek, Temperance Creek, and Kirkwood Historic Ranch would continue to be managed in accordance with their individual site development plans to achieve the ROS settings addressed in Table III-1. These administrative sites would create patches within the general river corridor that would be inconsistent with the desired naturalness setting that provides an unmodified natural environment with no evidence of human development. Although encounters at these administrative sites would not be consistent with the desired naturalness setting, the encounter would generally be of low extensity and low to moderate intensity.

Historic structures within the general corridor would be managed to maintain subtle alterations to the landscape, with natural characteristics remaining dominant and with moderate evidence of human development.

Scientific monitoring stations would continue to be operated with the objective of maintaining a largely undisturbed natural environment with little evidence of human development.

ALTERNATIVE F

In Alternative F the entire wild section would be managed as primitive, year-round with the objective of providing an unmodified natural environment and no evidence of human development. Navigation markers, picnic tables (including Kirkwood) and pit toilets at all river campsites, the metal shed upstream from Pittsburg administrative site, and the metal silos at Kirkwood Historic Ranch would be removed. Removal of these facilities would enhance the intended ROS setting in the general corridor of the wild section.

The administrative sites at Hells Canyon Creek, Sheep Creek, Sand Creek, Temperance Creek, and Kirkwood Historic Ranch would continue to be managed in accordance with their individual site development plans to achieve the ROS settings addressed in Table III-1. These administrative sites would create patches within the general river corridor that would be inconsistent with the desired naturalness setting that provides an unmodified natural environment with no evidence of human development. Although encounters at these administrative sites would not be consistent with the desired naturalness setting, the encounter would generally be of low extensity and low to moderate intensity.

The Kirkwood Historic Ranch interpretative services would be eliminated and the historic structures maintained for structural maintenance and would be managed as a historic structure as noted below.

Historic structures within the general corridor would be managed to maintain subtle alterations to the landscape, with natural characteristics remaining dominant and with moderate evidence of human development.

Scientific monitoring stations would continue to be operated with the objective of maintaining a largely undisturbed natural environment with little evidence of human development.

ALTERNATIVE G - PREFERRED

In Alternative G the wild section would be managed as semi-primitive, motorized through the majority of the primary season. During the non-motorized periods 21 miles of the wild section would be managed as semi-primitive, non-motorized. Both of these ROS characteristics would provide for a largely undisturbed natural environment with little evidence of human development. Navigation markers would be removed in the Hells Canyon Dam to Kirkwood portion of the river. Picnic tables (except at Kirkwood) and pit toilets at all river campsites, and the metal silos at the Kirkwood Historic Ranch would be removed to benefit the intended ROS setting for the general corridor. The presence of navigation markers in the Kirkwood Historic Ranch to Pittsburg Landing portion of the river would slightly detract from maintaining the intended ROS setting within the general corridor.

The administrative sites at Hells Canyon Creek, Sheep Creek, Sand Creek, Temperance Creek, and Kirkwood Historic Ranch would continue to be managed in accordance with their individual site development plans to achieve the ROS settings addressed in Table III-1. These administrative sites would create patches within the general river corridor that would be inconsistent with the desired naturalness setting that provides an unmodified natural environment with no evidence of human development. Although encounters at these administrative sites would not be consistent with the desired naturalness setting, the encounter would generally be of low extensity and low to moderate intensity.

Historic structures within the general corridor would be managed to maintain subtle alterations to the landscape, with natural characteristics remaining dominant and with moderate evidence of human development.

Scientific monitoring stations would continue to be operated with the objective of maintaining a largely undisturbed natural environment with little evidence of human development.

DIRECT AND INDIRECT EFFECTS - SCENIC SECTION

The scenic section would be managed as semi-primitive, motorized in Alternatives C through G, with the objective of providing a largely undisturbed natural environment with little evidence of human development. Under Alternative B, the scenic section would be managed as modified natural river with the objective of providing a modified landscape with moderate evidence of human development. Pit toilets would be removed from all river campsites as would the metal shed upstream from Pittsburg administrative site. Navigation markers and picnic tables would remain. The presence of navigation markers and picnic tables would moderately detract from the intended ROS setting within the general corridor of the scenic section, with the exception of Alternative B which would be in compliance with the modified natural river setting.

For all alternatives, the administrative sites at Pittsburg Landing (both Oregon and Idaho), Dug Bar, Copper Creek, and Cache Creek would be managed in accordance with their individual site development plans to achieve the ROS settings addressed in Table III-2, with the exception of Alternative B which would be managed pursuant to the opportunity classes presented in the LAC recommendations. These administrative sites would create patches within the general river corridor that would be inconsistent with the desired naturalness setting that provides for a largely undisturbed natural environment with little evidence of human development. Although encounters at these administrative sites would not be consistent with the desired naturalness setting, the encounter would generally be of low extensity and low to moderate intensity.

For all alternatives, the historic structures within the general corridor would be managed to ensure that alterations to the landscape are subtle, with natural characteristics remaining dominant and with moderate evidence of human development.

For all alternatives, scientific monitoring stations would continue to be operated with the objective of maintaining a largely undisturbed natural environment with little evidence of human development.

CUMULATIVE EFFECTS

The cumulative effect on any one alternative's ROS category is relative to projected use levels through the end of the planning decade.

Alternatives with unlimited use and/or high use levels would result in the highest potential for a significant effect on maintaining the intended ROS setting, or opportunity class with Alternative B, for the general river corridor (Alternatives A, B, and scenic section of Alternatives D and F). Alternatives with moderate to low levels of projected use have less potential to significantly affect maintaining the ROS setting (Alternatives E, D, C, G, and wild section of Alternative F, respectively).

VISUAL QUALITY OBJECTIVES

The VQO's of the Forest Plan and FSM 2300 state that the foreground of the wild and scenic sections would be managed as preservation and retention, respectively. The desired VQO's for administrative sites (Management Area 16) will be managed in accordance with the individual site development plans, the ROS settings presented in Tables III-1 and III-2, and the Secretary of Interior's Standards for Historic Preservation Projects, containing standards for acquisition, protection, stabilization, preservation, rehabilitation, and reconstruction (reference 36 CFR part 68). The VQO's for historic structures and scientific monitoring stations would be managed in accordance with the ROS settings presented in Tables III-1 and III-2.

The desired VQO's identified in Chapter I provide the framework to guide future planning, particularly at administrative sites which provide an anomaly for consistent visual management within the river corridor. The intent of establishing VQO's for administrative sites is to provide a framework in which the facilities could be managed to provide the desired setting, following the completion of the scenery survey addressed in Chapter II. The following table displays the desired VQO's for the river corridor:

Wild River	Desired Visual Quality Objective
General Corridor	Preservation
Hells Canyon Creek Recreation Site	Partial Retention
Sheep Creek Recreation Site	Retention
Sand Creek Administrative Site	Retention
Temperance Creek Administrative Site	Retention
Kirkwood Recreation Site	Retention
Historic Structures	Retention
Private Lands	*Consistent with 36 CFR 292 Subpart E

Scenic River	Desired Visual Quality Objective
General Corridor	Retention
Pittsburg, Idaho Recreation Site	Partial Retention
Pittsburg, Oregon Administrative Site	Partial Retention
Copper Creek Recreation Site	Partial Retention
Dug Bar Recreation Site	Partial Retention
Cache Creek Administrative Site	Partial Retention
Historic Structures	Retention
Private Lands	*Consistent with 36 CFR 292 Subpart E

*Visual quality objectives would be consistent with the final public land use regulations.

DIRECT AND INDIRECT EFFECTS

Alternatives B, C, D, E, F and G would benefit the foreground scenic quality of preservation in the wild and scenic section, by dismantling and removing the metal shed upstream from the Pittsburg administrative site and the metal silos at Kirkwood Historic Ranch.

Removal of pit toilets in all of the alternatives would enhance the foreground scenic quality for the preservation and retention objectives in the wild and scenic sections, respectively.

Removal of all or portions of the navigation markers in the wild section (Alternatives B, D, E, F and G) would enhance the foreground scenic quality for the section's preservation objectives.

Removal of picnic tables at river campsites in the wild section (Alternatives C, D, E, F and G) would enhance the foreground scenic quality for the section's preservation objectives.

Alternatives with high levels of recreation use (Alternatives A, B, and scenic sections of D and F) have the highest potential to decrease foreground scenic quality due to possible damage to the landscape caused by dispersed camping. Vegetation would be trampled or uprooted, user-built trails would appear, and litter would detract from the natural scenery.

Alternatives D and F have a moderate potential to decrease foreground scenic quality in the wild section. Elimination of motorized access and use may force foot and horse traffic onto the paralleling trail system and increase the impacts of dispersed camping.

Smaller party sizes and fewer craft per party would likely lessen vegetative effects on foreground scenery which results from dispersed camping (Alternatives C, D, E, F and G).

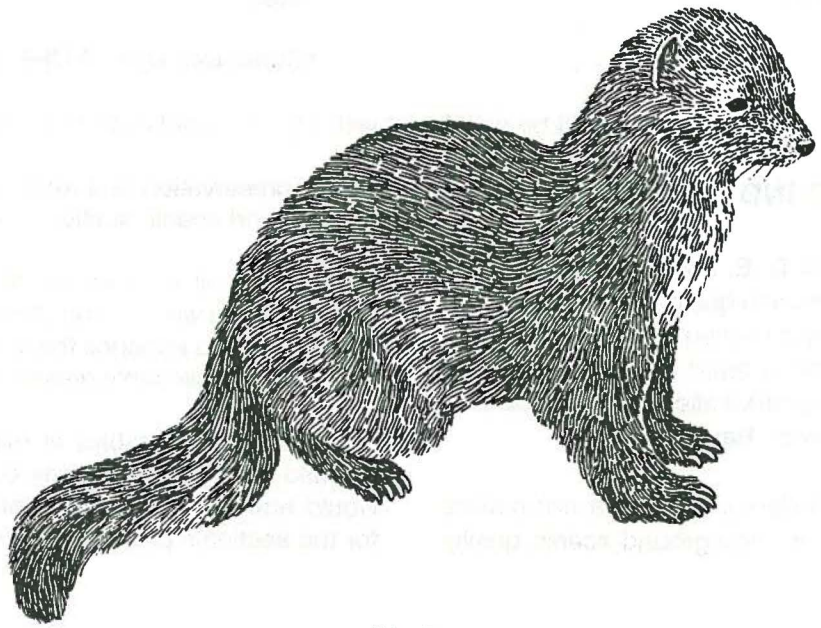
CUMULATIVE EFFECTS

The cumulative effect of any one alternative on the visual quality objectives is relative to projected use levels.

Alternatives with unlimited recreation use and/or high recreation use levels would have the highest potential to adversely effect the foreground visual quality objectives (Alternatives A, B, and scenic section of Alternatives D and F). Alternatives with moderate to low levels of projected use would be less likely to create adverse effects on the visual quality objectives (Alternatives E, G, and C, respectively). Continued non-motorized access and use in Alternatives D and F could increase foot and horse traffic which may damage vegetation and result in effects to foreground scenery.

The cumulative effect of land management activities on the scenic ORV outside the foreground for the wild and scenic sections would be mitigated by those activities following the VQO's of the Forest Plan and FSM 2300 for middle ground and background scenery as viewed from the river corridor (retention and partial retention VQO's, respectively).

The cumulative effect of private inholding land management within the wild and scenic sections cannot be fully determined until the action occurs. The scenic easement on the Hitchcock inholding (Idaho side), requires the owner to maintain the property within established management objectives related to the outstanding qualities of the scenic section. Management of private lands without scenic easements would be pursuant to the private land use regulations 36 CFR 292 Subpart E.



ENVIRONMENTAL CONSEQUENCES TO THE RECREATION RESOURCES OUTSTANDINGLY REMARKABLE VALUE AND RELATED SOCIAL CONDITIONS

This section addresses the significant issue of managing for the intended recreation experience. It includes an analysis of the effects on the social environment and interactions described in Chapter III.

The major activities most closely associated with recreation use on the Snake River are whitewater powerboating and floating. Access by aircraft and the land-based activities associated with trail use are also an attraction. In conjunction with these primary activities, recreationists enjoy camping, fishing, sightseeing, hunting, photography, and nature study.

Floatcraft and powerboat river users view the Snake River as providing a high degree of challenge and risk associated with a whitewater boating experience. The sections of the river used by individual boaters define the degree of challenge and risk desired. Floaters and powerboaters are very protective of maintaining their continued access to the river.

While recreationists often share common reasons for coming to the Snake River, their expectations of how to best achieve their desired experience can be quite different. For instance, powerboaters can have a backcountry experience with significantly higher numbers of encounters with other users and associated sights and sounds than floaters can without adversely affecting their experience. Comparing the similarity in powerboat users' reasons for taking a river trip with those of floatcraft users reveals a common desire to be close to nature, experience solitude, and find peace and quiet (reference Visitor Use Study).

Differences in powerboaters and floaters expectations are summarized as follows:

- Floaters: A significant number of people on float trips say their expectations and desired experiences on a river trip are not met on a river with high levels of powerboat use. Some non-motorized users indicate that any motorized use in a wild and scenic river setting adversely affects their recreation experience. The current mix of motorized and non-motorized activities on the Snake River is an entirely new concept to many non-motorized users whose expectations were formed on wild rivers with little or no motorized use.

  Powerboaters: Motorized river users desire a backcountry experience closely associated with the following elements:

  - Access, including the degree of challenge and risk involved in traveling through the area based upon individual level of skill.

  - Recreational attributes of the area, including the setting and outdoor activities available.

  - Social interaction with other users while on the river as a result of ease of mobility.

  The importance of these elements is reflected in noticeable fluctuations in motorized river traffic during extremes of low or high water, environmental changes that affect productivity of the sport fisheries, and social conflict with floaters who are often seeking a different experience which is more removed from sights, sounds, and encounters with other groups.

Meeting the recreational needs of motorized users must be balanced with the need to provide non-motorized users with the type of backcountry experience they desire.

In the following description of effects to the recreation ORV and the social environment, each alternative is analyzed in comparison to Alternative A, the no action alternative, which represents the existing situation.

For the purposes of this analysis, the area of analysis for direct, indirect, and cumulative effects includes the river corridor, the road and trail systems that provide access to the river corridor, the Lower Salmon River, and the

Snake River downstream from the HCNRA boundary to the mouth of the Grande Ronde River.

Effects were analyzed based upon each alternative's capability to protect and enhance the recreation ORV by achieving the desired ROS settings as displayed in Chapter III. Effects were analyzed in the following ROS categories:

- The alternative's capability to provide the appropriate level of access.
- The alternative's capability to provide an opportunity to experience a sense of remoteness.
- The alternative's capability to provide an appropriate level of social encounters, expressed in terms of levels of use.
- The alternative's capability to provide an appropriate level of visitor management.
- The alternative's capability to provide an appropriate level of facility development and site management.

Effects were also analyzed in these additional categories:

- The alternative's capability to meet a great variety of visitor expectations by providing many different users with the opportunity to achieve their desired recreation experience. This would be expressed in terms of fairness and equity in regard to distribution and management of use.
- The alternative's capability to reduce campsite competition which would enhance a visitor's recreation experience.
- Cumulative Effects

Reference Table IV-1 for a summary of the capability of each alternative to achieve the identified ROS settings.

MANAGING THE TYPE OF ACCESS APPROPRIATE FOR THE RIVER CLASSIFICATION

In order to assure the wild or scenic classification established by Congress is not compromised by inappropriate changes in river corridor access, the Wild and Scenic Rivers Act specifies the type of access that should be provided within river corridors. In general, Section 2 (b) (1) of the Wild and Scenic Rivers Act describes wild river areas as "...**generally** inaccessible except by trail..." (emphasis added). In the same section, scenic river shorelines are described as areas that are "...**largely** primitive and...**largely** undeveloped, but accessible in places by roads" (emphasis added).

While the Wild and Scenic Rivers Act is silent on the type of on-river transportation that can be used to access any river corridor, the HCNRA Act was very specific. Section 10 (d) of the Act acknowledged that "...**motorized and non-motorized river craft...**" were both "...recognized as a valid use..." (emphasis added). Many river users fail to note that the HCNRA Act not only validated motorized use, but validated non-motorized use of the river as well. However, Section 10 (d) also allows "...for the **control of the use** and number..." of these river craft (emphasis added). As a result, valid motorized and non-motorized river craft are consistent with the law to provide a means of access throughout the wild and scenic river corridor, but their use (and numbers) can be controlled. This would be especially true if the intent of such control were to meet legal guidelines of the acts such as protection and enhancement of ORV's.

For the purposes of this analysis, the opportunity to access the river corridor using valid motorized or non-motorized river craft is considered to be consistent with management objectives common to all alternatives. Tables III-1 and III-2 describe the desired ROS access settings for the wild and scenic river corridors. ROS settings for the study river were considered to be the equivalent of those described for the scenic river. The area of river or time of year for this access may vary within each alternative but this will not affect the ROS settings of access. In addition, access was analyzed in relation to use of the land and did not consider overflights by aircraft, but did consider aircraft landings.

Access was measured subjectively in terms of high, moderate, or low potential for each alternative to meet the ROS settings for access while meeting the intent of Section 2 (b) (1) of the Wild and Scenic Rivers Act and Section 10 (d) of the HCNRA Act. A rating of high would indicate the recreation ORV could be enhanced. A rating of moderate would indicate the recreation ORV could be protected, but may not be enhanced and a rating of low would indicate either the recreation or other ORV's could be affected.

WILD SECTION - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In Alternative A, the 31.5 miles of wild river would remain essentially inaccessible except by non-motorized trail and valid motorized and non-motorized river craft with the following exceptions:

Hells Canyon Creek Recreation Site would provide access to the river corridor where a portion of the road parallels the river. However, this development would continue to be located in the only area that provides the closest and safest recreational access to the river corridor below Hells Canyon Dam. The site would not be expanded down river beyond the raft slide bay.

Vehicles used on a regular basis at specific sites would be limited to small motorized vehicles for transporting materials and supplies associated with the historic sites at Sheep Creek and Kirkwood Historic Ranch. These would be used on a limited basis between boat landings and structures only. The private inholding at Kirby Creek might use motorized equipment on site for the same purposes.

The Kirkwood Road would allow access to the river corridor in the immediate area just upstream from the ranch house, but out of site from the historic structures and the river. Visitors using the road could not gain access past the gate for use of their vehicles with the exception of physically-challenged individuals on a case-by-case basis and dependent upon the type of equipment they were traveling in.

Motorized use in association with the Temperance Creek Ranch would continue, with occasional use occurring between the boat landing and the ranch area on an existing road.

The airstrip at Big Bar, which was an existing use prior to designation of the river as wild, would remain open and Sluice Creek would remain closed. Use at Big Bar would be unlimited, but extremes of temperature in summer would place some physical limitations on access. Rotary aircraft would be restricted to landings at Big Bar only. There would be a potential for fixed wing and rotary aircraft use to increase. Floatplane landings would be allowed year-round.

Due to the potential for increased levels of aircraft use at Big Bar and the opportunity for floatplane landings to occur year-round for the duration of the plan, this alternative would have a low potential to meet the ROS settings for access as described in Table III-1 while meeting the intent of the Acts. There could be an increase in the total number of access sites along the river for the duration of the plan, primarily due to recognition of a new type of access, resulting in the opportunity for floatplane landings year-round.

ALTERNATIVE B

In Alternative B, the 31.5 miles of wild river would remain essentially inaccessible except by non-motorized trail and valid motorized and non-motorized river craft with the following exceptions:

Hells Canyon Creek Recreation Site would provide access to the river corridor where a portion of the road parallels the river. However, this development would continue to be located in the only area that provides the closest and safest recreational access to the river corridor below Hells Canyon Dam. The site would not be expanded down river beyond the raft slide bay.

Vehicles used on a regular basis at specific sites would be limited to small motorized vehicles for transporting materials and supplies associated with the historic sites at Sheep Creek and Kirkwood Historic Ranch. These would be used on a limited basis between boat landings and structures only. The private inholding at

Kirby Creek might use motorized equipment on site for the same purposes.

The Kirkwood Road would allow access to the river corridor in the immediate area just upstream from the ranch house, but out of site from the historic structures and the river. Visitors using the road could not gain access past the gate and no vehicles would be visible from the river. The road would be allowed to deteriorate naturally, with no maintenance.

Motorized use in association with the Temperance Creek Ranch would continue, with occasional use occurring between the boat landing and the ranch area on an existing road.

The airstrip at Big Bar, which was an existing use prior to designation of the river as wild, would remain open and Sluice Creek would be re-opened. Use at these airstrips would remain unlimited but monitored by self-issued permit, and limits on use would be established if levels of use indicated that wild river values were being impaired. Extremes of temperature in summer would place some physical limitations on access. Rotary aircraft would be restricted to landings at Big Bar and Sluice Creek only. There would be a potential for fixed wing and rotary aircraft use to increase as a result of opening an additional airstrip. Floatplane landings would not be allowed in the primary season but the LAC planning process provided for floatplane landings in the secondary season and the requirement for special use permits for commercial aircraft use at airstrips, with associated limits on use. Incidental use by commercial aircraft would remain unlimited.

While this alternative would manage commercial aircraft use at airstrips, it would re-open an existing airstrip year-round, allow incidental commercial aircraft landings to continue, and allow floatplane landings in the secondary season. As a result, this alternative would have a moderate potential to meet the ROS settings for access as described in Table III-1 while meeting the intent of the Acts. The number of access sites along the river could increase year-round during the duration of the plan as a result of year-round opening of Sluice Creek and recognition of a new type of access that would allow the opportunity for floatplane landings in the secondary season (although relatively low use).

ALTERNATIVE C

In Alternative C, the 31.5 miles of wild river would remain essentially inaccessible except by non-motorized trail and valid motorized and non-motorized river craft with the following exceptions:

Hells Canyon Creek Recreation Site would provide access to the river corridor where a portion of the road parallels the river. However, this development would continue to be located in the only area that provides the closest and safest recreational access to the river corridor below Hells Canyon Dam. The site would not be expanded down river beyond the raft slide bay.

Vehicles used on a regular basis at specific sites would be limited to small motorized vehicles for transporting materials and supplies associated with the historic sites at Sheep Creek and Kirkwood Historic Ranch. These would be used on a limited basis between boat landings and structures only. The private inholding at Kirby Creek might use motorized equipment on site for the same purposes.

The Kirkwood Road would allow access to the river corridor in the immediate area just upstream from the ranch house, but out of site from the historic structures and the river. Visitors using the road could not gain access past the gate for use of their vehicles with the exception of physically-challenged individuals on a case-by-case basis and dependent upon the type of equipment they were traveling in.

Motorized use in association with the Temperance Creek Ranch would continue, with occasional use occurring between the boat landing and the ranch area on an existing road.

The airstrip at Big Bar, which was an existing use prior to designation of the river as wild, would remain open and Sluice Creek would be re-opened. Use at these airstrips would remain unlimited but monitored by self-issued permit, and limits on use would be established if levels of use indicated that wild river values were be-

ing impaired. Extremes of temperature in summer would place some physical limitations on access. Rotary aircraft would be restricted to landings at Big Bar and Sluice Creek only. There would be a potential for fixed wing and rotary aircraft use to increase as a result of opening an additional airstrip. Floatplane landings would be allowed during the secondary season. Commercial use of airstrips would not be allowed.

Due to the level of skill and the limited types of private aircraft that could land at Sluice Creek, the opening of this existing airstrip in the wild river corridor would not substantially affect the level of access to the river corridor for the duration of the plan. Although floatplane landings would be allowed in the secondary season, use levels have historically been insignificant. As a result, this alternative would have a high potential to meet the ROS settings for access as described in Table III-1 while meeting the intent of the Acts. There would continue to be very few access sites along the river.

ALTERNATIVE D

In Alternative D, the 31.5 miles of wild river would remain essentially inaccessible except by non-motorized trail and valid motorized and non-motorized river craft with the following exceptions:

Hells Canyon Creek Recreation Site would provide access to the river corridor where a portion of the road parallels the river. However, this development would continue to be located in the only area that provides the closest and safest recreational access to the river corridor below Hells Canyon Dam. The site would not be expanded down river beyond the raft slide bay.

Vehicles that were used on a regular basis at specific sites would be limited to small motorized vehicles for transporting materials and supplies associated with the historic sites at Sheep Creek and Kirkwood Historic Ranch. These would be used on a limited basis between boat landings and structures only. The private inholding at Kirby Creek might use motorized equipment on site for the same purposes.

The Kirkwood Road would allow access to the river corridor in the immediate area just upstream from the ranch house, but out of site from the historic structures and the river. Visitors using the road could not gain access past the gate for use of their vehicles with the exception of physically-challenged individuals on a case-by-case basis and dependent upon the type of equipment they were traveling in.

Motorized use in association with the Temperance Creek Ranch would continue, with occasional use occurring between the boat landing and the ranch area on an existing road.

Both the airstrips at Big Bar and Sluice Creek would remain closed in the primary season, but open in the secondary season. Use at these airstrips would remain unlimited but monitored by self-issued permit, and limits on use would be established if levels of use indicated that wild river values were being impaired. Rotary aircraft would be restricted to landings at Big Bar and Sluice Creek only. There would be a potential for fixed wing and rotary aircraft use to increase as a result of opening an additional airstrip. Floatplane landings would be allowed during the secondary season. Commercial use of airstrips would not be allowed.

Due to the change in airstrip management in the river corridor, this alternative would have a high potential to meet the ROS settings for access as described in Table III-1 while meeting the intent of the Acts. This alternative would open an additional, existing airstrip, but both airstrips would be closed during the primary season. Due to the level of skill and the limited types of private aircraft that could land at Sluice Creek, the opening of this existing airstrip and allowing floatplane landings in the wild river corridor during the secondary season would not substantially affect the type of access to the river corridor for the duration of the plan. There would continue to be very few access sites along the river.

ALTERNATIVE E

In Alternative E, the 31.5 miles of wild river would remain essentially inaccessible except by non-motorized trail and valid motorized and non-

motorized river craft with the following exceptions:

Hells Canyon Creek Recreation Site would provide access to the river corridor where a portion of the road parallels the river. However, this development would continue to be located in the only area that provides the closest and safest recreational access to the river corridor below Hells Canyon Dam. The site would not be expanded down river beyond the raft slide bay.

Vehicles used on a regular basis at specific sites would be limited to small motorized vehicles for transporting materials and supplies associated with the historic sites at Sheep Creek and Kirkwood Historic Ranch. These would be used on a limited basis between boat landings and structures only. The private inholding at Kirby Creek might use motorized equipment on site for the same purposes.

The Kirkwood Road would allow access to the river corridor in the immediate area just upstream from the ranch house, but out of site from the historic structures and the river. Visitors using the road could not gain access past the gate for use of their vehicles with the exception of physically-challenged individuals on a case-by-case basis and dependent upon the type of equipment they were traveling in.

Motorized use in association with the Temperance Creek Ranch would continue, with occasional use occurring between the boat landing and the ranch area on an existing road.

Both the airstrips at Big Bar and Sluice Creek would be open year-round except during the non-motorized weeks in the primary season when they would be closed. Use at these airstrips would remain unlimited but monitored by self-issued permit, and limits on use would be established if levels of use indicated that wild river values were being impaired. Rotary aircraft would be restricted to landings at Big Bar and Sluice Creek only. There would be a potential for fixed wing and rotary aircraft use to increase as a result of opening an additional airstrip. Floatplane landings would be allowed during the secondary season only. Commercial aircraft landings would not be allowed.

Due to the change in airstrip management in the river corridor, this alternative would have a high potential to meet the ROS settings for access as described in Table III-1 while meeting the intent of the Acts. This alternative would open an additional, existing airstrip, but both airstrips would be closed during the non-motorized week of the primary season. Due to the level of skill and the limited types of private aircraft that could land at Sluice Creek, the opening of this existing airstrip and Big Bar during the secondary season and on motorized weeks in the primary season, in addition to allowing floatplane landings during the secondary season only would not substantially affect the type of access to the river corridor for the duration of the plan. There would continue to be very few access sites along the river.

ALTERNATIVE F

In Alternative F, the 31.5 miles of wild river would remain essentially inaccessible except by non-motorized trail and valid non-motorized river craft with the following exceptions:

Hells Canyon Creek Recreation Site would provide access to the river corridor where a portion of the road parallels the river. However, this development would continue to be located in the only area that provides the closest and safest recreational access to the river corridor below Hells Canyon Dam. The site would not be expanded down river beyond the raft slide bay.

Vehicles used on a regular basis at specific sites would be limited to a small motorized vehicles for transporting materials and supplies associated with the historic site at Sheep Creek. This would be used on a limited basis between boat landings and structures only. The private inholding at Kirby Creek might use motorized equipment on site for the same purposes. Since the Kirkwood Historic Ranch would not be staffed, there would be no need to have motorized equipment kept on site.

The Kirkwood Road would allow access to the river corridor in the immediate area just upstream from the ranch house, but out of site from the historic structures and the river. However, with no on-site management, there could

be the potential for unauthorized motorized access past the gate and within view of the river in the immediate area of the ranch or unauthorized motorized use of the Snake River National Recreation Trail. This unauthorized activity would be considered negligible, not a common occurrence due to the remote location and condition of the road and could be dealt with through normal law enforcement actions.

Motorized use in association with the Temperance Creek Ranch would continue, with occasional use occurring between the boat landing and the ranch area on an existing road.

Both the airstrips at Big Bar and Sluice Creek would remain closed year-round except for emergency landings. This would include landings by rotary aircraft and would result in essentially no aircraft use in the wild river corridor. The river corridor would also be closed to floatplane landings year-round.

Due to the change in airstrip management in the river corridor, this alternative would have a high potential to meet the ROS settings for access as described in Table III-1 while meeting the intent of the Wild and Scenic Rivers Act. There would continue to be very few access sites along the river corridor. This alternative meets the intent of the HCNRA Act if considered in the context that, although motorized use is not allowed in the wild river, it is allowed in the scenic section and therefore both types of valid uses are allowed within the river corridor. In this situation, the area of use is controlled.

ALTERNATIVE G

In Alternative G, the 31.5 miles of wild river would remain essentially inaccessible except by non-motorized trail and valid motorized and non-motorized river craft with the following exceptions:

Hells Canyon Creek Recreation Site would provide access to the river corridor where a portion of the road parallels the river. However, this development would continue to be located in the only area that provides the closest and safest recreational access to the river corridor below Hells Canyon Dam. The site would not be expanded down river beyond the raft slide bay.

Vehicles used on a regular basis at specific sites would be limited to small motorized vehicles for transporting materials and supplies associated with the historic sites at Sheep Creek and Kirkwood Historic Ranch. These would be used on a limited basis between boat landings and structures only. The private inholding at Kirby Creek might use motorized equipment on site for the same purposes.

The Kirkwood Road would allow access to the river corridor in the immediate vicinity of the Carter Mansion. The gate would be moved back upstream from its present location to the wild river boundary as mitigation for protection of threatened chinook habitat in Kirkwood Creek. Visitors using the road could drive their vehicles past the gate. This would prevent vehicles from fording the stream for recreational access. Any future public recreational access to the ranch would be accomplished by use of a trail that started in the vicinity of gate and would involve either bridges crossing Kirkwood Creek and/or a re-routed trail that would avoid bridge crossings if possible. Administrative use of the road between the ranch and the Carter Mansion would be restricted to the minimum amount of use necessary to support ongoing operations and maintenance.

Motorized use in association with operating the Temperance Creek Ranch for livestock grazing would continue, with occasional use occurring between the boat landing and the ranch area on an existing road. The majority of this use would generally be out of sight of the river.

The airstrip at Big Bar, which was an existing use prior to designation of the river as wild, would remain open year-round and Sluice Creek would be re-opened, but for use during the secondary season only. Use at these airstrips would remain unlimited but monitored by self-issued permit, and limits on use would be established if levels of use indicated that wild river values were being impaired. Extremes of temperature in summer would place some physical limitations on access. Rotary aircraft would be restricted to landings at Big Bar year-round and Sluice Creek during the secondary

season only. The river corridor would be closed to floatplane landings year-round.

There would be a potential for fixed wing and rotary aircraft use to increase as a result of opening an additional airstrip in the secondary season. Commercial fixed wing and rotary aircraft landings would be limited to incidental use by permit only year-round based upon historic use for landings at Big Bar only. Since the Sluice Creek airstrip has been closed for over a decade, this would preclude any commercial use of this airstrip, making it available for private recreational aircraft use only.

While an existing airstrip would be re-opened in the secondary season only, incidental commercial aircraft use would be limited by permit year-round to one airstrip in the wild river. Roaded access to Kirkwood Historic Ranch would be converted to trail use at the wild river boundary. As a result of these mitigation measures that would result in improvements in protection and enhancement of ORV's, this alternative would have a high potential to meet the ROS settings for access as described in Table III-1 while meeting the intent of the Acts. There would continue to be very few access sites along the river corridor.

SCENIC SECTION - DIRECT AND INDIRECT EFFECTS

Common to all Alternatives

In all alternatives, the 36 miles of scenic river would have shorelines that were largely primitive and undeveloped, but accessible by non-motorized trail, valid motorized and non-motorized river craft, and also accessible in places by roads as follows:

- Pittsburg Landing, Idaho
- Dug Bar, Oregon
- Cache Creek, Oregon (in Study River)
- Roads on private lands on the Idaho side at:
  - Getta Creek
  - Wolf Creek
  - Dry Creek (Hitchcock Ranch)
  - Divide Creek
  - Cave Gulch (Study River)

The road system at Pittsburg Landing would continue to provide several roaded access points to the scenic river from a road paralleling a short section of the river corridor, but generally out of view of the river. This roaded access would continue to provide the only safe public recreational access to the river corridor on the Idaho side of the Snake River, including access to developed overnight camping facilities, launch/takeout ramps for motorized and non-motorized river users, trail use, and bank fishing.

The road system in the vicinity of the Hitchcock Ranch would continue to parallel the river for a short distance and would be managed under the terms of an existing scenic easement.

The road system at Dug Bar would continue to provide several roaded access points to the scenic river corridor from a road paralleling a short section of the river, but generally out of view of the river.

The road system at Cache Creek Ranch would continue to provide administrative access to the site within the study river. The future use of the road system for public access and for use of that portion of the road paralleling the river to Coon Hollow would be determined in a separate NEPA environmental analysis.

No other roaded access points would be planned on existing public lands within the scenic river corridor. All road systems on private lands within the scenic river corridor would be monitored for any activity that might compromise the scenic river designation.

Vehicles used on a regular basis at specific sites on public land that did not include system roads would be limited to use associated with transporting materials and supplies for operations and maintenance of sites such as Pittsburg Administrative Site and Copper Creek Resort. These would be used on a limited basis between boat landings and structures only. Private lands on the Idaho side of the scenic river

might use motorized equipment on site for the same purposes. Some roads on private lands would also allow private recreational access but on a limited basis due to remoteness.

Motorized use would continue to occur in association with permitted ranching activities at Dug Bar and on private lands on the Idaho side of the river with most use occurring only occasionally in the vicinity of boat landings, ranch buildings, and private road systems.

The airstrips at Pittsburg, Dug Bar, and Salmon Bar, which were existing uses prior to designation of the river as scenic, would remain open year-round. Extremes of temperature in summer would place some physical limitations on access. The airstrip at the VanPool Ranch, which is included in the scenic easement agreement, would remain open in support of private ranching activities or for administrative use by the Forest Service. The opening or closing of the airstrip at Cache Creek would have a negligible effect on potential scenic river values in all alternatives since this location already serves as a portal for the specific purpose of managing river access.

The following exceptions are listed by Alternative:

ALTERNATIVE A

The airstrip at Cache Creek (in the study river) would remain closed year-round. Use of all open airstrips would be unlimited. The river would be open to floatplane landings year-round.

Rotary aircraft would be able to land anywhere in the scenic river corridor, including beaches. Rotary aircraft could not land in study river corridor. There would be a potential for fixed wing and rotary aircraft use to increase.

Due to the potential for unlimited rotary aircraft landings at any location in the scenic river corridor and floatplane landings year-round, this alternative would have a low potential to meet the ROS settings for access as described in Table III-2 while meeting the intent of the Acts. There could be a large increase in the number of access sites as a result of landings by rotary aircraft and floatplanes.

ALTERNATIVE B

The airstrip at Cache Creek (in the study river) would be opened year-round. Use of all open airstrips would be unlimited, but self-issued permits would be required to monitor use. If levels of use indicated that scenic river values were being impaired, limits on use would be established.

Rotary aircraft would be restricted to landing at open airstrips only. The LAC planning process provided that floatplane landings would not be allowed during the primary season, but would be allowed during the secondary season. Substantial commercial aircraft operations involving landings in the river corridor would be limited by special use permits but incidental commercial use would not be limited.

There would be a potential for increased use of the airstrips in the scenic river corridor and the opportunity for floatplane landings in the secondary season. However, there would also be some management of commercial aircraft use into the river corridor. As a result of these tradeoffs, this alternative would have a moderate potential to meet the ROS settings for access as described in Table III-2 while meeting the intent of the Acts. There could be some additional access sites along the river corridor as a result of floatplane landings.

ALTERNATIVES C, D, E and F

The airstrip at Cache Creek (in the study river) would be opened year-round. Use of all open airstrips would be unlimited, but self-issued permits would be required to monitor use. If levels of use indicated that scenic river values were being impaired, limits on use would be established.

Rotary aircraft would be restricted to landing at open airstrips only. There would be a potential for fixed wing and rotary aircraft use to increase. Floatplane landings would be permitted only

during the secondary season. Commercial use of airstrips would not be allowed year-round.

These alternatives would have a high potential to meet the ROS settings for access as described in Table III-2 while meeting the intent of the Acts. There would continue to be very few access sites along the river corridor.

ALTERNATIVE G

The airstrip at Cache Creek (in the study river) would be opened year-round. Use of all open airstrips would be unlimited, but self-issued permits would be required to monitor use. If levels of use indicated that scenic river values were being impaired, limits on use would be established.

Rotary aircraft would be restricted to landing at open airstrips only. There would be a potential for fixed wing and rotary aircraft use to increase. Floatplane landings would be prohibited year-round.

Incidental commercial aircraft landings would be limited by permit, based upon historic use. Since the Cache Creek airstrip has been closed for the entire time it has been in public ownership and was not used as a commercial airstrip while in private ownership, this would preclude any commercial use of this airstrip, making it available for private recreational aircraft use only.

Due to limits on incidental commercial aircraft landings at airstrips in the scenic river corridor, this alternative would have a high potential to meet the ROS settings for access while meeting the intent of the Acts. There would continue to be very few access sites along the river corridor.

OPPORTUNITIES TO EXPERIENCE A SENSE OF REMOTENESS

A sense of remoteness is a component of an individual's experience while recreating within a designated wild or scenic river corridor. For both types of river classifications, the feeling of remoteness, or inversely, the extent of evidence of non-historic human activity in one's surroundings, is one of the most significant factors in achieving a backcountry recreational experience.

A recreation experience in a wild river setting should provide the feeling of being remote and removed from the influences of an individual's everyday environment, from the sights and sounds of modern civilization, and require each individual or member of a group to depend on their own skills and abilities to achieve a successful outcome to their trip. There should be little or no evidence that the natural environment has or is being altered by human activities in the river corridor, except from a historical perspective.

The type of transportation used to access the area and the equipment used while in the area should not be considered in measuring the sense of remoteness. All valid watercraft used to access the area represent modern and often state-of-the-art forms of transportation used for whitewater boating. Many modern conveniences associated with camping are used on river trips. These elements represent the individuality of each person in choosing their desired recreation experience as it relates to their personal perception of remoteness. Wild rivers represent "... vestiges of primitive America..." as defined by their physical setting alone.

In a scenic river setting, while there is a lower expectation of remoteness than in a wild river setting, it is still a desirable attribute that would enhance the quality of the visitor's experience. As defined by Congress, scenic rivers provide a higher level of land-based access which would increase river use as a result of easier access to the river, making them somewhat less remote than wild rivers. However, an appropriate level of use is essential to maintain the quality of the experience, including the opportunity to experience a sense of remoteness appropriate to a scenic river corridor.

Remoteness relates to a sense of distance from a setting or location where people are surrounded by a technologically-dominated environment. A sense of remoteness occurs when an individual is no longer in familiar surroundings, feels a higher level of risk, does not have ready

access to modern conveniences, and/or is removed from other individuals or groups. It is often a subjective element that can only be quantified on a limited basis through analysis of visitor perceptions.

For the purposes of this analysis, remoteness is measured subjectively in terms of high, moderate, or low potential for each alternative to protect and enhance the visitor's sense of remoteness and achieve the desired ROS setting for remoteness in each designated river section on a year-round basis. The desired ROS setting for the wild and scenic sections of the river can be found in Tables III-1 and III-2, respectively.

A finding of moderate would indicate that the ROS setting would be maintained and the existing recreation ORV was being protected. A finding of low would indicate that the overall trend in the ROS setting would move toward the more developed end of the spectrum. A finding of high would reflect the potential for the ROS setting to trend toward the more primitive end of the spectrum, enhancing the recreation ORV.

WILD SECTION - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In Alternative A, the wild section would continue to be managed for unlimited powerboat use and limited floatboat use.

Improved launch facilities at Hells Canyon Creek and Pittsburg Landing would provide easier access for powerboaters and floatboaters even at lower river flows. Growth in private powerboating would depend upon a favorable economy for continued powerboat sales, reasonable fuel prices, favorable river flows, and productive sport fisheries. Growth in commercial powerboating would depend upon the same factors and also on the continued success of outfitters to market their trips.

While float trips would continue to be managed within the daily launch limits, use could continue to grow until the maximum number of launches and passengers per trip was reached. The average number of daily trips by commercial floaters on weekdays would increase toward six as commercial one-day trips increased. An increase in the number of jetbacks for private and commercial float trips could occur based on historic use (reference analysis file). The percentage of float trips that only used the wild river would increase based on historic trends toward shorter trips (reference analysis file). Float trips launched below Rush Creek and supported by jetboats would have unlimited potential for growth. The average number of floatcraft per party could increase dramatically, especially with the increasing popularity of inflatable kayaks, catarafts, and commercial row-your-own trips (reference analysis file).

The opportunity to experience a sense of remoteness could be expected to diminish proportionately with increased use. Even with a pro-active user education program, more people on the river would produce physical changes at campsites and along shorelines, increase litter, and diminish the feeling of being in a remote setting or being remote from modern civilization. Dependence on personal skills would be lessened since help from other groups would be more readily available. The presence of navigation markers, picnic tables, and primitive toilets at campsites would diminish the feeling of remoteness.

Over time, it would become more evident that the environment had been, and was continuing to be, altered by the presence of an increasing number of recreationists. Effects from overuse in the primary season could carry over into the secondary season. There would be a probability that the majority of river users would feel that the opportunity to experience a sense of remoteness even in a semi-primitive motorized setting would no longer be a valid ROS standard to measure or describe the river experience, especially in the months of peak use.

This alternative would have a low potential of achieving the ROS setting for remoteness as described in Table III-1. The potential magnitude of the level of use associated with this alternative would continually move this ROS setting toward the more developed end of the ROS spectrum. Over time, there would be a significant reduction in the opportunity for visi-

tors to experience solitude or isolation from the sights and sounds of others.

ALTERNATIVE B

In Alternative B the wild section would be managed with limits on all powerboating and floatboating.

Float trips would be managed within the existing daily launch allocation for private and commercial (three and two, respectively) with commercial one-day float trips included in the seasonal maximum for commercial launches. Float use could continue to grow toward maximum number of launches and maximum party size. The number of jetbacks for private and commercial trips could be expected to increase based on historic use (reference analysis file). The percentage of float trips that only used the wild river would be expected to increase based on trends toward shorter trips (reference analysis file). Float trips launched below Rush Creek and supported by jetboats would compete with float trips from Hells Canyon Creek for available launches. The average number of floatcraft per party could increase dramatically, especially with the increasing popularity of inflatable kayaks, catarafts, and commercial row-your-own trips (reference analysis file).

Two standards were originally developed from the LAC planning process for private powerboat use, a seasonal maximum number of launches and a daily maximum number of launches. However, the seasonal maximum use limit was significantly more limiting than the standard for daily maximum launches. To determine this amount, a daily average number of launches was calculated that would meet the seasonal maximum number of launches (see Appendix I). The overall result would be approximately a 10% increase in average daily use for private powerboaters.

Maximum commercial powerboat use would be limited to twice the amount of private powerboat use, an increase of approximately 50% over existing commercial use. The large increase in commercial powerboating would offset the small increase in private powerboat numbers although there would probably be some reduction in overnight private powerboat use as a result of eliminating peaks in use. Total average powerboat use would increase approximately 34% above existing use levels.

However, in order to compare alternatives and display the potential effects of maximum limitations, the daily launch limits of eight weekday and 16 weekend launches for private powerboats was also displayed. This level of use would significantly increase private powerboat use in the wild river to a maximum of 106% above existing use levels. Using these daily launch limits for private powerboaters, total average commercial and private powerboat use in the wild river could increase toward a maximum of 71% above existing use levels.

Increased use as a result of more people on the river would produce physical changes, such as damage to trees at campsites and along shorelines, increase litter, and diminish the feeling of being remote from modern civilization. Dependence on personal skills would be lessened since help from other groups would be more readily available. The presence of navigation markers and picnic tables would diminish the sense of remoteness. Over time, it would become more evident that the environment had been altered by the presence of recreationists. The sense of remoteness could be expected to diminish proportionately since overall use could experience continued growth toward maximum limits.

Effects from overuse in the primary season could carry over into the secondary season. There would be a possibility that the experience of users would be changed enough that it would become difficult to use the semi-primitive motorized ROS standard to describe the river experience, especially in the months of peak use. If the daily maximums for private powerboat launches were used, this would detract further from the sense of remoteness. Any effects would be more pronounced in the section of river between Pittsburg Landing and Rush Creek where the highest number of boats would be allowed to travel. These effects would subside between Rush Creek and Granite and again between Granite and the dam as a result of lower use allocations in these sections of the river. However, the overall effect would still de-

tract from the sense of remoteness in these sections of river.

This alternative would have a low potential of achieving the ROS setting for remoteness as described in Table III-1 throughout the life of the plan. The potential magnitude of the level of use associated with this alternative would have accelerated rapidly if the daily maximum launch limits of eight and 16 for private powerboats as described by the LAC planning process were implemented. Increases allowed by the levels of use that were analyzed in Alternative B could still produce trends in this ROS standard that would eventually move it toward the more developed end of the ROS spectrum. As the trend took place, there would be a corresponding reduction in the opportunity for visitors to experience solitude or isolation from the sights and sounds of others while on the river, especially in the section of river between Rush Creek and Pittsburg Landing.

ALTERNATIVE C

In Alternative C, the wild section would be managed with limits on all powerboating and float trips.

Private and commercial powerboaters would have numbers of daily launches that would approximate an average level of use that occurred in the years 1985-1989 but adjusted to provide for an equal allocation between the two groups.

All floatcraft use would be managed under the present allocation system and one-day commercial float launches would be allowed within the existing daily launch limits. Float use could grow toward the maximum number of launches and the maximum party size per trip. The percentage of float trips using only the wild river would likely increase based on trends toward shorter trips (reference analysis file). However, the number of jetbacks on float trips should decrease due to the limited commercial powerboat launches. The limited availability of jetbacks could produce a reduction in total float launches. A 33% reduction in existing float trip maximum party size and a limit on the number of floatcraft per party would further move numbers of floaters toward 1985-1989 use levels.

The degree of remoteness would improve from the existing situation with an overall reduction in numbers of people and trips on the river. The rate of change at campsites would be reduced with fewer overnight parties and reduced party sizes. The feeling of remoteness would be enhanced due to fewer people on the river. Dependence on individual skills would be more important since help from others would be less available. While the removal of picnic tables and toilets from campsites would enhance the sense of remoteness, the navigation markers would detract from this experience. The levels of use within this section of river would enhance the sense of remoteness.

This alternative would have a high potential of achieving the desired ROS setting for remoteness as described in Table III-1. There would be a moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others.

ALTERNATIVE D

In Alternative D, the section of river from Hells Canyon Dam to Kirkwood would be managed exclusively for float trips under the existing allocation system during the peak summer season. Motorized use would be allowed in the secondary season. The river from Kirkwood to Pittsburg would be managed for limited float and powerboat use during the primary season and unlimited use in the secondary season.

A 33% reduction in party size, limits on the numbers of craft per float party, and the absence of powerboats would enhance the feeling of remoteness even though the number of daily launches would remain similar to current levels or increase slightly. Due to demand for this type of trip in this stretch of the river the average number of launches could reach the maximum of five launches per day. The reduced party size and maximum numbers of floatcraft per party could partially offset the increase in launches, and not adversely affect the sense of remoteness during the trip. A higher value would be placed on self-reliance with a greater dependence on individual skills. Removal of navigation markers, picnic tables, and toilets would enhance the feeling of remoteness.

Floaters proceeding downstream from Kirkwood could expect a reduced sense of remoteness, especially since they would have experienced a greater sense of remoteness during the first part of their trip. The main reason for this would be the change they would experience at Kirkwood Historic Ranch and the presence of powerboats downstream from Kirkwood.

The management of the river between Kirkwood and Pittsburg would include day-use commercial powerboating and private powerboats at approximately 1985-1989 average use levels. This lower level of use from the current situation would enhance the sense of remoteness experienced by powerboaters except those launching from Pittsburg may not experience a sense of remoteness due to the relatively short distance between Pittsburg and Kirkwood.

Removal of navigation markers, picnic tables, and toilets at campsites downstream from Kirkwood would enhance the feeling of remoteness. Powerboaters in particular would be required to place a greater dependence on their level of skill in the absence of navigation markers.

The levels of use associated with this alternative between Hells Canyon Dam and Kirkwood would enhance the sense of remoteness for floaters, but would not achieve the desired ROS setting of remoteness in the general wild river corridor in a semi-primitive motorized setting during the primary season. It would be able to achieve the ROS setting of remoteness in the secondary season. The levels of use and removal of structures associated with this alternative from Kirkwood downstream would enhance the sense of remoteness but to a lesser degree for both users due to the relatively short river distance involved and the change in experience at Kirkwood Historic Ranch.

This alternative would have a moderate potential for achieving the desired ROS setting for remoteness as described in Table III-1 on a year-round basis. During the primary season there would be a moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others in a semi-primitive motorized setting only between Kirkwood and Pittsburg Landing.

ALTERNATIVE E

In Alternative E, the river from Hells Canyon Dam to Kirkwood would be managed for exclusive use by floaters and powerboaters alternating on a biweekly basis during the primary season. The wild river downstream from Kirkwood to Pittsburg Landing would be managed with limited powerboat use during the exclusive non-motorized boat week and with limited non-motorized boat use during the exclusive powerboat week. During the secondary season both uses would have unlimited access.

The sense of remoteness would be enhanced for floaters and powerboaters between Hells Canyon Dam and Kirkwood because both groups would have exclusive use of the river an alternating weeks. This would result in each user group being able to fulfill their expectations of remoteness in an uncompromised setting where the type of equipment being used to access the area was not an issue. The removal of navigation markers, picnic tables, and toilets would enhance the sense of remoteness.

For floaters, a 33% reduction in party size, limits on the number of craft per float party, and the absence of powerboats would enhance the feeling of remoteness even though use levels would increase with the number of daily launches raised to seven (four private, three commercial). The increase in launches would be offset by limiting use to every other week for a 30% reduction in total launches.

Due to demand for a non-motorized float trip in this stretch of the river, the average number of launches could move toward the maximum of seven launches per day and could reach this number on some days. Visual crowding while on the river as a result of reaching this maximum limit could reduce the sense of remoteness. The reduced party size and maximum numbers of floatcraft per party could partially offset the increased utilization of launches, enhancing the feeling of remoteness during the trip. A higher value would be placed on self-reliance with a greater dependence on individual skills.

Commercial and private powerboat use during their exclusive use week was developed from a combined average of one boat per mile be-

tween Hells Canyon Creek and Pittsburg based on availability of overnight camping plus an additional six commercial day-use trips. While this level of use during the powerboating week would be approximately 50% higher per week than current average weekly use levels, it would represent a reduction of approximately 22% in current summer use for private powerboaters since the opportunity would only be available every other week during the primary season. For commercial powerboats the use level would be similar to Alternative B but only every other week, resulting in an overall reduction of approximately 25% from existing use levels during the summer season.

Floaters proceeding downstream from Kirkwood could expect a lessened sense of remoteness, especially since they would have had a more remote experience during the first part of their trip. The main reason for this would be the change they would experience at Kirkwood Historic Ranch and the presence of powerboats downstream from Kirkwood.

During the non-motorized week upstream from Kirkwood, the management of the river downstream from Kirkwood would include day-use commercial powerboats at approximately 1985-1989 average use levels and private powerboat use at a higher than current level of use. This slightly lower level of total powerboat use (from the existing situation) would enhance the sense of remoteness experienced by powerboaters with the exception that powerboaters launching from Pittsburg may not experience a sense of remoteness due to the relatively short distance between Pittsburg and Kirkwood.

The removal of picnic tables and toilets would enhance the feeling of remoteness.

During the exclusive week for powerboaters, use downstream from Kirkwood would be included in the allocation of use described under Alternative E, Hells Canyon Dam to Kirkwood. The sense of remoteness would be somewhat lessened due to the presence of navigation markers, requiring less reliance on individual skills of motorized users while traveling in this section of the river.

During the primary season, this alternative would not achieve the ROS setting for remoteness between Hells Canyon Dam and Kirkwood as displayed in Chapter III on the non-motorized week, but would enhance the sense of remoteness for non-motorized users due to the absence of sight and sound of motorized users. It would achieve the ROS setting for remoteness upstream from Kirkwood on the motorized week and in the secondary season and downstream from Kirkwood year-round. As a result, it would have a high potential to achieve the desired ROS setting as described in Table III-1 on a year-round basis. There would be a moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others. Expectations would be met based on the different perceptions of motorized and non-motorized users during their weeks of exclusive use.

ALTERNATIVE F

In Alternative F, the wild river would be managed year-round for exclusive non-motorized boat use.

This alternative would enhance the feeling of remoteness for floaters. A 33% reduction in party size from current maximum use levels and limits on the number of craft per party would be factors in enhancement of this sense of remoteness. Floaters would be completely dependent on their skills, year-round, when traveling in this section of the river. Assistance in emergency situations would be extremely limited.

The removal of picnic tables and toilets from river campsites and navigation markers throughout the wild river corridor would enhance the feeling of traveling in a remote area. Closing the interpretive facility at Kirkwood and removing all non-historic structures at the site would further enhance the sense of remoteness. The maximum daily allocation of 100 user days for commercial and private users would represent a 48% reduction in the maximum allocation of user days under the present situation. However, due to present utilization of launches and average party size, full utilization under this alternative would represent a 38% increase over

existing non-motorized boat use and may produce a greater number of daily launches.

While there would be a moderate expectation of solitude and some expectation of experiencing isolation from the sites and sounds of others for floaters in the wild river, this alternative has a low potential for achieving the desired ROS setting for the wild river year-round as described in Table III-1 because it allows no motorized use in a semi-primitive motorized setting.

ALTERNATIVE G

In Alternative G, the wild river would be managed for mixed use with maximum daily powerboat launches representative of the mid to late 1980's to provide a variety of quality recreation experiences. This would include an opportunity for a non-motorized experience on a limited basis between Wild Sheep Rapid and Kirkwood Historic Ranch during Monday through Wednesday each week in July and August.

The sense of remoteness would be enhanced by allocating private powerboat use to average levels of use that occurred on weekends in July and August of the mid to late 1980's, eliminating peaks in use. All float use would be managed under the existing allocation system that was also used in the late 1980's. One-day commercial float launches would only be allowed within the existing daily launch limits. Float use could grow toward the maximum number of launches and the maximum party size per trip, but this would be offset by a 20% reduction in maximum party size and limits on the number of boats per party. Commercial powerboat use allocations would reflect average daily levels of use from the 1980's that have essentially continued into the 1990's, but limited to areas of operation that had historically been used over the past decade, assuring a continuation of a greater sense of remoteness in sections of the river where commercial use has historically been lower (Wild Sheep to Rush Creek).

The absence of kickers on floatcraft would add to the sense of remoteness. The opportunity for a non-motorized experience on Monday through Wednesday in July and August would enhance the sense of remoteness for floaters and trail users. There would be a greater importance placed on self-reliance by users during this time period. The percentage of float trips using only the wild river would likely increase based on both trends toward shorter trips (reference analysis file) and the opportunity for non-motorized periods of time. However, the number of jetbacks on float trips would decrease due to the limited commercial powerboat launches and the non-motorized period.

The sense of remoteness would improve from the existing situation with management of peaks in maximum numbers of people and boats on the river. Removal of navigation markers upstream from Kirkwood and picnic tables and toilets from campsites in the entire wild river corridor would enhance the sense of remoteness. Managing hours for launching trips and hours of operation for powerboats on day-use trips would enhance the sense of remoteness for powerboaters, floaters, and trail users at their campsites in early morning and evening hours.

While this alternative allows for some non-motorized use in a semi-primitive motorized setting, this use does not occur on the entire wild river and then, only on 24 days or 7% of each year. As a result, this alternative would have a high potential of achieving the desired ROS setting for remoteness as described in Table III-1 on a year-round basis. There would be a moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others.

SCENIC SECTION - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In Alternative A, powerboats (except for personal watercraft) and floatcraft use would remain unrestricted. Three of four airstrips would be open (Cache Creek would be closed) and helicopters could land at any accessible location in the river corridor except for the four miles of study river. Land-based recreation would be fairly unrestricted, with drop camps in the corri-

dor and horse and hiker use on the trail system on the Oregon side of the river.

Scenic designation would allow for a higher level of use and lessened sense of remoteness. Picnic tables and primitive toilets at some widely dispersed river campsites and navigation markers would diminish the sense of remoteness but to a greater degree for floaters than powerboaters.

With unlimited potential for growth, a point in time would be reached where the appropriate experience could no longer be achieved and detrimental effects could result to the ORV's due to overuse. Effects of overuse at campsites, littering, and increased competition for campsites would seriously diminish any sense of remoteness. The effects of overuse in the primary season could carry over into the secondary season. There is a high probability that some of the effects to resources would be irreversible, leading to a situation where the river was no longer a desirable location for river recreation. The ROS setting of semi-primitive motorized would be compromised at some point in time and the trends in higher use levels would move the ROS setting into categories which allowed increased levels of use, further reducing the opportunity to experience a sense of remoteness.

This alternative would have a low potential for achieving the desired ROS setting for the scenic river as described in Table III-2 and probably could not achieve the setting over the long-term during the primary season. The magnitude of use levels associated with this alternative would create a major reduction in the opportunity for a moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others at a level appropriate for a scenic river setting.

ALTERNATIVE B

In Alternative B, powerboats (except for personal watercraft) and floatcraft use would remain unrestricted. Aircraft use would be allowed at all four available airstrips and helicopters would be restricted to landings only at airstrips. Land-based recreation would be fairly unrestricted, with drop camps in the corridor and horse and hiker use on the trail system on the Oregon side of the river.

Scenic designation would allow for a higher level of use and lessened sense of remoteness. Picnic tables at some widely dispersed river campsites and navigation markers would diminish the sense of remoteness but to a greater degree for floaters than powerboaters.

Monitoring would be used to indicate problems associated with crowding, at which time limits on levels of use would be developed. However, the modified natural river setting described in the LAC planning process that is the equivalent of a roaded natural river setting could create a level of use where the sense of remoteness could be greatly diminished within the scenic river prior to implementing any limits on use, and could adversely affect the recreation ORV. Impacts created by overuse at campsites, littering, and increased competition for campsites would seriously diminish any sense of remoteness. There is a possibility that some of the effects of overuse on the resources would be irreversible, creating an undesirable location for river recreation before an allocation system could be implemented. Effects of overuse in the primary season could carry over into the secondary season, further reducing the sense of remoteness for longer periods of time.

Removal of toilets from dispersed campsites along the river corridor in support of a solid human waste carryout system would enhance the sense of remoteness year-round but could not offset the impacts caused by levels of use associated with a roaded natural river setting in the scenic river corridor.

This alternative would have a low potential for achieving the desired ROS settings as described in Table III-2 for the scenic river and would probably not achieve the setting over the long-term during the primary season. It may be difficult to achieve the ROS setting even after establishment of use limits. The magnitude of the peaks in levels of use associated with this alternative prior to the establishment of use limits would create a major reduction in the opportunity for a moderate expectation of solitude and some expectation of experiencing isolation

from the sights and sounds of others at a level appropriate for a scenic river setting.

ALTERNATIVE C

In Alternative C, powerboat (except personal watercraft) and floatcraft use would be managed for moderate levels of use. Aircraft use would be allowed at all four available airstrips and helicopters would be restricted to landing only at airstrips. Land-based recreation would be fairly unrestricted. The opportunity for drop camps in the corridor would be somewhat limited due to caps on commercial motorized use. Horse and hiker use on the trail system on the Oregon side of the river would be available. Unlimited float use would enter the scenic river at the mouth of the Salmon River. (Effects of Lower Salmon use entering the Snake River will also be reviewed under cumulative effects.)

Scenic designation would allow for a higher level of use and lessened sense of remoteness. Picnic tables at some widely dispersed river campsites and navigation markers would diminish the sense of remoteness but to a greater degree for floaters than powerboaters. Removal of toilets from dispersed campsites in support of a solid human waste carryout program would enhance the sense of remoteness year-round.

Since limits on use would be established at a moderate level below existing use levels, the sense of remoteness would be enhanced. Moderate levels of use would reduce overall use at campsites, reduce littering, and reduce encounters among users. Reduced campsite competition would improve the sense of remoteness.

This alternative would have a high potential for immediately achieving the desired ROS setting for remoteness year-round in the scenic river as described in Table III-2. There would be a moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others at a level appropriate to a scenic river setting.

ALTERNATIVE D

In Alternative D, this section of the river would be managed to provide for motorized recreation during the primary season. While the numbers of powerboats would be 17% above current use levels for this section of river, peaks in use would be managed as soon as primary season limitations were implemented and float trip launches on the Snake from Pittsburg and below would be prohibited. The amount of float traffic launching at Hells Canyon Creek and continuing their trip into this section of the river would add use as well as float use entering from the Salmon River. A maximum of four personal watercraft per day could enter the scenic river for day-use only.

Scenic designation would allow for a higher level of use and less sense of remoteness. Picnic tables at some widely dispersed river campsites and navigation markers would diminish the sense of remoteness but to a greater degree for floaters than powerboaters. Removal of toilets from dispersed campsites in support of a solid human waste carryout program would enhance the sense of primitiveness and remoteness year-round.

With the emphasis on providing a motorized recreation experience in the scenic river, especially above the mouth of the Salmon on the Snake River, the amount of use would not be viewed as detrimental to the feeling of remoteness when viewed from the perspective of motorized recreationists. Inversely, the limited number of floaters continuing into this section of the river from upstream during the primary season would view the amount of motorized use to be too high to provide a sense of remoteness, even within the guidelines that would be applicable to scenic designation. This could be viewed as a low or negligible effect in light of the management emphasis on motorized recreation and the trade-off of a non-motorized experience in the wild river. The traditional use of kickers by floaters in this section of the river, especially below the mouth of the Salmon River would support this position of negligible effect. (Effects of Lower Salmon use entering the Snake River will be reviewed under cumulative effects.)

This alternative would have a high potential of achieving the desired ROS setting for remoteness in the scenic river year-round in the scenic river as described in Table III-2. There would be a moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others at a level appropriate to a scenic river setting.

ALTERNATIVE E

In Alternative E, this section of the river would be managed to emphasize variations in levels of mixed use on weekdays and weekends during the primary season. Total average powerboat use would be 22% higher than existing use. Commercial powerboats would be limited to eight boats per day. Numbers of private powerboats would be limited to a maximum ten permits daily, Monday through Thursday and a maximum 20 permits daily on Friday through Sunday for this section of river. Personal watercraft would be limited to four per day from Cache Creek to the mouth of the Salmon. Some additional float use would occur every other week as a result of launches at Hells Canyon Creek that continue their trip into this section of the river. Some floaters would also enter from Pittsburg and Dug Bar but would be limited to a low level of use when limits were reached. A large number of floaters would enter from the mouth of the Salmon River. The result would be a total amount of use similar to Alternative D with higher numbers of powerboats on weekends and a slightly higher percentage of float use. (Effects of Lower Salmon use entering the Snake River will be reviewed under cumulative effects.)

Scenic designation would allow for a higher level of use and a reduced sense of remoteness. Picnic tables at some widely dispersed river campsites and navigation markers would diminish the sense of remoteness but to a greater degree for floaters than powerboaters. Removal of toilets from dispersed campsites in support of a solid human waste carryout program would enhance the sense of remoteness year-round.

Since the alternative would enhance the motorized recreation experience in the scenic river, especially above the mouth of the Salmon River on the Snake River, the amount of use in the area would not be viewed as detrimental to the feeling of remoteness when viewed from the perspective of motorized recreationists. Inversely, the limited amount of floatcraft use continuing into this section of the river from upstream (at a slightly higher level than Alternative D during the primary season) would view the amount of powerboat use to be too high to provide a sense of remoteness, even within the guidelines that would be applicable to scenic designation. This could be viewed as a low or negligible effect in light of the management emphasis on motorized recreation and a a trade-off for a non-motorized experience in the wild river. The traditional use of kickers by floaters in this section of the river, especially below the mouth of the Salmon River, would support this position of negligible effect.

This alternative would have a moderate potential of achieving the desired ROS for remoteness as described in Table III-2 on a year-round basis due to the increased levels of powerboat use on weekends during the primary season. There would be a higher expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others on weekdays, and a lower expectation on weekends, but still at a level appropriate to a scenic river setting.

ALTERNATIVE F

In Alternative F, this section of the river would be managed to provide for motorized recreation year-round. While the total numbers of motorized craft would be 28% above current use levels for this section of river, float use in this section of the river above the mouth of Salmon River would be excluded during the primary season. (Effects of Lower Salmon use entering the Snake River will be reviewed under cumulative effects.)

Scenic designation would allow for a higher level of use and a reduced sense of remoteness. Picnic tables at some widely dispersed river campsites and navigation markers would diminish the sense of remoteness but to a greater degree for floaters than powerboaters. Removal of toilets from dispersed campsites in support of

a solid human waste carryout program would enhance the sense of remoteness year-round.

Since the alternative would emphasize a motorized recreation experience, the amount of use in the area would not be viewed as detrimental to the feeling of remoteness when viewed from the perspective of motorized recreationists. The limited amount of floaters launching in this section of the river during the secondary season would create a situation similar to Alternative C during the primary season and only as long as weather conditions were favorable for floating. Any effects on floaters' experience of remoteness during the secondary season could be viewed as a low or negligible effect and as a trade-off for a non-motorized experience year-round in the wild river. The traditional use of kickers by floaters in the river below the mouth of the Salmon River during the primary season would also be viewed as a negligible effect.

While float use would still be allowed access to the scenic river from the mouth of the Salmon River during the primary season, this alternative would have a high potential of achieving the desired ROS setting on a year-round basis as described in Table III-2 because it emphasizes motorized access as a trade-off for non-motorized users' exclusive use of the wild river. There would be a moderate expectation of solitude and some expectation of experiencing isolation from the sights and sounds of others at a level appropriate to a scenic river setting based mainly upon the perception of motorized users.

ALTERNATIVE G

In Alternative G, this section of the river would be managed to emphasize variations in levels of mixed use on weekdays and weekends during the primary season. Total average powerboat use operating in the entire scenic river would be 22% higher than existing use. Commercial powerboats would be limited to six boats per day. Numbers of private powerboats would be limited to a maximum ten permits daily, Monday through Thursday and a maximum 20 permits daily on Friday through Sunday for this section of river. An additional five private powerboats per day could travel from Cache Creek to the mouth of the Salmon for day-use only. Some float use would occur as a result of launches at Hells Canyon Creek that continued their trip into this section of the river and from float launches entering from Pittsburg and Dug Bar. A large number of floaters would enter from the mouth of the Salmon River. The result would be a total amount of use similar to Alternative E with higher numbers of powerboats on weekends and a higher percentage of float use. (Effects of Lower Salmon use entering the Snake River is reviewed under cumulative effects.)

Scenic designation would allow for a higher level of use and a reduced sense of remoteness. Picnic tables at some widely dispersed river campsites and navigation markers would diminish the sense of remoteness but to a greater degree for floaters than powerboaters. Removal of toilets from dispersed campsites in support of a solid human waste carryout program would enhance the sense of remoteness year-round.

Since the alternative would enhance the motorized recreation experience in the scenic river, especially above the mouth of the Salmon River on the Snake River, the amount of use in the area would not be viewed as detrimental to the feeling of remoteness when viewed from the perspective of motorized recreationists, especially on weekdays. Inversely, the limited amount of floatcraft use continuing into this section of the river from upstream (at a slightly higher level than Alternative D during the primary season) would view the amount of powerboat use to be too high, especially on weekends, to provide a sense of remoteness, even within the guidelines that would be applicable to scenic designation. This could be viewed as a low or negligible effect in light of the management emphasis on motorized recreation and the opportunity for a non-motorized experience in the wild river. The traditional use of kickers by floaters in this section of the river, especially below the mouth of the Salmon River, would support this position of negligible effect.

This alternative would have a moderate potential of achieving the desired ROS setting for remoteness as described in Table III-2 on a year-round basis due to the increased levels of powerboat use on weekends during the primary season. There would be a higher expectation of

solitude and some expectation of experiencing isolation from the sights and sounds of others on weekdays, and a lower expectation on weekends, but still at a level appropriate to a scenic river setting.

SOCIAL ENCOUNTERS

Social encounters are a part of the recreation setting and are important when considering the impact of users on each other's recreation experiences. Social encounters can be described as seeing, hearing, smelling (gas fumes, smoke from camps, etc.) or interacting with other parties during a river trip. These encounters may be between individuals and groups, different user groups, similar user groups, commercial and private users, river and land-based users, or other combinations of individuals or groups. Encounters with individuals traveling together as a group are usually not considered. A level of congestion is indicative of the cumulative effect of multiple encounters and is most easily recognized at site specific locations. This would be most measurable at launch/takeout ramps, rapids which are usually scouted because of degree of difficulty, or at destination sites on the river such as Kirkwood Historic Ranch.

Encounters are generally not easily quantifiable in dispersed settings and are most important to recreationists who place a high value on a sense of remoteness as part of their recreation experience. Among Snake River users, the number of encounters has historically been more important to floaters than powerboaters with the exception that both groups are concerned about encounters that involve inappropriate social behavior and encounters that lead to congestion at launch/takeout ramps. Inappropriate social behavior can diminish the expected river experience, and congestion at launch/takeout ramps can cause problems with access and egress to the river.

On the Snake River where powerboat travel is common, it is even more difficult to quantify encounters since powerboats are extremely mobile. A powerboater may concentrate use in a specific section of river, reducing the chances of encounters with other groups, or may range over many miles of river several times in a single day, increasing the chance of multiple encounters as a result of a single powerboat. Floaters proceed down river at a relatively constant pace, reducing the likelihood of encounters with other float parties behind or ahead of them. For this reason, floaters on the Snake River usually refer to encounters as a negative experience in reference to powerboat use, its associated noise, odor, and multiple encounters with motorized users (University of Idaho User Survey).

In the wild river, the visitor's experience would be enhanced with a lower level of encounters and congestion. In the scenic river a higher level of encounters and congestion would be acceptable but use would still be managed at a level that would not affect the appropriate recreation experience for a scenic river in a motorized setting. Since float use entering the Snake from the Lower Salmon has a cumulative impact on Snake River management goals, analysis of encounters will consider Snake River users only. The effect of Lower Salmon River use on encounters is analyzed under the section on cumulative effects.

There are several assumptions made in determining the potential for achievement of the desired ROS setting as follows:

- A reduction in the number of negative social encounters at congested areas and on the river between users, particularly between powerboaters and floaters, would enhance the recreation ORV.

- Higher levels of use would create higher numbers and rates of encounters due to total numbers of people and mobility of powerboats.

- The level of use and associated social encounters in the secondary season for all action alternatives are generally acceptable due to reduced levels of use. The rationale for this assumption is that it would be necessary to extend the primary season for any alternative where they were generally not acceptable.

Encounters as a result of competition for campsites is not considered since this issue is analyzed as a separate effect.

For the purpose of this analysis, encounters are measured subjectively in terms of high, moderate, or low potential for each alternative to achieve the desired ROS setting for social encounters during the primary season. A description of the desired ROS settings for the wild and scenic sections of the river can be found in Tables III-1 and III-2, respectively.

ALTERNATIVE A

Under this alternative, powerboat use would remain unlimited, allowing it to increase above existing use levels. Float trips, while limited, could increase towards the limits set for maximum daily launches, party size, and number of boats per party.

Improvement of launch facilities at Hells Canyon Creek and Pittsburg Landing would alleviate some congestion but the potential for increased use at these sites could offset the capacity of these improvements. Use at Kirkwood could be expected to grow with increased river use and improved trail facilities at Pittsburg for hikers and horses.

This alternative would have a low potential to achieve the desired ROS setting for social encounters as described in Table III-1. The magnitude and duration of encounters would increase, resulting in many contacts with other users at rapids and access points.

ALTERNATIVE B

This alternative would limit all motorized use but at a level greater than existing use. Floatcraft use could increase through greater utilization of launches, number of people, and boats per party.

Improvements to launch facilities at Hells Canyon Creek and Pittsburg Landing would alleviate some congestion but the potential for increased use at these sites could be an offsetting negative factor. Use at Kirkwood could be expected to grow with increased river use and improved trail facilities at Pittsburg for hikers and horses.

This alternative would have a low potential to achieve the desired ROS setting for social encounters as described in Table III-1. The magnitude and duration of encounters would increase, especially between Rush Creek and Pittsburg, resulting in many contacts with other users at rapids and access points.

ALTERNATIVE C

This alternative would manage use at a level approximating an average of use levels that occurred in 1985-1989. The maximum number of floatcraft, even with a limit of eight boats per launch, could outnumber powerboats by a minimum ratio of approximately 4:1 at maximum utilization (based on existing average number of boats per float party). However, the importance of this imbalance is lessened as powerboat users generally place somewhat less emphasis on encounters.

Improvements to launch facilities at Hells Canyon Creek and Pittsburg Landing would alleviate some congestion. While float traffic at Hells Canyon Creek could grow with increased utilization of launches, limits on powerboat use would offset the potential for increased congestion. River use at Kirkwood would probably stabilize at levels lower than current use although this would be partially offset by increased trail use from Pittsburg.

This alternative would have a high potential to achieve the desired ROS setting for social encounters as described in Table III-1. Few contacts would occur with other users at rapids and access points. Most encounters would be of short duration.

ALTERNATIVE D

This alternative would eliminate powerboat use between Hells Canyon Dam and Kirkwood during the primary season and grant exclusive use to non-motorized use, creating few on-river encounters except with other floater groups or trail

users. In the secondary season motorized use would be allowed and encounters would increase during the period of the season that would still provide favorable weather for floating.

Improvements to launch facilities at Hells Canyon Creek and Pittsburg would alleviate most congestion, especially with limited powerboat access at Pittsburg. While floatcraft use at Hells Canyon Creek could grow with increased use of launches, elimination of powerboat use upstream from Kirkwood during the primary season would offset the potential for congestion. A slightly higher level of congestion could occur in the secondary season when powerboat use would be allowed, but the overall effect would be negligible.

Between Kirkwood and Pittsburg, float use would continue downstream and encounter powerboat use that would represent levels of use that approximated weekend use in 1985-1989 during the primary season. During the secondary season there would be no use limits for any users. The number of encounters would be relatively stable throughout the year based on maximum use limits and seasons of use associated with each user group. Use levels at Kirkwood would stabilize year round with a slightly higher though moderate level of use during the primary season.

This alternative would have a high potential to achieve the desired ROS setting for social encounters as described in Table III-1. Few contacts would occur with other users at rapids and access points. Most encounters would be of short duration.

ALTERNATIVE E

In this alternative, floaters and powerboaters would have exclusive biweekly use on alternating weeks during the primary season between Hells Canyon Dam and Kirkwood. During the secondary season there would be no limits on use for any user group. There would be little opportunity for encounters between the two user groups during the primary season. The few encounters that would occur could potentially relate to the transition times at the end of each week.

While float use at Hells Canyon Creek would grow with an increased number of launches during the exclusive non-motorized week, improvements to launch facilities at Hells Canyon Creek would alleviate most congestion. During the exclusive motorized week, fewer numbers of powerboat users would be launching from this location than from points down river, alleviating congestion. A slightly higher level of congestion could occur in the secondary season when both types of use would have access to unlimited launches, but only during the time period when weather was favorable for floating.

During the non-motorized week, float groups would continue downstream below Kirkwood and powerboat use could travel upstream to Kirkwood with an emphasis on day-use and limited overnight camping opportunities. On the exclusive motorized use week, only a few float groups would be finishing their trip downstream from Kirkwood. The number of encounters would only be a factor for a few days during the motorized week and vary in level of effect dependent upon the number of float groups in this section of the river at the end of each non-motorized week, whether or not they were using jetback service, etc. The overall effect would be negligible.

Use levels at Kirkwood would stabilize on a weekly basis during the primary season, with higher use expected during the motorized week. Limited motorized use and improvements to the ramp area at Pittsburg would alleviate some potential for congestion at that site during the primary season. The level of congestion should stabilize at the Pittsburg ramp with mixed use during the non-motorized week and mostly powerboat use during the motorized week.

This alternative would have a high potential to achieve the desired ROS setting for social encounters as described in Table III-1. Few contacts would occur with other users at rapids and access points. Very few contacts in limited areas of the river corridor would occur between motorized and non-motorized users. As a result,

the intensity of any encounters would be greatly reduced.

ALTERNATIVE F

In this alternative, non-motorized boaters would have exclusive use of the wild river year-round. This would result in no on-river encounters with powerboat users.

Improvements to launch facilities at Hells Canyon Creek and Pittsburg would alleviate most congestion, especially with the reduction in the maximum number of people that could access the river per day and limits on the number of boats per trip. Elimination of motorized use year-round would further reduce the possibility of congestion. A slightly higher level of congestion could occur in the secondary season when no daily launch limits were in effect. Congestion would also occur at Pittsburg with motorized access downstream in the scenic river but have a negligible effect for floaters considering the the trade-off of non-motorized exclusive use of the wild river. The importance of use levels at Kirkwood would be negligible in the absence of an active interpretive program at the site.

This alternative would have a high potential to achieve the desired ROS setting for social encounters as described in Table III-1. Few contacts would occur with other users at rapids and access points. The duration of any encounters would be very short.

ALTERNATIVE G

Under this alternative, mixed powerboat and float use would occur, with the opportunity for a non-motorized experience three days per week on Monday through Wednesday for an eight week period in July and August.

Use would reflect levels of access that occurred in the mid to late 1980's with emphasis on management of peak use for powerboating and floating. This would reduce the number of encounters at launch sites and on the river. Float party size would be reduced 20% with an associated reduction in the number of float craft.

During the non-motorized period between Wild Sheep Rapid and Kirkwood, there would be no social encounters between motorized and non-motorized river users, enhancing the experience for non-motorized river and trail users. During periods of mixed use, the levels of use would be low enough to assure an overall reduction in encounters between groups.

Use levels at Kirkwood would stabilize on a weekly basis during the primary season with a constant daily launch allocation for all users. Limited motorized and non-motorized use and improvements to the ramp area at Pittsburg would alleviate some potential for congestion at that site during the primary season. The level of congestion at Hells Canyon Creek and the Pittsburg ramp should stabilize with limited, mixed use occurring on a daily basis during the primary season.

Management of hours of operation for motorized day-use and launch ramps should reduce social encounters between powerboaters and campers on the river. The reduction in one-day float trips and jetbacks, and limiting commercial powerboat outfitters to their historic areas of operation, should also reduce encounters between groups.

This alternative would have a high potential to achieve the desired ROS setting for social encounters as described in Table III-1. Few contacts would occur with other users at rapids and access points. Most encounters would be of short duration.

SCENIC SECTION - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

Under this alternative, unlimited motorized use would be allowed to increase above existing use levels. Increased floating could occur from more trips launching at Hells Canyon Creek and continuing into this section of the scenic river, and from additional launches at Pittsburg, Dug Bar, and the Lower Salmon River.

Improvements to the ramp at Pittsburg would alleviate some congestion but this ramp would also be handling upstream users, adding to total congestion. Improved road access to Dug Bar could increase congestion at that site but at a lower level of use. Shoreline access to Cache Creek would become more congested, even with improved dock facilities.

This alternative would have a low potential to achieve the desired ROS setting for social encounters as described in Table III-2. The magnitude and duration of encounters would increase, resulting in many contacts with other users at rapids and access points.

ALTERNATIVE B

Under this alternative, powerboat use would be able to increase above existing use levels with no limits on use in the immediate future prior to monitoring. Peaks in use would not be managed, resulting in very high numbers of daily launches on some weekend days and holidays. Increased float trips could occur from more trips launching at Hells Canyon Creek and continuing into this section of the scenic river and from additional launches at Pittsburg, Dug Bar, and the Lower Salmon River.

Improvements to the ramp at Pittsburg would alleviate some congestion but this ramp would also be handling upstream and downstream motorized and non-motorized users, adding to total congestion. Improved road access to Dug Bar could increase congestion at that site but at a lower level of use. Shoreline access to Cache Creek would become more congested, even with improved dock facilities.

The LAC planning process focused upon a modified natural river setting that would allow more encounters than a semi-primitive motorized setting. This would allow an increase in the level of use with a resulting increase in encounters.

This alternative would have a low potential to achieve the desired ROS setting for social encounters as described in Table III-2. The magnitude and duration of encounters would increase, resulting in many contacts with other users at rapids and access points.

ALTERNATIVE C

Under this alternative, powerboat use would be managed at a moderate level of use slightly higher than in the wild river. Floating use could increase because of more trips utilized, launching at Hells Canyon Creek and continuing into this section of the scenic river, and from additional launches at Pittsburg, Dug Bar, and the Lower Salmon River.

Improvements to the ramp at Pittsburg would alleviate some congestion but this ramp would also be handling upstream powerboat and floatcraft use, adding to the total congestion. Improved road access to Dug Bar could increase congestion at that site but at a lower level of use. Shoreline access to Cache Creek would become less congested.

This alternative would have a high potential to achieve the desired ROS setting for social encounters as described in Table III-2. There would be few contacts with other users at rapids and access points. Any contacts that did occur would be of short duration.

ALTERNATIVE D

Under this alternative, powerboat use would be concentrated in the scenic section during the primary season approximately 17% above existing use levels. Floating could increase because of more trips utilized, launching at Hells Canyon Creek and continuing into this section of the scenic river, and from additional float trips entering from the Lower Salmon River. While float launches would not be allowed from Pittsburg and Dug Bar during the primary season this effect would be negligible because of the low historic use associated with these sites.

Improvements to the ramp at Pittsburg would alleviate some congestion. However, this ramp would also be handling takeouts by upstream floaters, adding to the congestion, but not at an unacceptable level. Improved road access to Dug Bar could increase congestion at that site

but at a lower level of use. Shoreline access to Cache Creek would become more congested but manageable since, historically, use was spread throughout the day.

This alternative would have a moderate potential to achieve the desired ROS setting for social encounters as described in Table III-2. There would be some contacts with other users at rapids and access points. The number and duration of contacts would vary from short to moderate duration, but at a level acceptable for a scenic river designation.

ALTERNATIVE E

Under this alternative, powerboat use would be concentrated in the scenic section during the primary season, but managed to reduce peak use days. Floating could increase because of more trips utilized and launching at Hells Canyon Creek and continuing into this section of the scenic river, but only adding use every other week during the primary season. Increased float use could occur from additional launches at Pittsburg, Dug Bar, and the Lower Salmon River. Floats launched from Pittsburg and Dug Bar would be limited to a low level of use once maximum levels were reached during the primary season.

Improvements to the ramp at Pittsburg would alleviate some congestion. Some congestion would occur from mixing powerboaters, floaters launching down river, and floatcraft takeouts coming from upriver every other week. Improved road access to Dug Bar could increase congestion at that site but at a lower level of use. Shoreline access to Cache Creek would become more congested but manageable, since use would be spread throughout the day. Peak use days would be eliminated, although higher levels of powerboat use would be allowed on weekends compared to weekdays.

This alternative would have a moderate potential to achieve the desired ROS setting for social encounters as described in Table III-2. There would be some contacts with other users at rapids and access points. The number and duration of contacts would vary from short to moderate duration, but at a level acceptable for a scenic river designation. The duration and number of contacts would be less on weekdays compared to weekends and less above the mouth of the Salmon compared to below the mouth of the Salmon.

ALTERNATIVE F

Under this alternative, powerboat use would be concentrated year-round in the scenic section approximately 28% above existing use levels. A decrease would be expected in floatcraft use due to the different allocation system in the wild river and no float launches from Pittsburg. Encounters between users could only occur between user groups on the Pittsburg ramp and below the mouth of the Salmon River.

Improvements to the ramp at Pittsburg would alleviate most congestion. While this ramp would be handling takeouts by floaters from the wild section, total congestion would be at an acceptable level. Improved road access to Dug Bar could increase congestion at that site but at a lower level of use. Shoreline access to Cache Creek would become more congested but manageable since, historically, use was spread throughout the day.

This alternative would have a moderate potential to achieve the desired ROS setting for social encounters as described in Table III-2. There would be some contacts with other users at rapids and access points. The number and duration of contacts would vary from short to moderate duration, but at a level acceptable for a scenic river designation.

ALTERNATIVE G

Under this alternative, there would be levels of mixed use that would vary between weekdays and weekends, with weekdays providing for lower levels of use and weekends with higher levels of use.

Limits on access during weekdays would reduce the potential for encounters between motorized and non-motorized users, enhancing the quality of the experience. Float use continuing into this section of the river from the wild

river, or launches from Pittsburg or Dug Bar could expect a lower level of powerboat use that has been historically lower on Monday through Thursday throughout the river corridor. The percentage of float launches entering this section of the river would also remain low and limits on both power and float use would be implemented based upon monitoring. Congestion at the Pittsburg and Dug Bar launch ramps and at Cache Creek would remain low during weekdays.

A higher rate of on-river encounters would occur on weekends, with an emphasis on providing for powerboat recreation at a level compatible with scenic river designation and a level of float use that considered the effects of Lower Salmon float use on overall river congestion and encounters. Congestion at the improved ramps at Pittsburg and Dug Bar would remain low, while congestion at Cache Creek would increase but remain manageable since, historically, use is spread throughout the day. Some of this increased congestion at Cache Creek would be due to stops by Lower Salmon floaters and its role as a portal to manage powerboat traffic that was not entering the river corridor.

This alternative would have a moderate potential to achieve the desired ROS setting for social encounters as described in Table III-2. There would be some contacts with other users at rapids and access points. The number and duration of contacts would vary from short to moderate duration, but at a level acceptable for a scenic river designation.

PROVIDING FOR THE APPROPRIATE LEVEL OF VISITOR MANAGEMENT

An outdoor recreation experience in a wild and scenic river setting should allow river users the opportunity to test their skill and self-sufficiency to achieve a successful outcome to their trip with as few limitations as possible. This could be accomplished best in a situation where minimal controls were imposed on users once they embarked on a trip. The end result of an unregimented river trip would be a high level of quality associated with the overall experience including the ability to make choices involving challenge and risk, the opportunity for exploration and discovery, and a feeling of accomplishment and satisfaction at the end of the trip.

Wild and scenic rivers are described in the Wild and Scenic Rivers Act by such terms as "inaccessible," "primitive," and "undeveloped." These terms describe the type of different environment a visitor enters when traveling through a wild and scenic river corridor. A certain level of knowledge is required by each visitor in order for the river corridor to retain this type of environment for future river users. Each visitor plays an important part in protection and enhancement of the ORV's which attract the visitor to the area and hold their attention.

Some level of visitor management is necessary to assure the protection and enhancement of the ORV's in the wild and scenic river corridor. However, in order to allow visitors the maximum freedom to experience the challenge of travel through the river corridor, visitor management should be implemented in a manner which does not detract from their experience.

In some alternatives, commercial outfitters with priority use would be limited to specific areas of operation. Some alternatives would allow them to continue to be able to travel into the primary areas upon which their individual businesses were established and in other alternatives they would not be able to do this. This would also apply to their ability to be able to continue to conduct the type of operations on which their past business was based. However, when viewing commercial use as an activity in general, the entire river corridor would remain open to commercial use in all alternatives. As a result, this would not be considered to be a form of visitor management or regimentation that would be applicable to analyzing effects to the visitor management ROS setting.

For the purpose of this analysis, visitor management will be measured subjectively in terms of high, moderate, or low potential for each alternative to meet the ROS settings for visitor management in a manner that will protect and enhance ORV's but not affect the quality of the visitor's experience as a result of numerous and/or burdensome visitor management controls once they have launched their trip into the river corridor. The desired ROS setting for visitor

management in the wild and scenic sections of the river can be found in Tables III-1 and III-2, respectively.

In all alternatives, management of visitor behaviors aimed at protecting the ORV's would be emphasized through user education concentrated at the portals prior to river users leaving on a river trip.

WILD RIVER - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In Alternative A, powerboat use would be unlimited and float use would be limited but able to grow toward maximum numbers of launches, boats per party, and party size.

As overall use increased, it would become increasingly difficult to protect ORV's, even with an active education program at the portals. The degree of challenge and risk associated with the trip would be diminished as a result of the number of river users and the availability of assistance from other users. The number of on-site visitor management controls would increase in an attempt to protect ORV's such as cultural resources, wildlife, and sport fisheries. A greater presence by management and law enforcement personnel would be necessary to deal with resource impacts, protect resources, and deal with conflict between users on the river. The lack of a campsite reservation system combined with high numbers of river users would result in an increasing need for law enforcement to manage conflict at campsites. Implementation of campsite reservations, but continued increases in use, would produce a setting where management of visitors would become highly regimented to manage user conflict. Regimentation of visitors outside of campsites at specific locations such as Kirkwood or at major rapids would be necessary to manage visitor impacts, user conflict, or to protect resources. Closures could be imposed on some sites to assure protection. Installation of signs could be necessary in support of closures and efforts to reduce site impacts.

This alternative would have a low potential to meet the ROS settings for visitor management as described in Table III-1. It would not provide the appropriate setting that would require a great deal of self-reliance through application of outdoor skills, a perception of a high degree of challenge and risk, or subtle visitor management controls or regulations.

The presence of Corps of Engineers navigation (survey) markers from Pittsburg Landing to Sheep Creek would diminish the sense of challenge and risk by reducing the need for self-reliance on river navigation skills and by reducing the need for reliance on maps since river miles shown on the markers would establish a point of reference during a trip.

ALTERNATIVE B

In Alternative B, both powerboat and float use would be allowed to increase, but with maximum limits established on levels of use.

As overall use increased, there would some difficulty in protecting ORV's, even with an active user education program. If daily private powerboat limits of 8 and 16 were set as the upper limits for access, and the trend for single- and two-person floatcraft continued to increase, the magnitude of the change in river experience would be dramatic, affecting the recreation ORV. A campsite reservation system would make travel within the river corridor highly regimented and scheduled for all users, and would resolve some of the issues concerning campsite conflict, but would not address social conflict associated with multiple on-river encounters.

With an increasing volume of powerboat and float traffic, the degree of challenge and risk associated with the trip would be diminished as a result of the number of river users and the availability of assistance from other users. The number of on-site visitor management controls could increase in an attempt to protect ORV's such as cultural resources, wildlife, and sport fisheries. A greater presence by management and law enforcement personnel would be necessary to deal with resource impacts, to protect resources, and deal with conflict between users

on the river. Regimentation of visitors at specific sites such as Kirkwood or at major rapids could be necessary to manage congestion, visitor impacts, user conflict, or to protect resources. Closures could be imposed on some sites to assure protection. Informational signs would be allowed primarily at developed sites, trail junctions, and a limited number of interpretive areas but none would be visible from the river.

This alternative would have a low potential to meet the ROS settings for visitor management as described in Table III-1. It would not provide the appropriate experience setting that would require a great deal of self-reliance through application of outdoor skills, a perception of a high degree of challenge and risk, or subtle visitor management controls or regulations. If the LAC planning process limits on private powerboat access were implemented, this would be especially apparent between Rush Creek and Pittsburg Landing.

The removal of Corps of Engineers navigation (survey) markers from the wild river corridor would enhance the sense of challenge and risk by increasing the need for self-reliance on river navigation skills and the need for map reading skills.

ALTERNATIVE C

In Alternative C, powerboat use would be managed at a level that reflected average use between 1985-1989 and float use would be managed at five launches per day with a 33% reduction in maximum people per party and a maximum of eight boats per party.

Use associated with this alternative would provide for a greater dependence on outdoor skills and self-reliance during a trip. There would be less readily available assistance from other river users, creating a higher degree of challenge and risk associated with the trip. On-site visitor management controls would be less apparent with the exception of a campsite reservation system which would make travel through the corridor much more regimented and scheduled. However, lower numbers of overnight users would make campsite reservations more of a convenience than a necessity. Regimentation of visitors at specific sites other than campsites or on-site controls would be more of an exception than the rule. Fewer contacts with management personnel while on the river would occur.

This alternative would have a moderate potential to meet the ROS settings for visitor management as described in Table III-1. While it would provide the appropriate experience setting that would require a great deal of self-reliance through application of outdoor skills and a perception of a high degree of challenge and risk, a campsite reservation system would add an element of regimentation to all visitors' experience. Other visitor management controls or regulations would be more subtle.

The presence of Corps of Engineers navigation (survey) markers from Pittsburg Landing to Sheep Creek would diminish the sense of challenge and risk by reducing the need for self-reliance on river navigation skills and by reducing the need for reliance on maps since river miles shown on the markers would establish a point of reference during a trip.

ALTERNATIVE D

In Alternative D, motorized use would be excluded during the primary season between Hells Canyon Dam and Kirkwood and mixed motorized and non-motorized use would occur between Kirkwood and Pittsburg Landing.

The absence of motorized use throughout the primary season between Hells Canyon Dam and Kirkwood would create an environment that would require a greater dependence on the application of outdoor skills and self-reliance during a river trip. There would be less readily available assistance from other river users, creating a higher degree of challenge and risk associated with the trip. On-site visitor management controls would be less apparent and unregimented. Fewer contacts with management personnel while on the river would occur. Regimentation of visitors at specific sites such as Kirkwood or on-site controls would be more of an exception than the rule.

This alternative would have a high potential to meet the ROS settings for visitor management

as described in Table III-1. It would provide the appropriate experience setting that would require a great deal of self-reliance through application of outdoor skills, a perception of a high degree of challenge and risk, and subtle visitor management controls or regulations.

The removal of Corps of Engineers navigation (survey) markers from the wild river corridor would enhance the sense of challenge and risk by increasing the need for self-reliance on river navigation skills and the need for map reading skills.

ALTERNATIVE E

In Alternative E there would be exclusive use by motorized and non-motorized users on a bi-weekly basis between Hells Canyon Dam and Kirkwood and mixed use between Kirkwood and Pittsburg.

This alternative would provide different experiences for different types of users. Non-motorized users would experience a greater dependence on outdoor skills and self-reliance during a trip. There would be less readily available assistance from other river users, creating a higher degree of challenge and risk associated with the trip. On-site visitor management controls would be less apparent with the exception of a campsite reservation system which would make travel through the corridor much more regimented and scheduled. Fewer contacts with management personnel while on the river would occur.

Motorized users would have an experience where outdoor skills and self-reliance during a trip would be more dependent upon the sections of the wild river they were traveling through. There would be progressively less readily available assistance from other river users as they traveled into sections of the wild river between Rush Creek Rapid and Wild Sheep Rapid, creating a higher degree of challenge and risk associated with the trip. Since they would not have campsite reservations due to their ease of mobility, their trip would be highly unregimented, enhancing their experience. More contacts with management personnel while on the river would occur due to ease of mobility.

Regimentation of visitors at locations other than campsites or on-site controls would be more of an exception than the rule.

This alternative would have a moderate potential to meet the ROS settings for visitor management as described in Table III-1. It would provide the appropriate experience setting that would require a great deal of self-reliance through application of outdoor skills for floaters but to a lesser degree for powerboaters. Non-motorized users would have a perception of a high degree of challenge and risk while the perception of motorized users would vary, with an increasing perception of challenge and risk as they successfully negotiated the most challenging rapids (Rush Creek, Granite Creek and Wild Sheep) and entered sections of the wild river that required a higher level of skill for access. Floaters would be highly regimented with a campsite reservation system while powerboaters would be able to select campsites on a first-come, first-served basis. Other visitor management controls or regulations would be more subtle.

The presence of Corps of Engineers navigation (survey) markers from Pittsburg Landing to Kirkwood would slightly diminish the sense of challenge and risk by reducing the need for self-reliance on river navigation skills and by reducing the need for reliance on maps since river miles shown on the markers would establish a point of reference during a river trip.

ALTERNATIVE F

In Alternative F, the wild river would be managed for a non-motorized experience year-round.

The absence of motorized use throughout the year between Hells Canyon Dam and Kirkwood would create an environment that would require a high degree of dependence on the application of outdoor skills and self-reliance during a river trip. There would be less readily available assistance from other river users, creating a higher degree of challenge and risk associated

with the trip. On-site visitor management controls would be less apparent and unregimented. Few contacts with management personnel while on the river would occur. Regimentation of visitors while on the river or at sites within the corridor outside of portals would be very low. On-site controls and information facilities would be extremely limited.

This alternative would have a high potential to meet the ROS settings for visitor management as described in Table III-1. It would provide the appropriate experience setting that would require a great deal of self-reliance through application of outdoor skills, a perception of a high degree of challenge and risk, and only subtle visitor management controls or regulations.

The removal of Corps of Engineers navigation (survey) markers from the wild river corridor would enhance the sense of challenge and risk by increasing the need for self-reliance on river navigation skills and the need for map reading skills.

ALTERNATIVE G

In Alternative G, the river would be managed for a variety of experiences for motorized and non-motorized use including a limited opportunity for a non-motorized experience between Wild Sheep Rapid and Kirkwood.

The levels of use associated with this alternative would provide a greater dependence on outdoor skills and self-reliance during a trip for all users. There would be less readily available assistance from other river users, creating a higher degree of challenge and risk associated with the trip. This experience would be enhanced for floaters during the non-motorized periods of time and for powerboaters as they traveled into the sections of river that required greater skill for access.

On-site visitor management controls would be less apparent with the exception that a campsite reservation system could be implemented if other subtle management controls were not successful in reducing campsite competition to acceptable levels. Regimentation of visitors at specific sites such as Kirkwood or on-site controls would be more of an exception than the rule. Contacts with management personnel in some sections of the river would be reduced as a result of non-motorized periods of time.

This alternative would have a high potential to meet the ROS settings for visitor management as described in Table III-1. It would provide the appropriate experience setting that would require an great deal of self-reliance through application of outdoor skills for floaters and powerboaters in a shared use setting. Non-motorized users would have a perception of a higher degree of challenge and risk during non-motorized periods while this perception for motorized users would increase as they successfully negotiated the most challenging rapids (Rush Creek, Granite Creek and Wild Sheep) and entered sections of the wild river that required a higher level of skill for access. It is anticipated there are a sufficient number of mitigation measures available as subtle on-site management controls that could be implemented to avoid the regimentation of a campsite reservation system. Regimentation of visitors at specific sites such as Kirkwood or on-site controls would be more of an exception than the rule.

The presence of Corps of Engineers navigation (survey) markers from Pittsburg Landing to Kirkwood would slightly diminish the sense of challenge and risk by reducing the need for self-reliance on river navigation skills and by reducing the need for reliance on maps since river miles shown on the markers would establish a point of reference during a river trip.

SCENIC RIVER - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In this alternative all uses would be allowed to continue to increase.

As overall use increased, it would become increasingly difficult to protect ORV's, even with an active education program at the portals. The moderate degree of challenge and risk associated with a scenic river trip would be diminished as a result of the number of river users, espe-

cially on peak use days. Self-reliance would be less necessary because assistance from other users would become more readily available. The number of on-site visitor management controls by the Forest Service and other managing agencies would increase in an attempt to protect ORV's such as cultural resources, wildlife, and sport fisheries. A greater presence by management and law enforcement personnel from several agencies would be necessary to deal with resource impacts, to protect resources, and deal with conflict between users on the river. There would be an increasing need for law enforcement personnel to manage conflict at campsites and between groups on the river. Regimentation of visitors outside of campsites at specific locations such as the mouth of the Salmon could become necessary to manage visitor impacts, user conflict or to protect resources. Closures could be imposed on some sites to assure protection. Installation of signs could be necessary in support of closures and efforts to reduce site impacts.

This alternative would have a low potential to meet the ROS settings for visitor management as described in Table III-2. Increasing levels of use and increases in the number of days of peak use would not provide the appropriate experience setting. As a result, there would be less dependence on self-reliance through application of outdoor skills and a reduced perception of a moderate degree of challenge and risk. Visitor management controls or regulations would increase.

ALTERNATIVE B

In Alternative B, use would be allowed to continue to increase. However, levels of use would be monitored in regard to user perceptions of crowding. Mitigation measures would be taken to resolve crowding to avoid establishing limits on all users. These mitigation measures would be taken if monitoring indicated that more than 50% of all boaters felt crowded upstream from the mouth of the Salmon River.

As overall use increased, it would become increasingly difficult to protect ORV's, even with an active education program at the portals and implementation of the mitigation measures. The moderate degree of challenge and risk associated with a scenic river trip would be diminished in conjunction with an associated increase in the number of river users that would take place while it was being determined if the mitigation was successful in reducing crowding, especially on peak use days. Increases in use would make assistance from other users increasingly available, especially during periods of peak use. The number of on-site visitor management controls by the Forest Service and other managing agencies could increase in an attempt to protect ORV's such as cultural resources, wildlife, and sport fisheries while issues relating to crowding were being resolved. A greater presence by management and law enforcement personnel from several agencies could also become necessary to deal with resource impacts, to protect resources, and deal with conflict between users on the river. There would be an increasing need for law enforcement personnel to manage conflict at campsites and between groups on the river. Regimentation of visitors outside of campsites at specific locations such as the mouth of the Salmon could become necessary to manage visitor impacts, user conflict or to protect resources. Closures could be imposed on some sites to assure protection. Installation of signs could become necessary in support of closures and efforts to reduce site impacts.

This alternative would have a low potential to meet the ROS settings for visitor management as described in Table III-2. It could not provide the appropriate experience setting in a timely manner. While mitigation measures were being taken, there would be a diminished dependence on self-reliance through application of outdoor skills, a lowered perception of a moderate degree of challenge and risk, and subtle visitor management controls or regulations would increase. These effects would be most noticeable during periods of high or peak use. These issues might by resolved over a period of time after establishment of specific use levels. However, this would be dependent upon whether or not the use levels addressed periods of peak use and upon how high the use levels would be set.

ALTERNATIVE C

Use associated with this alternative would provide for a greater dependence on outdoor skills and self-reliance during a trip. There would be less readily available assistance from other river users, easily creating a moderate degree of challenge and risk associated with the trip. On-site visitor management controls would be less apparent and regimentation of users would be minimal. Regimentation of visitors at sites in the scenic river or on-site controls would be more of an exception than the rule. Fewer contacts with management personnel while on the river would occur.

This alternative would have a high potential to meet the ROS settings for visitor management as described in Table III-2. It would provide the appropriate experience setting that would require self-reliance through application of outdoor skills in an environment that offered a moderate or higher degree of challenge and risk. Only a few subtle on-site visitor management controls or regulations would be apparent.

ALTERNATIVES D, E, F AND G

In these alternatives, use levels would be established that would protect the ORV's within the river corridor including the experience of the visitor. All campsites would be on a first-come, first-served basis, greatly reducing (in comparison with alternatives A and B) any feeling of regimentation by users. Use levels would be established to assure the degree of challenge and risk associated with the trip would be at a moderate level that was acceptable for a scenic river setting.

Alternatives E and G would enhance the experience by reducing the total number of users in the scenic river corridor on weekdays (Monday through Thursday). This would result in less readily available assistance from other river users and creation of a higher degree of challenge and risk associated with the trip on weekdays compared to weekends.

These alternatives would have a high potential to meet the ROS settings for visitor management as described in Table III-2. They would provide the appropriate experience setting that would require self-reliance through application of outdoor skills in an environment that offered a moderate degree of challenge and risk. The degree of challenge and risk would be enhanced on Monday through Friday in Alternatives E and G. Only a few subtle on-site visitor management controls or regulations would be apparent.

ALL ALTERNATIVES

The presence of Corps of Engineers navigation (survey) markers would be appropriate in the scenic river setting where there would be a moderate expectation of challenge and risk and an associated lower skill level for access.

PROVIDING THE APPROPRIATE LEVEL OF FACILITY DEVELOPMENT FOR THE RIVER CLASSIFICATION

The type of facilities provided for visitors, the amount of on-site modifications, and even the type of materials used in construction and maintenance of facilities are important elements in maintaining the integrity of the wild and scenic river setting. In a wild river, the intent of the legislation is to provide for a "vestige of primitive America" which signifies the need for visitors to experience the river in a natural setting without the conveniences of modern society that would intrude upon the visitor's experience. Structures in a natural setting which visitors associate with a historic, bygone era due to their rustic appearance and architectural character would enhance the experience of visitors. In a scenic river, the intent of the legislation allows for additional access, but with a goal of providing access to a natural setting where human presence and activities take place, but remain subordinate and are dominated by the landscape.

The presence of facilities or other types of on-site modifications affect the expectations of a person entering the river canyon and the resulting quality of their experience since structures associated with facilities become a component of the visual landscape. Their purpose and need in regard to the recreation ORV must be

weighed upon whether or not they meet a need for resource protection and/or they provide the appropriate level of user comfort and convenience at a level that is appropriate within the landscape of a backcountry river setting. This in turn becomes a measure of how well the natural setting is maintained to protect the landscape and the environment from excessive modern intrusions and the effects of those intrusions on the overall recreation experience of future generations of river users.

There is a need to provide a greater level of facility development at portal areas to accommodate the education of users in protection of the river resources, to provide users with the means to access the river corridor, and to provide facilities and services necessary for visitors who may congregate at road end as their only means of experiencing the wild and scenic river setting.

One type of facility which would be phased out in all alternatives are pit toilets at dispersed river campsites. The purpose of this phase out would be to address public health issues, archaeological concerns, and visual impacts on the river bars. This would result in implementing a solid human waste carryout program and removal of the semi-permanent structures associated with pit toilets. There has been sufficient technological progress made in recent years in carryout systems and off-site disposal facilities to make full implementation of this program feasible by 1996. Removal of the structures associated with this program would be viewed as enhancing the experience from the standpoint of removal of non-historic structures (outhouses) from many river campsites throughout the river corridor.

In all alternatives, low impact camping practices would be encouraged through user education and requirements for compliance with conditions of use on permits year-round for all activities in the canyon. Low impact camping practices would enhance the recreation ORV by reducing the need for facilities solely for the convenience or comfort of river users or makeshift construction of facilities by users for short-term convenience. These type of facilities detract from the natural visual landscape of the river canyon. An assumption made in this analysis was that current technology provides a great variety of light-weight equipment that can be easily transported into and out of the river corridor by the majority of visitors to accommodate all of their needs while in the area. This includes equipment for managing solid human waste carryout, firepans and charcoal, portable tables, and other camping equipment.

In all alternatives, historic structures would be managed under the guidelines of the *Snake Wild and Scenic River Corridor Structures Management Plan* (reference analysis file) or subsequent revisions of the plan and *The Secretary of the Interior's Standards for Historic Preservation Projects*.

In all alternatives, any significant construction, modification, or removal of significant historic or non-historic structures within the river corridor at Management Area 8 or 16 sites, other than stabilization and routine maintenance, would require environmental analysis and an appropriate level of public involvement.

In all action alternatives, all underground fuel storage tanks, barrels, and above-ground fueling facilities would be eliminated with the exception of the administrative fueling facilities at Pittsburg Landing which meet Environmental Protection Agency standards. This would protect and enhance ORV's by reducing the potential for fuel spills.

In all action alternatives, hitching rails for administrative and recreational use of livestock would be provided at Bernard Creek, Saddle Creek, Camp Creek, and Battle Creek to protect and enhance ORV's by minimizing resource damage and social conflicts.

In all action alternatives in both the wild and scenic river, all docks located at Management Area 16 sites would be allowed to remain in place unless specifically noted in the alternative. These would include Hells Canyon Creek, Temperance Creek, Pittsburg Administrative Site, Copper Creek, and Cache Creek. Tie rings would be allowed at all Management Area 16 sites unless specifically noted in the alternative and would not be considered to have an effect on the facility development ROS at these sites.

In all action alternatives in both the wild and scenic river, all new scientific monitoring stations would be installed to minimum visual impact standards within the river corridor. If the type of equipment necessary for use could not meet appropriate standards, additional steps would be taken to mitigate visual impacts including location of the equipment out of immediate view of the river, screening, or camouflage. All existing monitoring equipment would be required to meet minimum visual impact standards and modified if necessary. This would protect and enhance the recreation ORV by maintaining the visual quality of the the landscape.

In all action alternatives, the number of signs within Management Area 8 (general corridor and historic structures) and near scientific monitoring stations would be limited by guidelines for visual quality objectives of primitive and retention in the wild and scenic sections, respectively. Signs at Management Area 16 sites (administrative and recreation sites) would meet visual quality objectives in accordance with site development plans and the Secretary of Interior's standards for historic preservation projects. Managing signs to levels that would meet these VQO's would protect and enhance the recreation ORV.

There would be greater, though still limited, evidence of development at widely dispersed locations within the scenic river corridor as compared to the wild river. Any development would be comprised of structures associated with historic, pastoral, or recreational occupancy and would not detract from the visual qualities of the landscape associated with scenic river designation.

For the purposes of this analysis, facility development is measured subjectively in terms of high, moderate, or low potential for each alternative. This would be to achieve the desired ROS setting by limiting the amount of development to those types that protect and enhance ORV's and provide for the appropriate level of user comfort and convenience relative to location within the corridor (general river, portal or specific site) and river designation (wild or scenic). The desired ROS settings for the wild and scenic sections of the river can be found in Tables III-1 and III-2, respectively.

WILD RIVER - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In this alternative, pit toilets would be removed but picnic tables would remain at dispersed river campsites. Toilet facilities and picnic tables would be maintained at all administrative and developed recreation sites (Management Area 16). Additional dispersed campsites could be developed with the addition of more picnic tables at new sites. The silos at Kirkwood would remain in place. There would be no specific guidelines to mitigate the visual impact of existing scientific monitoring stations. Additional signs, docks, tie rings, and hitching rails could be installed at locations along the river if necessary for user convenience.

This alternative would have a low potential of achieving the ROS setting for facility development as described in Table III-1. Retention and/or the addition of obtrusive, human-created structures in the wild river corridor would not protect or enhance ORV's. Many facilities would be provided for user comfort and convenience that would not be appropriate to a wild river setting.

ALTERNATIVE B

In this alternative, pit toilets would be removed but picnic tables would be provided at some sites. Toilet facilities and picnic tables would be maintained at all administrative and developed recreation sites (Management Area 16).

The silos at Kirkwood would be removed after conducting the appropriate environmental analysis.

Interpretive facilities would be provided only at portal areas and administrative sites. Informational signing would be located primarily at developed sites, trail junctions, and a limited number of interpretive areas. Signs would not be visible from the river.

Facilities other than those providing river access at portals constructed for boat landings would be limited to specific sites (dock at Temperance Creek and existing tie rings and cable at Sheep Creek and tie rings at Sand Creek and Kirkwood). Additional boat landing aids would require public review and involvement.

Additional hitching rails would be provided away from beaches and campsites if necessary for resource protection or to minimize conflicts.

This alternative would have a moderate potential of achieving the ROS setting for facility development as described in Table III-1. Some facilities such as picnic tables at dispersed river campsites would be provided for user comfort and convenience. There would be a potential for additional boat landing aids including docks. Such structures would not enhance the ORV since they would not be appropriate to a wild river setting.

ALTERNATIVES C, D, AND E

In these alternatives pit toilets would be removed from all locations in the wild river corridor. Toilet facilities would be maintained at all administrative and developed recreation sites (Management Area 16). Picnic tables would be removed from all locations except Kirkwood Historic Ranch.

The silos at Kirkwood would be removed after conducting the appropriate environmental analysis.

The only public dock allowed in the wild river would be the dock at the Hells Canyon Creek portal which would remain available for both motorized and non-motorized boat access by physically-challenged visitors, private users, and commercial passengers. The dock at Temperance Creek would be allowed to remain in support of domestic sheep grazing operations only. Tie rings would be provided as needed at site specific locations within the wild river corridor.

These alternatives would have a high potential of achieving the ROS setting for facility development as described in Table III-1. The overall number of obtrusive, human-created structures in the wild river corridor would be reduced which would protect and enhance ORV's. The level of facilities provided for user comfort and convenience would be appropriate for a wild river setting.

ALTERNATIVE F

In this alternative, pit toilets and picnic tables would be removed from all locations within the wild river corridor. Toilet facilities would be maintained at all administrative and developed recreation sites (Management Area 16).

The dock at Hells Canyon Creek could be removed to avoid maintenance expenses since no motorized use would be allowed on the wild river year-round. The dock at Temperance Creek would not be necessary since, without motorized access, there would be no need for a dock. Tie rings would be left at Hells Canyon Creek to assist in staging equipment prior to the beginning of float trips but tie rings at all other locations in the wild river would be removed.

Kirkwood Historic Ranch would be removed as a Management Area 16 site and changed to a Management Area 8 site, to emphasize the historic structures on site but remove it as a staffed recreation site. Since the site would be abandoned as a staffed location, any interpretation of the site would be done from Pittsburg Landing or Hells Canyon Creek. The historic structures would be emptied and receive periodic structural maintenance only. All structures except the National Register buildings (Jordan House, Sterling Cabin, Hanna Cabin, and Carter Mansion) would be removed, including the Kirkwood silos after the appropriate environmental analysis was completed, and the site naturalized. The farm implements and associated interpretive signs would be removed to avoid vandalism or theft.

This alternative would have a high potential of achieving the ROS setting for facility development as described in Table III-1. The overall number of obtrusive, human-created structures in the wild river corridor would be reduced substantially which would protect and enhance ORV's. The level of facilities provided for user

comfort and convenience would be appropriate for a wild river setting.

ALTERNATIVE G

In this alternative, pit toilets would be removed from the entire wild river corridor except at Sheep Creek and Salt Creek (Management Area 16) to accommodate outfitter operations and administrative operations at those sites, respectively. Toilet facilities would be maintained at all administrative and developed recreation sites (Management Area 16) except at Sand Creek where carryout of solid human waste would be required.

Picnic tables would be removed from all dispersed campsites within the wild river corridor. They would be allowed to remain at all administrative and developed recreation sites (Management Area 16 sites).

The silos at Kirkwood would be removed after the appropriate environmental analysis was completed.

The only public dock allowed in the wild river would be the dock at the Hells Canyon Creek portal which would remain available for physically-challenged visitors who were accessing the river for both private and commercial motorized and non-motorized boating. The dock could not be expanded to a size that would allow additional boat slips. The dock at Temperance Creek would be allowed to remain in support of domestic sheep grazing operations only. Tie rings would be allowed at Management Area 16 sites only, with the exception that a maximum of one inconspicuously placed tie ring could be located on each shoreline at the bottom of Rush Creek Rapids and Granite Creek Rapids (a maximum of four tie rings, two per rapid on opposite sides of the river) for moorage of the Forest Service boat in support of law enforcement and/or search and rescue activities in the immediate vicinity of the rapids.

A maximum of two hitching rails per site would be installed at specific locations along the river but only at locations where it was necessary to reduce impacts to resources or social conflict as a result of concentrated use by recreational livestock. Forest Service personnel, contractors, and permittees would be required to manage their riding and packing stock using low-impact techniques in the wild river corridor. Hitching rails would be the exception rather than the rule and would be installed as a temporary mitigation measure only in support of implementation of a low-impact education program for users of recreational livestock. All hitching rails would be located out of view of the river and away from river campsites.

This alternative would have a high potential of achieving the ROS setting for facility development as described in Table III-1. The overall number of obtrusive, human created structures in the wild river corridor would be reduced which would protect and enhance ORV's. The level of facilities provided for user comfort and convenience would be appropriate for a wild river setting.

SCENIC RIVER - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In this alternative, pit toilets would be removed but picnic tables would remain at dispersed river campsites. Toilet facilities and picnic tables would be maintained at all administrative and developed recreation sites (Management Area 16). Additional dispersed campsites could be developed with the addition of more picnic tables at new sites. The metal shed at Pittsburg would remain in place. There would be no specific guidelines to mitigate the visual impact of existing scientific monitoring stations. Additional signs, docks, tie rings, and hitching rails could be installed at locations along the river if necessary for user convenience.

This alternative would have a low potential of achieving the ROS setting for facility development as described in Table III-2. Retention and/or the addition of obtrusive, human created structures in the scenic river corridor would not protect or enhance ORV's. While the presence of picnic tables at some sites would not detract from a scenic river setting, the potential for continually adding campsites and/or facilities for user comfort and convenience could create a

level of development that would not be appropriate to a scenic river setting.

ALTERNATIVE B

In this alternative, pit toilets would be removed but picnic tables would be provided at some sites. Toilet facilities and picnic tables would be maintained at all administrative and developed recreation sites (Management Area 16).

The metal shed at Pittsburg would be removed after conducting the appropriate environmental analysis.

Interpretive facilities would be provided only at portal areas and administrative sites. Informational signing would be located primarily at developed sites, trail junctions, and a limited number of interpretive areas. Signs would not be visible from the river.

Facilities other than those providing river access at portals constructed for boat landings would be limited to specific sites (docks and tie rings at Pittsburg Administrative Site and Cache Creek, dock at Copper Creek, tie rings at Pittsburg Landing Recreation Site and Mountain Chief Mine Tunnel). Additional boat landing aids would require public review and involvement.

Additional hitching rails would be provided away from beaches and campsites if necessary for resource protection or to minimize conflicts.

This alternative would have a moderate potential of achieving the ROS setting for facility development as described in Table III-2. While the presence of picnic tables at some sites would not detract from a scenic river setting, the potential for continually adding facilities such as docks for user comfort and convenience could create a trend in the level of development that would not be appropriate to a scenic river setting.

ALTERNATIVES C, D, E AND F

In these alternatives pit toilets would be removed from all dispersed campsites in the scenic river corridor. Toilet facilities would be maintained at all administrative and developed recreation sites (Management Area 16). Picnic tables would remain available for use.

The metal shed at Pittsburg would be removed after conducting the appropriate environmental analysis.

These alternatives would have a high potential of achieving the ROS setting for facility development as described in Table III-2. The level of facility development and the number of facilities provided for user comfort and convenience would be appropriate for a scenic river setting.

ALTERNATIVE G

In this alternative pit toilets would be removed from all dispersed campsites in the scenic river corridor. Toilet facilities would be maintained at all administrative and developed recreation sites (Management Area 16) with the exception of Tryon Creek Administrative Site where carry-out of human waste would be required. Picnic tables would remain available for use.

The metal shed at Pittsburg would be removed after conducting the appropriate environmental analysis.

A maximum of two hitching rails per site would be installed at specific locations along the river but only at locations where it was necessary to reduce impacts to resources or social conflict as a result of concentrated use by recreational livestock. Forest Service personnel, contractors, and permittees would be required to manage their riding and packing stock using low impact techniques in the scenic river corridor. Hitching rails would be the exception rather than the rule and would be installed as a temporary mitigation measure only in support of implementation of a low impact education program for users of recreational livestock. All hitching rails would be screened from view of the river and located away from river campsites.

Tie rings could be installed at some interpretive locations such as the Mountain Chief Mine Tunnel for user convenience. This would not detract from the scenic river setting since they are visually unobtrusive and historic steamboat rings

are located at some sites within the scenic river corridor.

This alternative would have a high potential of achieving the ROS setting for facility development as described in Table III-2. The level of facility development and the number of facilities provided for user comfort and convenience would be appropriate for a scenic river setting.

ABILITY FOR VISITORS TO ACHIEVE THEIR DESIRED RECREATION EXPERIENCE

River-oriented recreation is the main attraction for visitors to the Snake River and has been identified as an outstandingly remarkable value. Whitewater boating is the predominant river-oriented recreation. Name recognition of Hells Canyon creates an expectation and draws people to the river and canyon, particularly people interested in recreating on or near the river. For some visitors, the "wild" designation creates an unrealistic expectation of remoteness and primitiveness similar to what they believe can be found in Congressionally-designated "wilderness" areas in perpetuity.

Historically, the inability of floaters to achieve a recreation experience similar to a wilderness trip and their feelings about the unequal use allocation between float and powerboat recreationists has produced the major social conflict on the Snake River.

The Snake River, as currently managed, provides a mix of powerboat and floatcraft use which can result in some visitors failing to achieve their desired recreation experience for the full duration of their trip. Many people view a classification of "wild river" as the equivalent of a wilderness designation. On the Snake River, this incorrect perception of wild river classification is further supported in the minds of recreationists because portions of the designated river corridor on both sides of the river adjoin designated wilderness boundaries.

Both motorized and non-motorized users conclude the intent of the classification is to provide an experience characterized by moderate or higher levels of solitude for the full duration of their trip. Floaters see the adjacent wilderness designations as support for their contention that motors should not be allowed on portions of the river because they would seriously detract from their expectation. Some non-motorized trail users share the floaters' perspective. Powerboaters see this rationale as a constant threat to their method of access to the river and inconsistent with the language in the HCNRA Act that acknowledges both types of use as valid. They view the Snake River as the last major, domestic river available for whitewater powerboating and feel they have few options for similar use on a regional basis compared to the number of rivers available exclusively for floating. Backcountry pilots share the perspective of powerboaters when these concerns are applied to access for recreational aviation.

There are real challenges associated with managing the river in a way that visitors can have the opportunity to achieve their desired recreation experience for the greatest length of time during their trip in light of the the complexity created by the designations of "wild" and "wilderness." From the user survey, many powerboaters (approximately 39%) indicated that visiting a wilderness was an important reason for their trip on the Snake River even though the Snake River is not designated wilderness (reference analysis file). Motors are generally prohibited in most Congressionally-designated wilderness. However, it is not inappropriate to manage a wild river to provide for periods of time where a visitor can experience solitude or isolation from the sights and sounds of other users in a remote setting. This type of opportunity would enhance the wild river experience of both floaters and powerboaters, especially in the early morning or evening hours at campsites.

Many commercial outfitters advertise Hells Canyon trips as "wilderness trips" in order to attract business and may inadvertently lead customers to a false expectation. As a result, passengers on commercial float trips may be surprised or upset by the presence of powerboats on the river while commercial powerboat passengers may be perfectly satisfied with their trip even though both types of users were under the impression that they were going on a "wilderness" river trip.

In general, it appears that many floaters visiting a wild river expect a non-motorized recreational experience in a setting with a very high degree of naturalness while many powerboat recreationists visit wild rivers to recreate in a natural setting. Somewhere in between is the correct mix of use to provide the variety of experiences and opportunity for both users to achieve their expectations for the longest period of time possible during their trip while also meeting the intent of the legislation which guides use of the area. At the same time, there is a responsibility on the part of river users and commercial outfitters to acknowledge and learn about the legal guidelines that determine what a wild river experience should be on the Snake River.

Public response to these types of issues indicated that fairness and equity were important factors in regard to access and management of use on the river. However, there was also an indication that the issue of fairness and equity could only be resolved if the quality of the experience was assured. As a result, three factors needed to be combined in determining use allocations for the Snake River including:

- A fair and equitable distribution of recreational use.
- A level of use that would protect and enhance the quality of the river recreation experience.
- An opportunity for users to achieve their expectations of a quality river experience based upon perception by providing a variety of opportunities.

The four indicators of comparison that were used to resolve this issue included the following:

- Fair rules for access vs. rules that favor one group over another.
- Motorized access vs. non-motorized access.
- Commercial use vs. private use.
- Snake River opportunities vs. regional river opportunities.

For the purposes of this analysis, fairness and equity in providing river users with an opportunity to achieve their desired river recreation experience were measured subjectively in terms of high, moderate, or low potential for each alternative to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations.

Appendix C provides information on the different legal requirements for management of the Snake River. Appendix L describes a river education plan that will be developed in part to assure a better informed river user in an effort to enhance the quality of their experience specific to the unique wild and scenic setting of the Snake River.

WILD SECTION - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In Alternative A, growth in powerboat use would continue on an unlimited basis. While the number of daily float launches would be restricted during the primary season, the number of people and boats per party could continue to grow. The quality of the recreation experience for both powerboaters and floaters would diminish proportionately over time as growth continued. The Snake River would continue to provide the maximum recreation access available for whitewater powerboating. Floaters who desired a higher level of solitude would be displaced although this type of river experience would remain available on a number of other regional rivers.

The issue of float use being regulated in part of the river while powerboat use remained unregulated throughout the corridor would not be resolved. Social conflict between powerboaters and floaters over the opportunity for differing recreation experiences and the quality of those experiences could be expected to increase.

Private aircraft use would continue to have unlimited access to Big Bar on the Idaho side of the river but Sluice Creek would remain closed. Commercial aviation would be restricted. Use levels would remain relatively low and stable because of the necessary skill required for flying and landing within the river corridor. This type of experience would also remain available on several other rivers in the region.

Land-based recreationists would continue to have unlimited access to the river corridor. Increased use of the river trail on the Idaho side could be expected due to improved access to the trail system at Pittsburg Landing and unlimited powerboat access to the trailhead in the upper river. This could negatively affect the quality of the experience. Trail users with expectations of a non-motorized experience (absence of sound from motors) could be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region.

Access to Kirkwood Historic Ranch would continue for both motorized and non-motorized river users but the quality of the experience would diminish proportionately over time as growth continued. Increased day-use by hikers between Pittsburg and Kirkwood would produce the greatest increase in trail use and the demand by hikers for overnight camping at Kirkwood could increase. The overall result of increased trail use by horses and hikers could lead to increased competition for river campsites. Unless a campsite reservation program was initiated, floaters would continue to feel that motorized users had an unfair advantage in obtaining campsites due to ease of access, especially as powerboat use increased. The quality of the experience for all users would be diminished without a campsite reservation system.

Improvements at trailheads outside the river corridor in both Idaho and Oregon with trails leading to the Snake River would produce additional pressure on campsite availability in the river corridor.

This alternative would have a low potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would allow use of the river by motorized and non-motorized users, it would heavily favor motorized and commercial use at the expense of all other users for the opportunity to achieve their desired recreation experience. It would not provide fair rules for access for both motorized and non-motorized users and floaters would continue to have upper limits on use during the primary season while powerboaters would have no use limits.

ALTERNATIVE B

In Alternative B, the ability to achieve a quality backcountry whitewater boating experience would be limited. Even though all river users would have maximum limitations, use would increase toward these limits and, as growth continued, affect the quality of the experience. The recreation experience for both powerboaters and floaters could diminish proportionately over time to levels that would be unacceptable for providing a backcountry experience in a wild and scenic river setting, especially with the large growth allowed in commercial powerboating and the increased numbers of people and boats per party for floaters. The Snake River would continue to provide a high degree of recreation opportunity available for a whitewater backcountry experience for powerboaters but the quality of that experience would depend on daily levels of use in the wild river. Floaters who desired a higher degree of solitude would be displaced although this type of river experience would remain available on a number of other regional rivers.

The issue of fairness of the management system would be somewhat resolved because floaters and powerboaters would have upper limits on use set. However, equal access would become an issue. For instance, commercial powerboat use would be allowed to increase at a substantially higher level over current use while private motorized use would remain relatively unchanged. This could produce some displacement of private motorized users. Increasing the established use levels for most user groups to the upper limits set by the alternative would place more people on the river. As a result, social conflict would increase between powerboaters and floaters and social conflict would probably also increase among commercial and private interests especially with the inequity in access between private and commercial powerboaters.

The opportunity for private aircraft use in this section of the river could double with unlimited access at both Big Bar and Sluice Creek. Commercial aviation would be restricted. Use levels would likely remain relatively low and stable because of the necessary skills required for flying and landing within the river corridor. This type of

experience would be available on several other rivers in the region.

Land-based recreationists would continue to have unlimited access to the river corridor but drop camps would have to compete with river users for campsite reservations during the primary season. Increased use of the river trail on the Idaho side could be expected due to improved access to the trail system at Pittsburg Landing and the continued opportunity for powerboat access to the trailhead in the upper river. Increasing trail use by horses and hikers could lead to increased competition for river campsites in certain areas along the river, especially at Kirkwood. Trail users with expectations of a non-motorized experience (absence of sound from motors) could be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region.

Improvements at trailheads outside of the river corridor in both Idaho and Oregon with trails leading to the Snake River would produce additional pressure on campsite availability in the river corridor.

Access to Kirkwood Historic Ranch would continue for all river users but the quality of the experience could diminish proportionately over time as the number of people on the river rose toward maximum limits. Increased day-use by hikers between Pittsburg and Kirkwood would produce the greatest increase in trail use and the demand by hikers for overnight camping at Kirkwood could increase.

This alternative would have a low potential to protect and enhance the quality of river recreation opportunities to meet a variety of user expectations. While it would provide for fair rules of access for both motorized and non-motorized river users and provide access for both floaters and powerboaters, it would heavily favor motorized and commercial use at the expense of all other users to have the opportunity to achieve their desired recreation experience.

ALTERNATIVE C

In Alternative C, improvements in the quality of the backcountry whitewater boating experience would occur immediately upon implementation as a result of the change in use levels. Maximum use levels for all river users would be approximately the same as the 1985-1989 levels. The quality of the experience would be enhanced for both powerboat and floatcraft river users. However, the amount of access associated with this experience would not be considered to be high enough to meet the needs of motorized river user based upon their perception of a backcountry experience.

While there would still be floaters dissatisfied with the level of motorized use and who desired a higher level of solitude, the amount of displacement of these users would be relatively low and the type of river experience they desired would remain available on a number of other regional rivers. This displacement could possibly be offset by higher demand from floaters who would be satisfied with this level of motorized use, resulting in a greater utilization of launches. The overall effect could lead to an increased level of use for floaters.

Limits on commercial powerboaters who provide jetbacks in place of vehicle shuttle services could displace floaters who have limited time to spend on a river trip and depend on jetback services. Jetback service would be limited by the daily limits on commercial powerboat use.

The issue of fairness and equity of the management system would only be partially resolved. Launch reservations would be required for all river users. However, equal access would remain an issue with motorized users in several areas including:

- The inequitable number of boats allowed per float trip when compared to motorized use, i.e., one boat launch for powerboats and eight boats per launch for floaters.

- The ability of floaters to increase use by using a greater number of launches as demand increased. This would be in comparison with limits allowing no growth for powerboaters.

- The lack of a similar recreation opportunity for powerboat users on other regional rivers compared with the variety of opportunity for floatcraft users.

- Among comparison of private users, the opportunity for a greater number of people to access the river on a float trip (20) compared to a powerboat trip (private powerboats are not generally designed for larger groups).

These factors would continue to cause social conflict among the two user groups but at a lower level on the river due to decreased numbers of powerboaters. Powerboat users would be displaced into the scenic section of the river or onto the few other rivers in the region that offered a similar type of recreation experience. The ability of other regional rivers or the scenic section of the river to provide this same type of recreation opportunity for whitewater powerboat use and absorb the displaced use would be marginal.

The opportunity for private aircraft use in this section of the river could double with no restrictions at Big Bar and Sluice Creek. Commercial aviation would be restricted. Use levels could be expected to remain relatively low and stable because of the necessary skill required for flying and landing within the river corridor. This type of experience would be available on several other rivers in the region.

Land-based recreationists would continue to have access to the river corridor but drop camps would have to compete with river users for campsite reservations during the primary season. Limits on commercial powerboat use would result in less opportunity for drop camps and some displacement. Commercial powerboat access to trailheads on the upper end of the wild river would continue to be available but only within the maximum daily limits for boat trips, resulting in an overall decrease in opportunity from the upper end of the canyon during the primary season and some user displacement.

Increased use of the river trail on the Idaho side could still be expected due to improved access to the trail system at Pittsburg Landing. Increased day-use by hikers between Pittsburg and Kirkwood would produce the greatest increase in trail use and the demand by hikers for overnight camping at Kirkwood would increase. The overall result of increased trail use by horses and hikers could lead to increased competition for river campsites in certain areas along the river. Because of limits on powerboat use, the amount of displacement of trail users expecting a non-motorized experience (absence of sound from motors) would be low. If displacement occurred, this type of opportunity would be available on several other rivers in the region.

Improvements at trailheads outside the river corridor in both Idaho and Oregon with trails leading to the Snake River would produce additional pressure on campsite availability in the river corridor.

Access to Kirkwood Historic Ranch would continue for both powerboaters and floaters but the quality of the experience would improve with lower numbers of users, giving visitors a better opportunity for personal interaction with interpreters and less potential for crowding at the site.

This alternative would have a moderate potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would provide for rules of access for both motorized and non-motorized river users, balance commercial and private use, and provide access for both floaters and powerboaters, it would not provide a fair opportunity for a motorized experience from a regional river perspective.

ALTERNATIVE D

In Alternative D, achieving a quality river recreation experience for non-motorized users between the Dam and Kirkwood would occur immediately upon implementation. Motorized use would be excluded from this section of the river during the primary season including kickers on floatcraft. This would enhance the quality of the experience for floaters during the primary season, providing a high degree of solitude that would meet their expectations for a wild river,

backcountry experience. Powerboat users would still have unlimited access to this section of the river during the secondary season, but would see this as an unfair system of distributing use in the wild river.

The exclusion of motorized use during the primary season upstream from Kirkwood would not allow powerboaters an opportunity for a backcountry whitewater visit during the best time of year, considering weather and water conditions. The result would be a large and immediate displacement of commercial and private powerboat use to the wild river below Kirkwood and into the scenic section of the river. Since the rapids downstream from Kirkwood do not exhibit the same degree of difficulty of rapids above Kirkwood, the quality of the recreation experience for powerboaters would be substantially diminished. The ability of other regional rivers to provide this same type of recreation opportunity for whitewater motorized use and absorb the amount of displaced use would be marginal. There is a high probability that some powerboaters would be displaced permanently from this type of backcountry recreation opportunity.

The exclusion of commercial powerboat use at Hells Canyon Creek could displace floatcraft users who have limited time to spend on a river trip and depend on jetback services in place of vehicle shuttle services. This lack of convenience of jetback services would be negligible when compared to the increased quality of the backcountry river experience for floaters and the opportunity for shorter trips for displaced users would be available on other rivers within the region.

The exclusion of motorized access to Sheep Creek Ranch during the primary season would require transporting supplies by floatcraft or by trail. While commercial powerboat use to the Sheep Creek Ranch would be eliminated during the primary season, the facilities could be used as lodging for overnight float trips or trail users. Since the structures are managed to maintain their historic integrity, the availability of overnight lodging at this facility could enhance the backcountry experience for some floaters, offsetting the elimination of commercial powerboat access during the primary season. However, it could make the logistics of operating it as an overnight lodge less desirable, with maintenance reverting back to the Forest Service if there was no interest in bidding on the permit.

The issue of fairness of the management system would be constantly challenged, particularly from powerboaters who would be excluded from a historical use. Equity of access would remain an issue with motorized users, including:

- Exclusive floatcraft use compared to total exclusion of powerboat use during the primary season.
- The right to access the river based on historic use.
- The language in the HCNRA Act specific to acknowledging the validity of motorized use on the Snake River.
- The opportunity for float use to continue to increase with the option for greater numbers of launches as demand increased. This would be compared to no river access for powerboaters during the primary season.
- The lack of a similar recreation opportunity for powerboat users on other regional rivers, including downstream on the Snake River, compared with the variety of opportunity for floaters.

Recreational access for all aircraft use in this section of the river would be eliminated in order to achieve a maximum level of solitude for floaters and trail users. Since this use is relatively low, a minimum of displacement would occur and this type of experience would still be available on several other rivers in the region.

During the primary season, land-based recreationists and drop camps would essentially be eliminated from the upper river except for the trail to Stud Creek and recreationists who accessed the river corridor from higher elevation trailheads on the Oregon and Idaho sides of the river and from Pittsburg Landing. This would be the direct result of the exclusion of commercial powerboat transportation from Hells Canyon

Creek to trailheads in the upper river corridor. Trail use from the bench country into the river corridor could be expected to concentrate at locations where these trails reached the river and could produce some competition for river campsites at these locations.

The elimination of commercial powerboat use during the primary season could make commercial powerboat service from Hells Canyon Dam economically unfeasible if only operated during the secondary season. This could result in eliminating the business, resulting in no river access for drop camps or trail users from Hells Canyon Creek year-round unless the access was provided by floatcraft or private motorized watercraft during the secondary season.

Elimination and/or reduction in opportunity for drop camps or trail use access from Hells Canyon Creek would displace these users to other regional rivers where this opportunity was available or to Pittsburg or Dug Bar for access to the river corridor and trail system.

Increased use of the river trail on the Idaho side could still be expected due to improved access to the trail system at Pittsburg and the desire for a solitude experience. Increasing trail use by horses and hikers could lead to increased competition for river campsites in certain areas along the river. Improvements at trailheads outside of the river corridor in both Idaho and Oregon with trails leading to the Snake River would produce additional pressure on campsite availability in the river corridor. Increased day-use from Pittsburg Landing and increased use by overnight trail users and associated competition for campsites could result in displacement of some river users to the scenic section of the river or land-based recreationists to locations outside of the river corridor. Between Kirkwood and Pittsburg where limited campsites are available, competition for campsites could be a factor, even with a campsite reservation system. During the 1991 primary season, only about 7% of Kirkwood visitors camped overnight (reference analysis file). With trail access into a non-motorized river area upstream from Kirkwood available, the demand at Kirkwood could increase although temperature extremes during the summer months could partially offset this demand.

Access to Kirkwood Historic Ranch would continue for both motorized and non-motorized river users but the quality of the experience would improve with limited numbers of users being able to access the site by river, giving them a better opportunity for personal interaction with interpreters and less potential for crowding at the site.

Between Kirkwood and Pittsburg there would still be a good opportunity for motorized whitewater recreation on a basis of equal access for commercial and private powerboaters. The number of daily trips for private and commercial powerboat users would be equal, resulting in a slightly lower level of use from the current situation for both user groups and closer to 1985-1989 use levels. This would provide a balance of motorized and non-motorized use. Floatcraft users could avoid some motorized use by traveling through this section of the river prior to or after the departure of daily motorized commercial tour boats. These boats would operate on a fairly routine schedule and most of them would be at specific places on the river during specific periods of time.

Continued access to Kirkwood would provide an overall positive effect for river users. However, the short length of river between Kirkwood and Pittsburg, the competition from displaced powerboaters from the upper river, and limited campsites would greatly diminish the positive effect of providing access to Kirkwood for powerboat users. Kirkwood would become a transition point for floaters where they would interact with powerboaters prior to continuing downstream. The change in recreation experience provided at Kirkwood should prepare them for the change in their on-river experience as they travel downstream from Kirkwood. Floaters who desired a continuation of a higher degree of solitude in this section of the river would not be displaced because the solitude experienced in the upper river would be the driving force in determining their river trip. However, the prospect of continued powerboat traffic downstream could cause them to terminate their trip at Pittsburg, diminishing the possibility of social conflict downstream.

The ability of other regional rivers to provide this same type of recreation opportunity for white-

water powerboat use and absorb the displaced use would be marginal at best. The opportunity for a longer float trip with a solitude experience would remain available on a number of other regional rivers or by spending additional time in the upper river.

This alternative would have a low potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would provide for fair rules of access for both motorized and non-motorized river users and balance commercial and private use, it would heavily favor a non-motorized experience and not provide for a fair opportunity for a motorized experience from a regional river perspective during the primary season.

ALTERNATIVE E

Alternative E provides for exclusive biweekly use by non-motorized and motorized river users between Hells Canyon Dam and Kirkwood during the primary season and would provide a quality backcountry whitewater recreation experience immediately upon implementation.

This alternative provides users with an opportunity for a backcountry whitewater experience based on their perception of levels of use and choice of transportation to achieve the experience. The immediate effect is the elimination of social conflict brought about by differences in perception between many powerboaters and floaters concerning levels of combined use that would allow each group to achieve a quality recreation experience when they were on the river at the same time. While an increase in use would be allowed during the "on" week for each user group, the elimination of the alternate user group every other week would result in reduced use levels for all user groups, protecting and enhancing the ORV's. Providing each user group with the desired recreation experience and managing use levels to achieve the desired experience would address the issue of fair and equitable treatment of users.

The exclusive week would run from Thursday through Wednesday of each week, allowing each user group the opportunity for weekend use during each exclusive week.

Non-Motorized Week

From Hells Canyon Dam to Kirkwood, all powerboat use would be excluded during the exclusive non-motorized week. This would include kickers on floatcraft as well as jetbacks. By eliminating competition with powerboaters for campsites, campsite reservations for all floaters in this section of the river would be issued on a first-come, first-served basis at the time of launch at Hells Canyon Creek. Due to less competition for campsites, the allocation of daily launches would be increased to four private, three commercial. To avoid launch ramp congestion, launch permits would be issued on a morning only (8:00 a.m. to 12:00 p.m.) or afternoon only (12:00 p.m. to 4:00 p.m.) basis.

The recreation experience of floaters would be enhanced based on their perception of use levels and forms of transportation that are compatible with a wild river and backcountry. There would be a greater demand for trips on the Snake River because of the availability of the experience. This would result in more launches, but reduced maximum party size and number of boats per party, would offset any increase in launch use (reference analysis file).

All powerboat use would be displaced during the exclusive non-motorized week. The single commercial powerboat permit at Hells Canyon Creek would have the option of operating out of Pittsburg, Dug Bar, or the Lewiston/Clarkston area during this week. Drop camps from Hells Canyon Creek would not be permitted during the non-motorized week. Trail users would be limited to foot access on the Stud Creek Trail only. During the non-motorized week, some private motorized use would be displaced downstream below Kirkwood, to other rivers in the region, or would wait for access during the motorized week. All commercial powerboat use would be displaced downstream below Kirkwood or wait for access on the motorized week. The total effect of displacement could be absorbed in different locations or time periods within the Snake River corridor.

Commercial and private powerboat use originating from downstream portals could only travel upstream as far as Kirkwood Historic Ranch during the non-motorized week. Commercial motorized use to the Sheep Creek Ranch would be eliminated during this week but the facilities could be used as overnight lodging for float groups or trail users. Since the structures are managed to maintain their historic integrity, overnight lodging at this facility could enhance the backcountry experience for some floaters, offsetting the prohibition of commercial powerboat use during the non-motorized week.

The vacant powerboat permit at Hells Canyon Creek would be eliminated to partially offset the effects on the single commercial powerboat outfitter who would not be allowed to operate from that location during the non-motorized week. Jetbacks to Hells Canyon Creek would be allowed beginning on the first day of the motorized week to pick up floaters between Pittsburg and Kirkwood only. Limits on commercial powerboat use could displace floaters who have limited time to spend on a river trip and depend on jetback services in place of vehicle shuttle services. Some of this displacement could be offset by floaters obtaining launch dates so the last day of their trip would place them in this section of the river. Jetbacks would be limited within the daily maximums on commercial powerboat use. The short-term float experience associated with jetbacks could be provided on other rivers in the region. The opportunity for a non-motorized experience would be a trade-off for the convenience of jetbacks.

Motorized week

Between Hells Canyon Dam and Kirkwood, all floatcraft use would be excluded during the exclusive motorized week. This would include all inflatable watercraft that could be launched from a motorized boat. A launch allocation system would be required to maintain maximum limits on numbers of boats. By eliminating competition from floaters for campsites, campsite reservations would not be necessary for powerboaters in this section of the river. The ease of mobility of motorized users would allow campsites to be selected on a first-come, first-served basis. The maximum allocation of powerboat use at any one time would provide adequate availability of camps for overnight use. Historically, it has been common for several powerboat users to camp together at the same location, with the effect of less competition for campsites.

The recreation experience of motorized users would be enhanced based on their perception of use levels and forms of transportation compatible with a wild river and backcountry. There would be a greater demand for trips on the Snake River because of the availability of an experience that does not involve social conflict with other user groups. The maximum allocation would provide for a small increase over existing use during the motorized week. Some powerboaters could select the desired wild river experience by traveling into the more technical river sections which deter less-skilled operators. This would provide a progressively higher quality backcountry experience as the skill level required to enter a section of the river increased and the number of motorized users decreased.

Commercial motorized use would be allowed in the river corridor on a daily launch allocation system but at levels of use appropriate to the overall motorized backcountry experience. Some of the commercial use displaced during the non-motorized week could be absorbed during the the motorized week.

Private aircraft use in this section of the river would remain constant, but be split between Big Bar and Sluice Creek. Private aircraft use would be allowed at both airstrips, but only during the motorized week. During the non-motorized week, these airstrips would be closed. Commercial aviation would be restricted. Use levels could be expected to remain relatively low and stable because of the necessary skills required for flying and landing within the river corridor.

The recreation experience of backcountry pilots would be enhanced based on their perception of use levels and forms of transportation that are compatible with a wild river and backcountry. Backcountry aviation information networks would be relied upon to provide information to pilots on the purpose of the on/off strategy and to ensure compliance. This type of experience would be available on several other rivers in the

region, making displacement of existing use negligible.

Because of no motorized transportation from Hells Canyon Creek, some trail use would be displaced during the non-motorized week. However, by accessing the trail on the last weekday of motorized access, trail users could travel the river corridor in a non-motorized setting during the non-motorized week. Trail users would be able to travel through the river corridor whenever they chose depending on their preferences for the on/off management strategy. This would enhance the experience of trail users by offering them a choice of backcountry experience. Increased demand for trail use during the non-motorized week could result in some competition for river campsites but this effect could be offset by the extremes of temperature in the summer months which has historically resulted in lower numbers of trail users during the summer months (reference analysis file).

Access to Kirkwood Historic Ranch would continue for both powerboaters and floaters but the quality of the experience would improve. With lower total numbers of river users, visitors would have a better opportunity for interaction with the interpretive program and less potential for crowding at the site.

During the non-motorized week in the upper river, Kirkwood would become a transition point for floaters where they would have the opportunity to interact with powerboaters prior to entering the shared-use section of river downstream. The change in recreation experience provided at Kirkwood should prepare them for the change in their on-river experience as they travel downstream. Motorized use in this section would be set at a level of access equivalent to the motorized week in the wild river, but with less opportunity for overnight camping and greater emphasis on day-use. This would provide a balanced mix of powerboat and floatcraft use. Floaters could avoid a large amount of this use by traveling through this section of the river prior to or after the departure of daily motorized tour boats. These boats would operate on a fairly routine schedule and most of them would be at specific places on the river during specific periods of time.

While mixed use would occur downstream from Kirkwood, the short length of river and limited number of campsites could make this opportunity negligible for private powerboaters during the non-motorized week. The opportunity for continued accessibility to Kirkwood Historic Ranch from downstream is the main factor that would enhance the motorized experience during this time period. During the motorized week, the only floaters in this section of the river would be those that had camped at or below Kirkwood on the last day of the non-motorized week. The majority of these trips would be off the river or below Pittsburg at the end of the first day of the motorized week.

Floaters who desired a continuation of a higher degree of solitude downstream from Kirkwood would not be displaced because the opportunity for solitude in the upper river would be the primary factor in taking the river trip. However, motorized traffic downstream from Kirkwood could influence these users to terminate their trip at Pittsburg, diminishing the opportunity for social conflict downstream. This would be especially true for float trips on the river during the first day of the motorized week in the upper river. In this situation, floaters could expect to see a higher number of powerboats. The short river distance where this would be an issue would make the overall effect of any social conflict between powerboaters and floaters negligible. If powerboat use displaced floatcraft use the effect would be negligible because the opportunity for a longer float river trip with a solitude experience would remain available on a number of other regional rivers or by spending a greater amount of time in the upper river during the non-motorized week.

The demand for camping could increase on the Idaho side of the river due to more land-based users, resulting in displacement of some river users to the scenic section of the river or land-based recreationists to locations outside the river corridor. With limited camping available, competition could be a factor even with a campsite reservation system. However, during the 1991 primary season, only about 7% of Kirkwood visitors camped overnight there (reference analysis file).

Land-based recreationists would continue to have unlimited access to the river corridor from downstream. Increased use of the river trail on the Idaho side between Kirkwood and Pittsburg would be expected due in particular to improved access to the trail system at Pittsburg Landing. Increased day-use by hikers between Pittsburg and Kirkwood would produce the greatest increase in trail use and the demand by hikers for overnight camping at Kirkwood could increase. The overall result of increased trail use by horses and hikers could lead to increased competition for river campsites, especially at Kirkwood. Trail users expecting a non-motorized experience (absence of sound from motors) would be able to access the canyon on the non-motorized week or by enjoying this type of opportunity on several other rivers in the region.

This alternative would have a high potential to protect and enhance the quality of river recreation opportunities to meet a variety of user expectations.
While it would provide for fair rules of access for both motorized and non-motorized river users and balance commercial and private use, it would also provide the opportunity to meet a variety of user expectations, including those of both motorized and non-motorized users from the Snake River and on a regional river basis.

ALTERNATIVE F

Alternative F would provide for exclusive non-motorized use of the wild river year-round. This alternative would enhance the quality of the non-motorized backcountry whitewater recreation experience immediately upon implementation, but at the expense of all motorized users and many non-motorized trail users who had previously accessed the river trails in the upper river by powerboat from Hells Canyon Creek.

Motorized use would be excluded from this section of the river year-round, including kickers on floatcraft. This would enhance the quality of the experience for floaters year-round, and would provide a high degree of solitude that would meet their expectations for a wild river, backcountry experience. Solitude would be enhanced by allocating use based on a 33% reduction in the maximum number of people allowed in the river corridor per day during the primary season. During the secondary season there would be no limits on the number of private or commercial daily launches but party size and number of boats would be limited.

Since this alternative's goal would be to achieve the best possible solitude experience for floaters on the wild section of the Snake River, there would be a different allocation system that would provide the maximum opportunity for obtaining one of the limited number of daily launches. This would be accomplished through an allocation system that allowed a successful permit holder to choose between running a private trip or using the services of a commercial outfitter.

Private users and commercial customers would be considered equally in the allocation of use rather than using an allocation of launches divided on a percentage of use between commercial outfitters and private users.

The allocation method would have a major effect on the way commercial floatcraft outfitters operated their businesses. This could result in a substantial fluctuation in outfitted trips during the initial implementation of this strategy. It would be expected to take several years for the situation to stabilize and the total number of commercial float businesses would be expected to decrease substantially. Businesses which operated on other rivers as well as the Snake River could fare better over the long and short term by having other river operations with more stable income. The opportunity to launch unlimited numbers of trips during the secondary season could shift some commercial use to just prior to or just after the primary season on a permanent or temporary basis.

The exclusion of motorized use year-round from this section of the river would result in a large and immediate displacement of powerboat use from the wild river to the scenic section of the river. Since the scenic river downstream from Pittsburg does not exhibit the same quality of experience, including degree of difficulty of rapids, the experience of powerboat users would be substantially diminished. The ability of the scenic section and other regional rivers to pro-

vide this same type of recreation opportunity for whitewater motorized use and absorb the high amount of displaced use would be unlikely. There would be a high probability that a number of motorized users would be displaced permanently from this type of backcountry recreation opportunity.

Elimination of motorized use year-round would eliminate the commercial powerboat business at Hells Canyon Creek and the associated recreation opportunities for the public. This outfitting business would have the option of relocating to Pittsburg, Dug Bar, or locations downstream from Cache Creek; but the existing commercial businesses already operating from two of those locations, limits on commercial use in the scenic section, and displacement of commercial use into this river section could make this option impractical. Success of the business relocation would be tied to development of marketing strategies that could compete against established businesses.

Some commercial powerboat use would be displaced and the number of commercial outfitters would likely decrease. This would effect all Snake River outfitters trying to operate in the scenic river because there would be a limited number of daily launches available once use limits were reached. While these limits would be higher than existing use, increased launches into this river section could lead to use limits being reached in a shorter period of time.

The exclusion of commercial powerboat use at Hells Canyon Creek could displace floaters who have limited time to spend on a river trip and depend on jetback services in place of vehicle shuttle services. This lack of jetback services would be negligible when compared to the increased quality of the backcountry river experience for floaters. The opportunity for shorter trips for displaced users would be available on other rivers within the region.

The exclusion of motorized access to Sheep Creek Ranch year-round would require transporting supplies by floatcraft or by trail. All non-historic structures would be removed. The opportunity would remain for the facilities to be used as lodging for overnight float trips. Since the structures are managed to maintain their historic integrity, this overnight lodging facility could enhance the backcountry experience for some floaters and trail users. However, with the difficulty of supplying the ranch on a year-round basis by trail or floatcraft only, and the reduced number of floaters on the river, the business opportunity might be less desirable, resulting in lack of interest in the buildings for a commercial operation. This could result in return of the facilities to Forest Service maintenance, and renewed maintenance costs. (Under the current situation the buildings are maintained to historic standards at the expense of the permittee under terms of the permit.)

The issue of fairness of the management system would be constantly challenged, particularly from powerboaters who would be excluded from a historical use. Equal access would remain an issue with motorized users, including:

- The inequitable exclusive floatcraft use compared to no motorized use.
- The right to river access based on historic use.
- The language in the HCNRA Act specific to acknowledging the validity of powerboat use on the Snake River.
- The lack of a similar recreation opportunity for powerboat users on other regional rivers including downstream on the Snake River compared with the variety of opportunity for floatcraft users.

Because the allocation of float use would reduce the number of total people on float trips on the river and competition from powerboaters would be excluded year-round, a campsite reservation system would not be necessary and campsites would be available on a first-come, first-served basis. Campsite stay limits and visitors' time schedules would be adequate to assure a continual turnover and available campsites throughout this section of the river.

Recreational access for all aircraft use in this section of the river would be eliminated year-round in order to achieve a maximum level of solitude for floaters. Since this use is relatively low, a minimum of displacement would occur

and this type of experience would still be available on several other rivers in the region.

Drop camps would be excluded from the wild river, year-round. Access for trail users from the upstream end of the wild river corridor would be limited to floatcraft in the upper river except for the trail to Stud Creek, and recreationists who accessed the river corridor from higher elevation trailheads on the Oregon and Idaho sides of the river. Trail use from the bench country would likely concentrate at locations where the trails reached the river and could produce some competition for river campsites at these locations. Elimination and/or reduction in drop camps or trail use access from Hells Canyon Creek would displace users to other regional rivers or to Pittsburg and Dug Bar for access to the trail system in the river corridor.

Increased use of the river trail on the Idaho side of the river could be expected due to improved access to the trail system at Pittsburg and people's desire for a solitude experience. Increasing trail use by horses and hikers could lead to increased competition for river campsites in certain areas along the river.

Access from Hells Canyon Creek for fall fishing would be displaced with little or no opportunity for a similar type of experience on other rivers in the region. Anglers trying to reach the river from the shoreline would increase use along the Stud Creek Trail. Increased pressure for fishing access would force anglers to access the river along hazardous, unmarked routes, increase both commercial and private floater use during the fall, or displace anglers. This could result in increased demand for adding connector trails to the existing trail system downriver, on one or both sides of the river, impacting the Scenic Resources ORV by trail construction and potentially impacting other ORV's through increased trail access from roaded trailheads.

Campsites for floaters and trail users would be on a first-come, first served basis, year-round. The demand for campsites between Kirkwood and Pittsburg could increase due to increased numbers of trail users from Pittsburg. However, during the 1991 primary season, only about 7% of Kirkwood visitors camped overnight there and levels of float use were much higher than would occur in this alternative (reference analysis file).

The type of the experience would change significantly at Kirkwood to coincide with a primitive ROS. This would result in eliminating the interpretive displays, program staffing, and any non-historic structures on the site. Historic structures would be maintained in accordance with specific preservation guidelines. Interpretation of the site would occur through self-guided brochures or at the Pittsburg trailhead.

Floaters and trail users would be exposed to some motorized access to the private land at Kirby Creek, Idaho. This effect could be diminished for some floaters who might choose to stay overnight at the lodge. Access to this property is allowed under the Melcher Amendment to the Alaska National Interest Lands Conservation Act of 1980. Management of this access would be dealt with through issuance of an access permit with specific limits on numbers of boats and daily round trips from Pittsburg or Lewiston.

The removal of navigation (survey) markers in the entire wild section would have no effect since non-motorized users do not use them as a navigational aid.

This alternative would have a low potential to protect and enhance the quality of river recreation opportunities to meet a variety of user expectations.
It would heavily favor a private, non-motorized experience at the expense of all commercial and motorized users. It would not provide for a fair opportunity for a motorized experience from a regional river perspective year-round.

ALTERNATIVE G

In Alternative G, the wild river would be managed for shared use with an emphasis on providing a variety of quality river recreation opportunities that would meet the expectations of a variety of users in a wild river setting. This would not only protect the existing experience, but enhance the recreation ORV by providing different recreation opportunities for trail and valid watercraft users that are currently not available.

This would include a limited opportunity for a non-motorized experience between Wild Sheep Rapid and Kirkwood Historic Ranch during periods of time that would have the least impact to shared use by motorized and non-motorized users.

The immediate affect of this alternative would be the opportunity to provide a variety of quality experiences for a diversity of users in a wild river setting. River users would have the opportunity to schedule their trip on the river during the most favorable period of the primary season at a time when levels of motorized and/or non-motorized use would accommodate their preferences associated with personal perceptions of a wild river experience. In order to provide this opportunity to the broadest diversity of users, these experiences would include many types found in wild river settings, ranging from mixed levels of motorized and non-motorized access and social encounters to a non-motorized experience where there would be an opportunity for isolation from the sights and sounds of others.

Private powerboat use would be limited to an average of the use levels that occurred on weekends during July and August in the mid to late 1980's. This would represent daily average levels of peak use during the time period that information on user perceptions was gathered for the user survey and be representative of current average daily use when that use is spread over an entire primary season. This would assure the existing use level of opportunity for powerboaters, but require scheduling of trips to provide for daily limits that would enhance the quality of the experience for all river users.

Commercial powerboat use levels would represent average daily use per season from the mid to late 1980's which is similar to the current levels of average daily use due to changes in the size of powerboats during these years, i.e., larger boats transporting more people per trip vs a greater number of smaller boats taking fewer people per trip. Commercial powerboat use would be fairly distributed based upon historic use, primary area of operation, and season of use (Appendix G). This would provide both private and commercial powerboaters with a level of access that would accommodate most existing use, but spread the total use over a greater length of time. This would eliminate daily peaks in use and enhance the quality of the experience for all river users.

Commercial and private powerboat access would be guaranteed from all portals at varying intensities of use. The level of powerboat use would accommodate average existing use for both private and commercial powerboats, and visitors could choose the length and type of trip based upon personal preference. Private and commercial powerboaters would have nearly identical daily access opportunities into the wild river of six launches for private powerboaters and seven launches for commercial powerboaters. However, private powerboaters would have access to the entire wild river corridor (except during non-motorized periods) limited only by their level of skill, while commercial powerboaters would restricted to historic areas of operation and length of trip. Overall, this would provide a fair and equitable opportunity for a motorized river experience. Powerboaters could enhance the quality of their experience by traveling into sections of the river which require a higher level of skill for motorized access.

Private and commercial float use would be managed using the same allocation and reservation system that has been in place since the mid to late 1980's, with an initial daily allocation of three private, two commercial launches. The sixteenth vacant commercial float launch would not be filled, and permitted use associated with that launch would be split between commercial and private use on the same percentage as the allocation (60/40) in order to provide a fair opportunity for these launches to private floaters. Floaters could continue to choose trip length, including one day float trips within the daily allocation of five launches per day. Jetback service would continue to be available within the daily launch allocation for commercial powerboaters, except during non-motorized periods of time in specific sections of the river corridor. The maximum number of boats per party could be double the current average but offset by a reduction in the maximum number of people per float party by 20%. There would continue to be a variety of options available to floaters, with a small increase in the number of launches (eight per season) available to private floaters in

the initial allocation without increasing the total number of launches or decreasing the commercial float allocation.

Floaters and trail users would have the opportunity for a non-motorized experience in the river corridor between the top of Wild Sheep Rapid and Kirkwood Historic Ranch on Monday through Wednesday each week from the second Monday in July through the Wednesday prior to Labor Day. This would provide a quality wild river experience and a fair and reasonable opportunity for this type of experience for floaters and trail users. However, it would leave holidays on either side of this time period, as well as the busier periods of weekly use (Thursday through Sunday) open for shared use and access by powerboaters and floaters. Monday through Wednesday represents the period of time which would least impact powerboaters in order to provide this non-motorized opportunity.

Commercial powerboat access to trailheads above Wild Sheep Rapid would continue to be available year-round. Two permits would be available for commercial powerboat service from Hells Canyon Creek but without increasing the amount of powerboat use from that site. This would help assure quality service as the result of business competition. Trail users throughout the wild river corridor would have the opportunity to select either a motorized or non-motorized experience in the river corridor depending on personal preference, scheduling, and the area accessed. The opportunity for trail access would be protected and the experience would be enhanced depending on personal preference.

Kirkwood would continue to be staffed and maintained as a historic interpretive site. Access to Kirkwood would remain available for powerboaters and floaters even during non-motorized periods of time upstream from Kirkwood. Access to Kirby Creek would be allowed under the Melcher Amendment to the Alaska National Interest Lands Conservation Act of 1980. Management of this access would be dealt with through issuance of an access permit with specific limits on numbers of boats and daily round trips from Pittsburg or Lewiston. The mailboat would continue to operate each Thursday in the wild river. Access to Sheep Creek and and Temperance Creek by powerboat would continue, but with some limitations on daily access.

The airstrip at Big Bar would remain open for both private recreational use and incidental commercial aircraft landings, providing a recreational experience for aviators year-round. Sluice Creek would be re-opened during the secondary season for use by private recreational aircraft use only which would enhance the recreational opportunity as well as the quality of the experience for skilled backcountry pilots.

During the primary season drop camps would not be allowed in order to avoid the need for a campsite reservation system for all river users and improve the quality of the experience. Drop camps would be allowed during the secondary season.

This alternative would have a high potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would provide for fair rules of access for both motorized and non-motorized river users it would also balance commercial and private use. There would be a balanced variety of motorized and non-motorized experiences available and a fair opportunity for these experiences from a regional river perspective during the primary season.

SCENIC SECTION - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In Alternative A, the quality of the recreation experience would be diminished over time by the potential for continued growth for both motorized and non-motorized user groups. If the trend in shorter trips for float launches originating at Hells Canyon Creek continued, there would be fewer trips traveling down river into this section of the river. However, the potential for float trip launches from Pittsburg and Dug Bar would increase. Increases in powerboats traveling upriver, floaters entering the Snake from the Lower Salmon, and commercial jet-

backs to Pittsburg or jetouts to Heller Bar would result in increased social conflict, particularly in the section of river between the HCNRA boundary and the mouth of the Salmon. Personal motorized watercraft would remain excluded from this section of the river, creating a perception of displacement among this user group. Floaters desiring a greater degree of solitude would be displaced.

Private aircraft use would continue to be unrestricted at Pittsburg, Dug Bar and Salmon Bar. The Cache Creek airstrip would remain closed. Helicopter landings would be allowed within the scenic river corridor but not within the study river corridor. Commercial aviation would be restricted. Use levels would likely remain relatively low and stable because of the necessary skills required for flying and landing within the river corridor. This type of experience would also remain available on several other rivers in the region.

Land-based recreationists, including drop camps, would continue to have unlimited access to the river corridor. Increasing trail use by horses and hikers could lead to a small increase in competition for river campsites in specific areas adjacent to the Oregon side of the river. Trail users with expectations of a non-motorized experience (absence of sound from motors) may be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region.

Competition for campsites would increase dramatically, especially in the area below the mouth of the Salmon. This competition would displace some powerboaters to the area of the river between the mouth of the Salmon and Pittsburg if they had the skill level to navigate further upstream. However, since this section of river is used by a larger percentage of powerboat operators with lower skill levels, conflict over campsites could be expected to increase, and both powerboaters and floaters would be displaced outside of the HCNRA boundary.

This alternative would have a low potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would provide for a fair distribution of use for motorized users on a regional perspective and an equal opportunity for unlimited access for both motorized and non-motorized river users, the existing trend would suggest a river experience heavily favoring commercial and private powerboat use, especially between Pittsburg Landing and the mouth of the Salmon. As use continued to grow, there would be a corresponding loss of quality in a scenic river float trip. As this unbalanced and unlimited opportunity favoring motorized recreation experiences increased, the quality of the experience for motorized users would also decrease. The majority of user expectations of a trip in the scenic river would be identified with motorized recreation.

ALTERNATIVE B

In Alternative B, the quality of the recreation experience would be diminished over time by the potential for continued growth for both user groups. This growth would continue until monitoring indicated that users had an unsatisfactory perception of crowding at which time maximum levels of use would be established.

If the trend of shorter trips for float launches originating at Hells Canyon Creek continued, there would be fewer trips traveling down river into this section of the river. However, the potential for float launches from Pittsburg and Dug Bar would increase. Increased powerboat use traveling upriver, floatcraft entering the Snake from the Lower Salmon, and commercial jetbacks or jetouts of Lower Salmon users to Pittsburg or Heller Bar would result in increased social conflict, particularly in the section of river between the HCNRA boundary and the mouth of the Salmon.

Personal motorized watercraft would remain excluded from this section of the river, creating a perception of displacement among this user group. Floaters desiring a greater degree of solitude would be displaced.

Private aircraft use would continue to have unlimited access at Pittsburg, Dug Bar, and Salmon Bar. The Cache Creek airstrip would be open and helicopter landings would be allowed at airstrips only. Commercial aviation would be restricted. Use levels could be expected to remain

relatively low and stable because of the necessary skills required for flying and landing within the river corridor. Aircraft use would not substantially increase because the 20% slope of the Cache Creek airstrip deters all but highly skilled pilots from landing there. This type of experience would remain available on several other rivers in the region.

Land-based recreationists, including drop camps, would continue to have unlimited access to the river corridor. Increasing trail use by horses and hikers could lead to a small increase in competition for river campsites in specific areas adjacent to the Oregon side of the river. Trail users expecting a non-motorized experience (absence of sound from motors) may be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region. The overall effect on land-based users in the immediate area of the river would be diminished when compared with the number of miles of trail that lie outside of the river corridor.

Competition for campsites would continue to increase, especially in the area below the mouth of the Salmon. This competition would displace some powerboaters to the area of the river between the mouth of the Salmon and Pittsburg if they had the skill level to navigate further upstream. However, since the area below the mouth of the Salmon is commonly used by a large percentage of motorized users with lower whitewater skill levels, conflict over campsites could be expected to increase and both powerboaters and floaters would be displaced outside of the corridor.

This alternative would have a low potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would provide for a fair distribution of use for motorized users on a regional perspective and an equal opportunity for unlimited access for both motorized and non-motorized river users until limits were placed on entry into the corridor, the existing trend would suggest a river experience heavily favoring commercial and private powerboat use, especially between Pittsburg Landing and the mouth of the Salmon. As use continued to grow, there would be a corresponding loss of quality in a scenic river float trip. As this unbalanced and unlimited opportunity favoring motorized recreation experiences increased, the quality of the experience for motorized users could also decrease, especially during days where use peaked. The majority of user expectations of a trip in the scenic river would be identified with motorized recreation.

ALTERNATIVE C

In Alternative C, a quality river recreation experience could be achieved at a moderate level of use similar to an average of 1985-1989. However, it is likely that powerboaters would not feel that these levels of use would reflect their perception of the right amount of access to provide a recreation experience on a scenic river within a national recreation area.

The most immediate effect would be a substantial reduction in private powerboat use and a small reduction in commercial powerboat use. Since launch reservations would be required for all users except Lower Salmon floaters, this would result in an immediate and major displacement of private powerboat use outside the boundaries of the HCNRA.

It is highly probable that the type of motorized recreation experience provided within the HCNRA would not be available downstream on the Snake River or on other rivers in the region at the level necessary to absorb the amount of use displaced. This could result in permanent displacement of some users from this type of whitewater recreation.

While there would still be floaters dissatisfied with the level of motorized use and who desired a higher level of solitude, the amount of displacement of these users would be relatively low and the type of river experience they desired would remain available on a number of other regional rivers.

Above the mouth of the Salmon, the trend in shorter trips for floaters originating at Hells Canyon Creek would be expected to continue, resulting in fewer trips traveling downstream into this section of the river. However, the effects of more launches from trips originating in the wild

river could lead to an increased level of float use in this section of the river, even if the percentage of total float launches entering this section of the river remained constant.

The potential for float launches from Pittsburg and Dug Bar would be expected to increase, especially with improved access to Pittsburg. This use would be limited to a maximum level. It is probable that regardless of the origin of the use, there would be increased float traffic into this section of the river. This could renew social conflict with powerboaters already displaced from the wild section of the river.

The issue of fairness of the management system would not be resolved, with powerboaters feeling the system would not allow them to achieve their desired recreation experience. Equal access, especially in regard to Lower Salmon floaters, would remain an issue with powerboat users in several areas including:

- The number of floatcraft entering from the Lower Salmon River was not included in any allocation system related to the Snake River.

- The inequitable number of craft allowed per float trip compared to powerboat trips.

- The ability of float use to increase in this section of the river over existing use levels due to the opportunity to utilize a greater number of available launches as demand increased at Hells Canyon Creek, Pittsburg, Dug Bar, and the Lower Salmon.

- The lack of a similar recreation opportunity for powerboaters on other regional rivers compared with the variety of opportunities for floaters and the amount of displacement.

- The opportunity for a greater number of people to access the river on a float trip compared to a private, powerboat trip due to inequitable numbers of boats allowed per trip for each user group.

These factors would continue to cause social conflict between the two user groups but at a lower level on the river due to decreased number of powerboats.

Limits on commercial powerboat use could result in reduced opportunities for jetbacks from the mouth of the Salmon to Pittsburg or jetouts to Heller Bar.

Personal motorized watercraft would remain excluded from this section of the river, creating a perception of displacement among this user group.

Private aircraft would continue to have unlimited access at Pittsburg, Dug Bar and Salmon Bar. The Cache Creek airstrip would be opened and helicopter landings would only be allowed at the four designated airstrips. Commercial aviation would be restricted. Use levels would remain relatively low and stable because of the necessary skills required for flying and landing within the river corridor. Aircraft use would not substantially increase because the 20% slope of the Cache Creek airstrip deters all but highly skilled pilots from landing there. This type of experience would remain available on several other rivers in the region.

Trail users would continue to have unlimited access to the river corridor from Dug Bar. Since powerboat use would be limited, drop camp use during the primary season would likely stabilize, with reduced opportunities over the long term. Increasing trail use by horses and hikers could lead to a small increase in competition for river campsites in specific areas adjacent to the Oregon side of the river. Trail users expecting a non-motorized experience (absence of sound from motors) would be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region. The overall effect on land-based users in the immediate area of the river would be negligible when compared with the number of miles of trail that lie outside the river corridor and the limited use of drop camps during the primary season.

Competition for campsites would continue to increase, especially in the area below the mouth of the Salmon. This competition would displace some powerboaters to the area between the mouth of the Salmon and Pittsburg providing

they were are skilled enough to navigate further upstream. However, since the area below the mouth of the Salmon is commonly used by a large percentage of less-skilled powerboat operators, conflict over campsites could be expected to increase and both powerboaters and floaters would be displaced outside of the HCNRA boundary.

The issue of fairness of the management system would not be resolved, particularly below the mouth of the Salmon. Social conflict between powerboaters and floaters would likely increase as soon as an allocation system was initiated for Snake River powerboat users. This issue would not be resolved unless Lower Salmon users were part of an allocation system that addressed their effect on the recreation ORV for the Snake River. It could be perceived by Snake River users that the area of the Snake River below the mouth of the Salmon was being managed to maximize the recreation experience of Lower Salmon floaters and not being managed for protection and enhancement of Snake River ORV's. Effects from the Lower Salmon River are discussed under cumulative effects.

This alternative would have a low potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would provide for rules of access for both motorized and non-motorized river users, balance commercial and private use, and provide access for both floaters and powerboaters, it would not provide a fair opportunity for a motorized experience from a regional river perspective.

ALTERNATIVE D

In Alternative D, this section of the river would be managed to provide an emphasis on outdoor recreation activities in a scenic river setting. Levels of use would emphasize the perspective of motorized users of a recreation experience on a scenic river within a national recreation area in consideration of their loss of opportunity for access to the majority of the wild river.

The historic trend toward shorter length float trips originating at Hells Canyon Creek would indicate this use would continue to remain below 25% with this same use downstream from Dug Bar remaining below 20% (reference analysis file). However, a greater utilization of launches from trips originating in the wild river could lead to an increased level of floatcraft use in this section of the river, even if the percentage of total float launches entering this section remained constant. The opportunity for a high solitude float trip in the upper river and the trend toward shorter trip lengths would focus demand for Snake River trips into that area and away from longer trips that entered this section of the river.

While there would be floaters dissatisfied with the level of powerboat use and wanting a higher level of solitude, the amount of displacement of these users originating their trips on the Snake River would be relatively low and be a trade-off for the solitude experience in the wild river. The type of river experience they desired would remain available on a number of other regional rivers.

Floatcraft launches from Pittsburg and Dug Bar would be eliminated during the primary season, with unlimited use available in the secondary season. Floaters currently using this stretch of the river would be displaced but the effect would be negligible due to the low number of launches and the availability of a similar experience on other rivers within the region.

Launch reservations and a use allocation system would only be required for this section of the river when motorized and non-motorized use reached specific use levels. Launch reservations would not be required for Lower Salmon float trips. This would raise the issue of fair and equitable access between Snake River users and Lower Salmon River users. Social conflict between floaters and powerboaters could expect to increase, especially when an allocation system was put into effect for Snake River powerboat users. This issue would not be resolved until Lower Salmon users were part of an allocation system that addressed their effect on the recreation ORV for the Snake River.

The equity of access, especially in regard to Lower Salmon floatcraft users, would remain an

issue with powerboat users in several areas including:

- The number of floatcraft entering from the Lower Salmon River not included in any allocation system related to the Snake River.
- The inequitable number of boats allowed per float trip when compared to powerboat use.
- The ability of float use to increase over existing use levels due to the opportunity to use a greater number of launches as demand increased on the Lower Salmon.
- The opportunity for a greater number of Lower Salmon floaters to access the river compared to Snake River users due to inequitable numbers of boats allowed per trip.

Limits on commercial powerboat use affecting jetbacks from the mouth of the Salmon to Pittsburg or jetouts to Heller Bar would be reduced but probably would not displace any Lower Salmon floaters.

Personal motorized watercraft would be allowed from the HCNRA boundary to Pittsburg on an allocation system at a minimum use level. This would provide access to a user group prohibited from operating in any other section of the river and would partially resolve a perception of displacement among this group. This use would be limited to day trips only, and the effect of the experience of other user groups should be negligible.

Private aircraft use would continue to have unlimited access at Pittsburg, Dug Bar, and Salmon Bar. The Cache Creek airstrip would be opened and helicopter landings would only be allowed at the four designated airstrips. Commercial aviation would be restricted. Use levels could be expected to remain relatively low and stable because of the necessary skill required for flying and landing in the river corridor. Aircraft use would not substantially increase because the 20% slope of the Cache Creek airstrip deters all but highly skilled pilots from landing there. This type of experience would remain available on several other rivers in the region.

Land-based recreationists, including drop camps, would continue to have access to the river corridor. Since there would be a limit on powerboat use, drop camp use during the primary season would be expected to stabilize. Increasing trail use by horses and hikers could lead to a small increase in campsite use in specific areas adjacent to the Oregon side of the river. Trail users expecting a non-motorized experience (absence of sound from motors) would be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region. The overall effect on land-based users in the immediate area of the river would be negligible due to the number of miles of trail in the river corridor and the opportunity for solitude as the trail periodically leaves the river corridor and enters the upland benches in designated wilderness.

Competition for campsites would continue to increase, especially in the area below the mouth of the Salmon. This competition would displace some powerboaters to the area of the river between the mouth of the Salmon and Pittsburg if they had the necessary skills to navigate further upstream. However, since the area below the mouth of the Salmon is commonly used by a large percentage of powerboat operators less skilled in navigating whitewater, conflict over campsites could be expected to increase and both powerboaters and floaters would be displaced outside the HCNRA boundary by Lower Salmon users.

This alternative would have a moderate potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would emphasize a motorized experience for private and commercial powerboaters to address both loss of access in the majority of the wild river corridor during the primary season and the regional river perspective, it would not implement use limitations until monitoring limits were reached, which could degrade the experience by allowing peak motorized use days. It only partially achieves a balance between commercial and private powerboat use. While it still provides access for both floaters and powerboaters, the rules of access would favor powerboaters over floaters in the primary season since Snake River floaters

could only access the scenic river by taking a longer trip that started in the wild river.

ALTERNATIVE E

In Alternative E, this section of the river would be managed to provide an emphasis on providing a quality recreation experience in a scenic river setting with levels of use that would vary between weekdays and weekends to address the recreational needs of different users within a national recreation area.

The historic trend in shorter length float trips originating at Hells Canyon Creek that continued into the scenic river would be expected to continue to remain below 25%, with this same use dropping below 20% as it proceeded downstream from Dug Bar. However, greater utilization of launches from trips originating in the wild river could lead to an increased level of floatcraft use, even if the percentage of total float launches entering this section of the river remained constant. This would be offset by the fact that this continuation of trips with associated additional float use would only occur on alternating weeks. The opportunity for a high solitude, float trip in the upper river would focus demand for Snake River trips into that area and away from longer trips that entered this section of the river.

The potential for floatcraft launches from Pittsburg and Dug Bar would be expected to increase, especially with improved access to Pittsburg. A limit on floatcraft use originating at Pittsburg or Dug Bar would provide for minimal growth, even if some of the use displaced during the motorized week in the upper river began launching trips into this river section. Floatcraft use currently using this stretch of the river would not be displaced unless launch limits were set, at which time existing use would have to compete for launches.

For each river designation, there is a range in the level of use appropriate for the classification. In Alternative E, a higher number of daily launches would be allowed for powerboaters on weekends (Friday through Sunday) that would fully utilize the range in use levels for access appropriate to a scenic river setting. This would allow both floaters and powerboaters traveling in the scenic river on weekdays to have a different type of recreation experience with a lower level of use that emphasized a greater opportunity for isolation from the sights and sounds of other users, but at a level appropriate for a scenic river setting, and greater than a wild river setting. Travel on weekends would provide a higher level of use that was still within the appropriate range for a scenic river setting which emphasized a quality experience for Snake River powerboaters and Lower Salmon floaters.

Launch reservations for private powerboaters would be required on Friday through Sunday during the primary season but not required on Monday through Thursday until use reached specific, set levels.

While there would still be floaters dissatisfied with the level of powerboat use and who desired a higher level of solitude, the amount of displacement of users originating their trips on the Snake River would be relatively low, even if the maximum level of floatcraft launches at Pittsburg was reached (one per day). The type of river experience desired would remain available on a number of other regional rivers.

The issue of fairness of the management system would not be resolved below the mouth of the Salmon. Social conflict between powerboaters and floaters could expect to increase as soon as the weekend allocation system was initiated for Snake River powerboat users. This issue would not be resolved until Lower Salmon users were part of an allocation system that addressed their effect on the recreation ORV for the Snake River. It could be perceived that the area of the Snake River below the mouth of the Salmon was being managed to maximize the recreation experience of Lower Salmon floaters and not being managed to protect and enhance the recreation ORV for the Snake River.

A fair system of access, especially in regard to Lower Salmon floaters, would remain an issue with powerboaters in several areas including:

- The number of floaters entering from the Lower Salmon River not included in any allocation system related to the Snake River.

- The inequitable number of boats allowed per float trip when compared to motorized use, i.e., one boat launch for powerboaters and eight boats per launch for floaters.
- Increases in floatcraft in this river section over existing use levels due to using a greater number of launches as demand increased on the Lower Salmon.
- River access for a greater number of Lower Salmon floaters compared to Snake River floaters due to limited number of boats allowed per trip.

Limits on commercial powerboat use would reduce jetbacks from the mouth of the Salmon to Pittsburg or jetouts to Heller Bar but probably would not displace any Lower Salmon floaters.

Personal motorized watercraft would be allowed from the HCNRA boundary to the mouth of the Salmon River on an allocation system at a minimum use level. This would provide access to a user group prohibited from operating in any other section of the river and would partially resolve a perception of displacement among this group. This use would be limited to day trips only, and the effect on the experience of other user groups should be further reduced by implementation of a boater education program for these users.

Private aircraft use would continue to have unlimited access at Pittsburg, Dug Bar, and Salmon Bar. The Cache Creek airstrip would be open and helicopter landings would only be allowed at the four designated airstrips. Commercial aviation would be restricted. Use levels could be expected to remain relatively low and stable because of the necessary skills required for flying and landing within the river corridor. Aircraft use would not substantially increase because the 20% slope of the Cache Creek airstrip deters all but highly skilled pilots from landing there. This type of experience would also remain available on several other rivers in the region.

Land-based recreationists, including drop camps, would continue to have access to the river corridor. Since powerboat use would be limited, drop camp use during the primary season would be expected to stabilize. Increasing trail use by horses and hikers could lead to a small increase in competition for river campsites in specific areas adjacent to the Oregon side of the river. Trail users expecting a non-motorized experience (absence of sound from motors) would be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region. The overall effect on land-based users in the immediate area of the river would be negligible due to the number of miles of trail in the river corridor and the opportunity for solitude as the trail periodically leaves the river corridor and enters the upland benches within designated wilderness.

Competition for campsites would continue to increase, especially in the area below the mouth of the Salmon. This competition would displace some powerboaters to the river section between the mouth of the Salmon and Pittsburg if they had the skills to navigate further upstream. However, since the area below the mouth of the Salmon is commonly used by a large percentage of less-skilled powerboat operators, conflict over campsites could be expected to increase and both powerboaters and floaters would be displaced outside of the NRA boundary by Lower Salmon users.

This alternative would have a moderate potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. Both motorized and non-motorized uses would be allowed to continue. Different levels of use on weekdays compared to weekends would allow for different types and qualities of experiences for both floaters and powerboaters. Levels of powerboat use would emphasize the lack of regional river opportunities for powerboaters on wild and scenic rivers. However, commercial use would be favored over private use, not in regard to numbers of launches, but in relation to reasonable needs for access to the recreation opportunity. Use levels would represent accommodation of existing private use but allow growth in commercial use. Rules of access would be reasonably fair for all users as a result of the need to meet regional river opportunities.

ALTERNATIVE F

In Alternative F, this section of the river would be managed to provide an emphasis on motorized recreation in a scenic river setting. Levels of use would appropriately reflect the perspective of motorized users of a recreation experience on a scenic river within a national recreation area. Emphasis on motorized recreation would be in response to elimination of the opportunity for motorized use in the wild river.

There would be no float use in this section of the river that could originate from any Snake River portal during the primary season. Unlimited float use could take place during the secondary season while weather and river flows were favorable but kickers would not be allowed.

This alternative would deny float access to the scenic river during the time of year when the best conditions of weather and water levels were available. This would impact approximately 25% of existing Snake River float use, including some commercial outfitters who regularly use this section of the river for their trips. However, while floaters currently using this stretch of the river would be displaced, the effect would be lessened due to the low number of launches, the availability of a similar experience on other rivers within the region, and the opportunity for a non-motorized experience in the wild river.

Launch reservations and a use allocation system for powerboaters would only be required for this section of the river when motorized use reached specific use levels. Launch reservations would not be required for Lower Salmon floatcraft use. This would raise the issue of fair and equitable access between Snake River users and Lower Salmon River users.

While there would still be floaters dissatisfied with the level of motorized use and who desired a higher level of solitude below the mouth of the Salmon or during the secondary season, the amount of displacement of the users originating their trips on the Snake River would be relatively low and offset by the opportunity for a solitude experience in the wild river. The type of river experience desired would remain available on a number of other regional rivers.

The issue of fairness of the management system would not be resolved below the mouth of the Salmon. Social conflict between powerboaters and floaters could expect to increase, especially when an allocation system was put into effect for Snake River powerboat users. This issue would not be resolved until Lower Salmon users were part of an allocation system that addressed their effect on the recreation ORV for the Snake River.

The equity of access, especially in regard to Lower Salmon non-motorized users, would remain an issue with motorized users in several areas including:

- The amount of floatcraft use entering from the Lower Salmon River not included in any allocation system related to the Snake River.
- The inequitable number of boats allowed per float trip compared to powerboat use.
- The ability of floatcraft use to increase over existing use levels due to using greater number of launches as demand increased on the Lower Salmon.
- The opportunity for a greater number of Lower Salmon floaters to access the river compared to Snake River users with a maximum number of boats allowed per trip.

Limits on commercial powerboat use would reduce jetbacks from the mouth of the Salmon to Pittsburg or jetouts to Heller Bar but probably would not displace any Lower Salmon floatcraft use.

Personal motorized watercraft would not be allowed in this section of river, creating a perception of displacement among this user group.

Private aircraft use would continue to have unlimited access to Pittsburg, Dug Bar, and Salmon Bar. The Cache Creek airstrip would be open and helicopter landings would only be allowed at the four designated airstrips. Commercial aviation would be restricted. Use levels could be expected to remain relatively low and stable because of the necessary skills required for flying and landing within the river corridor. Aircraft use

would not substantially increase because the 20% slope of the Cache Creek airstrip deters all but highly skilled pilots from landing there. This type of experience would also remain available on several other rivers in the region.

Land-based recreationists, including drop camps, would continue to have access to the river corridor. Since powerboat use would be limited, drop camp use during the primary season would be expected to stabilize. Increasing trail use by horses and hikers could lead to a small increase in competition for river campsites in specific areas adjacent to the Oregon side of the river. Trail users expecting a non-motorized experience (absence of sound from motors) would be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region. The overall effect on land-based users in the immediate area of the river would be negligible due to the number of miles of trail in the river corridor and the opportunity for solitude as the trail periodically leaves the river corridor and enters the upland benches within designated wilderness.

Competition for campsites would continue to increase, especially in the area below the mouth of the Salmon. This competition would displace some powerboat users to the area of the river between the mouth of the Salmon and Pittsburg provided the had the skills necessary to navigate further upstream. However, since the area below the mouth of the Salmon is commonly used by a large percentage of less-skilled powerboat operators, conflict over campsites could be expected to increase and both powerboat and floatcraft users could be displaced outside of the HCNRA boundary.

This alternative would have a low potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. While it would provide for motorized recreation and address the needs of motorized users on a regional basis, it would not provide the opportunity for any float experience from launch points on the scenic river. As a result of denying the float opportunity, it would unreasonably favor motorized access over non-motorized access. Commercial and private use would be relatively balanced, not in regard to numbers of launches, but in relation to reasonable needs for access to the recreation opportunity as a result of displacement from the wild river. There would be no float opportunities in the primary season.

ALTERNATIVE G

In Alternative G, this section of the river would be managed to provide an emphasis on private, motorized recreation in a scenic river setting. Levels of use would appropriately reflect the perspective of a semi-primitive, motorized recreation experience on a scenic river within a national recreation area. Emphasis on private, motorized recreation would be in response to recognizing the need to provide a fair opportunity from the perspective of regional river access. Part of this motorized experience would include the ability of Snake River and Lower Salmon River floaters to continue the practice of using kickers on their floatcraft.

Initially, launch reservations as part of a use allocation system for private powerboaters and private floaters would only be required for weekends (Friday through Sunday). Reservations would be required for both user groups on weekdays in this section of the river when either Snake River motorized or non-motorized use reached specific use levels. Access on weekdays (Monday through Thursday) for both private floaters and private powerboaters would not be limited anywhere in the scenic river section until monitoring indicated the need to set the established limits. This would enhance the experience by providing the opportunity for both floaters and powerboaters to take a spontaneous trip throughout the scenic river with no prior requirement for access except for a self-issued permit. Private powerboaters would continue to be able to launch small inflatables from their boats during the weekdays. The historically lower numbers of private users on these days and monitoring for any changes in these historic use levels would assure protection of the recreation experience appropriate for a semi-primitive, motorized, scenic river experience.

Floaters continuing downstream from the wild river could expect to experience a slightly higher level of total use during the weekdays in both private float and powerboat use, but not in lev-

els of commercial use. The quality of their experience would change to a scenic river setting. The change would be more noticeable if they entered the scenic river on a weekend, since private powerboat use would be higher though still appropriate for a semi-primitive, motorized experience. Their experience would change again when they reached the mouth of the Salmon. The result would be a steady upward progression in the level of use as they travel downstream during the course of their trip over several days within both the wild and the scenic river corridors.

Launch reservations would not be required for Lower Salmon float use. This could raise the issue of fair and equitable access between Snake River users and Lower Salmon River users, especially in regard to access on weekends. This would be partially offset by requiring Lower Salmon floaters to meet special conditions similar to Snake River floaters that would be implemented over a period of three seasons beginning in 1994. These would include a 24 person maximum party size for any groups camping downstream from Salmon Falls and no more than eight individual boats or, for commercial row-your-own trips, eight "rafted up" groups of boats per party upon entering the Snake River.

There would also be an additional five private powerboat launches per day on weekends for day-use only between Cache Creek and the mouth of the Salmon.

While there would still be floaters dissatisfied with the level of motorized use, which includes the use of kickers by some floaters, and who desired a higher level of solitude below the mouth of the Salmon or during the secondary season, the amount of displacement of these users, especially those originating their trips on the Snake River, would be relatively low and offset by the opportunity for a solitude experience in the wild river or the Lower Salmon and the availability of that type of desired experience on many other regional wild and scenic rivers. On weekdays the total of the average number of floatcraft per party should be relatively equal to the average number of powerboats on the scenic river above the mouth of the Salmon.

The issue of fairness of the management system would be partially resolved below the mouth of the Salmon. Some social conflict between powerboaters and floaters could expect to continue, especially when an allocation system was put into effect for Snake River powerboat users. This issue would not be resolved until the Lower Salmon allocation system of a maximum of ten float launches per day was fully implemented and this use fully addressed the Lower Salmon users' effect on Snake River's ORV's. The issue of equity in access would remain an issue with motorized users primarily because Lower Salmon float use could continue to increase as user demand created a greater number of daily launches on the Lower Salmon.

Since private use would be emphasized, commercial float and commercial powerboat use originating on the Snake River would be limited at close to average historic use levels throughout the week during the primary season. This would be based upon the premise that outfitting is a privilege rather than a right and access for commercial enterprises would be subordinate to the needs of the recreating public as a whole. Moreover, commercial use has enjoyed substantial growth in the last decade. The larger numbers of passengers routinely carried by commercial tour boats and float companies would substantially offset any difference in numbers of boats between private and commercial use, and outfitted passengers would still be assured of a variety of high quality experiences as well as protection and enhancement of that experience by establishment of a minimum number of outfitter services at specific portals into the scenic river.

Limits on the number of commercial powerboats would reduce the availability of jetbacks from the mouth of the Salmon to Pittsburg or jetouts to Heller Bar but probably would not displace any Lower Salmon float use. Commercial Snake River float use would be limited to trips originating in the wild river. Overnight use by commercial powerboaters would not be allowed below the mouth of the Salmon during the primary season. The temporary use commercial powerboat permit would not be renewed upon expiration at the end of 1994 and Pittsburg based outfitters would not be allowed

to access the river below the mouth of the Salmon. All of these actions would reduce the level of use on the river with the aim of improving the quality of the experience for all users below the mouth of the Salmon.

Personal motorized watercraft would not be allowed in this section of river, creating a perception of displacement among this user group.

Private aircraft use would continue to have unlimited access to Pittsburg, Dug Bar, and Salmon Bar. The Cache Creek airstrip would be open and helicopter landings would only be allowed at the four designated airstrips. Commercial aviation would be limited to incidental use by permit only. Private aviators only would have access to the Cache Creek airstrip. Use levels could be expected to remain relatively low and stable because of the necessary skills required for flying and landing within the river corridor. Aircraft use would not substantially increase because the 20% slope of the Cache Creek airstrip deters all but highly skilled pilots from landing there. This type of experience would also remain available on several other rivers in the region. The quality of the experience for aviators would be protected and enhanced for private pilots by providing a new opportunity to land at Cache Creek where visitor services and interpretive opportunities were also available.

Trail users would continue to have access to the river corridor year-round but drop camps would be limited to the secondary season. Increasing trail use by horses and hikers could lead to a small increase in competition for river campsites in specific areas adjacent to the Oregon side of the river. Trail users expecting a non-motorized experience (absence of sound from motors) would be displaced. If displacement occurred, this type of opportunity would be available on several other rivers in the region. The overall effect on land-based users in the immediate area of the river would be negligible due to the number of miles of trail in the river corridor and the opportunity for solitude as the trail periodically leaves the river corridor and enters the upland benches within designated wilderness.

Once limits were established on the Snake River, competition for campsites would only increase based upon increases in the number of floaters entering from the Lower Salmon. This would be partially offset by requiring Lower Salmon parties of over 24 people to camp within the short distance between the mouth and Salmon Falls or continue below the HCNRA boundary before camping. This competition could displace some powerboat users to the area of the river between the mouth of the Salmon and Pittsburg provided they had the skills necessary to navigate further upstream, which would actually enhance their experience by reducing competition with another user group. Commercial powerboaters would only be allowed to camp overnight upstream from the mouth of the Salmon, and only if they had a substantial historic use associated with overnight camping, which would help reduce this competition. Snake River commercial and private float use entering this section of the river would be limited, further reducing their need for overnight float use. Drop camps would not be allowed during the primary season. Five private powerboat launches on weekends would be for day-use only, further reducing this competition. However, since the area below the mouth of the Salmon is commonly used by a large percentage of less-experienced, less-skilled powerboaters, some conflict over campsites would continue.

This alternative would have a moderate potential to protect and enhance the quality of river recreation opportunities and meet a variety of user expectations. Both motorized and non-motorized users would have access to the scenic river and access would be based on providing semi-primitive, motorized opportunities for both private powerboaters and private floaters from a regional river perspective. Rules of access would be the same for all users launching on the Snake. However, private powerboat use would be favored over commercial powerboat use on all days, and favored over Snake River float use on weekends in order to adequately address the regional river perspective, especially upstream from the mouth of the Salmon. This emphasis on private powerboat use would be offset by the continuing opportunity for unlimited Lower Salmon float use to enter the Snake River, the low demand by Snake River floaters in use of this section of river, the opportunity for floaters to continue their use of kickers in this section of the river, the opportunity for

private powerboaters to launch small inflatables from their boats on weekdays, and the opportunity for a non-motorized experience in the wild river during the most optimum time of the summer.

REDUCING CAMPSITE COMPETITION

Camping is an important element of the recreation experience on an overnight or multi-day trip in the river corridor. The ability to camp in locations that offer a particular setting, have shoreline features that allow easy access for water craft, or are located where they are logistically important to accomplish the goals of the group can often be highly desired by more than one group at a time.

Some visitors prefer the regimentation of a campsite reservation system to be sure of an assigned camping location during each night of their trip. Others prefer the spontaneity of a first-come, first-served system that provides the opportunity to re-schedule their trip as recreation opportunities or weather conditions justify changes in plans. While there are both pros and cons to both of these systems, it is generally accepted that the recreation experience is enhanced when the following occurs:

- Groups or individuals on the river do not have to compete for the same campsite.
- Groups or individuals do not have to share campsites with other groups.
- Groups or individuals can generally camp out of sight and sound from other occupied campsites.
- There are enough campsites throughout the river corridor to accommodate a variety of group sizes in different sections of the river.
- It is reasonably easy to locate vacant campsites during the duration of the trip to accommodate each group.

Several assumptions were made in this analysis as follows:

- Levels of campsite competition would be acceptable in the scenic river for alternatives that provided for specific limits on the number of users during the primary season (Alternatives A and B would have the potential for unacceptable levels of campsite competition since they do not provide for any set limits on use).
- Levels of campsite competition and associated campsite stay lengths would be acceptable in the secondary season throughout the entire wild and scenic river corridor.
- Alternatives that allowed drop camps would usually require powerboat access to the drop camp sites. Campsite competition in regard to drop camps would be controlled as a component of powerboat access limitations for all alternatives that had specific limits on powerboat use.
- Campsite competition between river users and trail users would be minimal due to the different seasons of use as a result of extremes in temperature in the canyon during the summer months that discourage trail use during the time periods of highest demand for river use.
- A campsite reservation system would not fully resolve all issues concerning campsite competition.
- The recreation experience of river users could be enhanced without the complete elimination of campsite competition. This could be accomplished by managing for reasonably acceptable levels of campsite competition without effecting the recreation ORV.

For the purposes of this analysis, campsite competition is measured subjectively in terms of high, moderate, or low potential for each alternative to reduce competition for campsites as a means of enhancing the camping experience associated with travel in the Wild River corridor in the primary season. The use of campsite reservations as a method of reducing campsite competition is analyzed as a separate effect under **Providing for the Appropriate Level of Visitor Management.**

WILD SECTION - DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In Alternative A, the wild section would continue to be managed for unlimited powerboat use and limited float use. Campsites would continue to be available on first-come, first-served basis, but there would be a management option to implement campsite reservations. As use increased, competition for campsites would continue to increase, creating social conflict. If campsite reservations were implemented, the level of use could continue to increase, and could eventually require reserving single campsites for more than one group at a time.

This alternative would have a low potential to reduce campsite competition. There would be increases in the number of users competing for the same campsite, sharing of campsites with incompatible groups, and visitors experiencing difficulty finding unoccupied campsites at the end of each day. Campsite stay lengths would discourage rapid turnover of campsites for use by others.

ALTERNATIVES B and C

In Alternative B and C, the wild river would be managed with limits on all powerboating and floating. There would be a campsite reservation system for all motorized and non-motorized river users entering the wild river corridor.

These alternatives would have a high potential to reduce campsite competition. There would be no users competing for the same campsite, sharing of campsites would not be necessary, and social conflict as a result of campsite competition would be reduced. Due to total use levels associated with each of these alternatives, there would be the need for a greater number of reservations in Alternative B and a lower number of reservations required in Alternative C. Campsite stay lengths, when compared with the number of overnight users per alternative, would provide for adequate turnover of campsites for others to use.

ALTERNATIVE D

In Alternative D, the wild river would be managed for float use only between Hells Canyon Dam and Kirkwood during the primary season and mixed use between Kirkwood and Pittsburg. Since all float use would be traveling with the river current at about an equal rate, campsite competition would be significantly reduced and all campsites would be available on a first-come, first-served basis.

This alternative would have a moderate potential to reduce campsite competition. The demand for a non-motorized experience in the wild river could result in an increasing trend in campsite stay lengths to two nights per site in the wild river as floaters tried to maximize the non-motorized experience. This could create an increase in competition for campsites. Sharing of campsites would not normally be necessary, but there could be some effect on the recreation experience as a result of campsite competition between float parties if increased use created bottlenecks for overnight camping access in some sections of the river.

ALTERNATIVE E

In Alternative E, the wild river would be managed for weekly periods of exclusive use on an alternating week basis for floaters and powerboaters. Campsite reservations for floaters would be required during the non-motorized week between Hells Canyon Dam and Kirkwood as the result of an increase in the number of daily launches, but powerboaters would be able to locate and set up campsites on a first-come, first-served basis due to their ease of mobility in accessing campsites.

This alternative would have a moderate potential to reduce campsite competition. The demand for a non-motorized experience in the wild river could result in an increasing trend in campsite stay lengths to two nights per site in the wild river as floaters tried to maximize the non-motorized experience. This could create an increase in competition for campsites. Sharing of campsites would not normally be necessary, but there could be some effect on the recreation experience as a result of campsite competition

between float parties if increased use created bottlenecks for overnight camping access in some sections of the river.

Powerboaters would have the mobility to obtain campsites on a first-come, first-served basis and less chance of problems resulting from campsite competition. Sharing of campsites by powerboaters would not normally be necessary, and social conflict as a result of campsite competition between floaters and powerboaters would be eliminated. Most powerboaters would be able to camp without the necessity of changing camps for the duration of their trip, enhancing their experience.

ALTERNATIVE F

In Alternative F, motorized use would be eliminated from the river corridor year-round and non-motorized use would be emphasized. This alternative would also emphasize maximum freedom for floaters while traveling on the river, allowing choice of campsites on a first-come, first-served basis.

This alternative would have a moderate potential to reduce campsite competition. Although the total numbers of users would be lower, there could be more, smaller groups on the river competing for campsites. Sharing of campsites would generally not be necessary, and social conflict as a result of campsite competition would be reduced. The campsite stay length would be adequate to assure a continual turnover of campsites as floaters all traveled downstream at about the same rate of speed, but could be compromised by a trend in longer stay lengths or a higher number of daily launches of small float groups.

ALTERNATIVE G

In Alternative G, motorized and non-motorized use would be managed in a mixed use setting for a variety of recreation experiences. There would be a limited opportunity for a non-motorized experience on Monday through Wednesday from the second Monday of July through the Wednesday prior to Labor Day between Wild Sheep Rapid and Kirkwood.

This alternative would have a high potential to reduce campsite competition. It would initially implement a first-come, first-served system for obtaining campsites. Use levels would be monitored and if monitoring indicated that levels of mixed use were creating unacceptable levels of campsite competition, a series of other actions would be implemented over time to resolve campsite competition. If the level of campsite competition remained at an unacceptable level after all mitigation measures were used, a campsite reservation system would be implemented.

This series of steps to mitigate campsite competition would use the minimum measures necessary to resolve any problems that became apparent following implementation of the use levels associated with Alternative G. These measures would be implemented over time and only when necessary to resolve unacceptable levels of campsite competition. Since it provides for a campsite reservation system as a final solution to resolve the issue, it assures that it would reduce competition for campsites, sharing of campsites would not be necessary, and social conflict as a result of campsite competition would be reduced. The campsite stay length would be adequate to assure a continual turnover for both floaters and powerboaters. Managing total trip length during the non-motorized period would reduce campsite competition among floaters by assuring a continual turnover of campsites.

Table IV-1 -- Capability to Achieve ROS Settings

Alternative	A		B		C		D		E		F		G	
Analysis Category	Wild	Scenic	Wild	Scenic	Wild	Scenic	Wild	Scenic	Wild	Scenic	Wild	Scenic	Wild	Scenic
Access Level	L	L	M	M	H	H	H	H	H	H	H	H	H	H
Sense of Remoteness	L	L	L	L	H	H	M	H	H	M	L	M	H	M
Social Encounters	L	L	L	L	H	H	H	M	H	M	H	M	H	M
Visitor Management	L	L	L	L	M	H	H	H	M	H	H	H	H	H
Facility/Site Management	L	L	M	M	H	H	H	H	H	H	H	H	H	H
Desired Recreation Experience	L	L	L	L	M	L	L	M	H	M	L	L	H	M
Campsite Competition	L	*	H	*	H	*	M	*	M	*	M	*	H	*

H = High potential for achieving objective

M = Moderate potential for achieving objective

L = Low potential for achieving objective

* Acceptable for Alternatives C, D, E, F, and G. Unacceptable for Alternatives A and B.

CUMULATIVE EFFECTS

EFFECTS ON ORV's AND THE RECREATION SETTING (ROS)

Alternatives that provide for an unlimited amount of use or potentially high levels of use in the wild or scenic sections of the river corridor would make it difficult to protect and enhance ORV's. This condition would result in potentially detrimental effects to the ORV's, including failure to maintain the desired ROS setting for the recreation ORV in the affected sections of river (Alternative A, wild and scenic; Alternative B, wild; Alternative B, scenic; prior to establishing allocations based on monitoring).

Alternatives that placed specific, reasonable limits on the number of daily launches would assure, to varying degrees, the ORV's would be protected and enhanced and ROS settings for the recreation ORV would be met. Daily launch limits implemented immediately would achieve these objectives immediately (Alternatives C, D, F, Alternatives E and G in the wild river and on weekends and holidays in the scenic river). Daily launch limits set, but not implemented until monitoring indicated the need to implement, could potentially achieve management objectives without implementing launch reservations (Alternatives E and G on weekdays in the scenic river).

Alternatives that did not effectively manage access to the river corridor could violate the intent of the Wild and Scenic Rivers Act, have long-term negative impacts on ORV's and would not meet the ROS guidelines for access to wild and scenic river corridors, respectively (Alternative A).

Alternatives that relied heavily upon regimentation of users while on the river as a component of visitor management would not enhance the recreation experience and would not meet ROS guidelines for visitor management (Alternatives A, B, C and E for floaters only). Alternatives that focused upon altering on-river behavior of users through appropriate visitor management techniques at portals (including user education) or subtle on-river controls would enhance the recreation experience (Alternatives D, E for powerboaters, F and G).

Alternatives that did not effectively limit development in the river corridor would have an adverse effect on ORV's and would not meet the ROS guidelines (Alternative A). Alternatives that placed varying degrees of limits on facility development would protect and could enhance ORV's (Alternatives B, C, D, E, F and G).

EFFECTS ON SOCIAL CONDITIONS INCLUDING ENCOUNTERS

A major goal of management would be to defuse social conflict and develop positive relations between user groups. Based on historic interactions between powerboat and floatcraft users, this would be most easily accomplished by alternatives that either separate users (Alternatives D, E, F and G), distribute use in a way where all users have some opportunity to meet their expectations in all sections of the river corridor (Alternatives E and G), distribute use in a way that allocations and regulations attempt to treat all user groups on an equal basis (Alternative E), or manage daily use to levels that reduce the potential for negative social encounters (Alternatives C and G).

Alternatives with significantly higher levels of use would increase the opportunity for encounters within user groups and between different users resulting in an overall negative effect on social conditions by increasing the potential for conflict (Alternatives A and B). Alternatives C, D, E, F and G provide for reductions in party size and numbers of floatcraft per trip based on user-determined preferences in party size and numbers of boats over a historic length of time. This reduction would have an overall positive effect on the social experience and number of encounters.

The ability to adjust the primary season based on monitoring of use levels would provide a method for managing social conditions on a continual basis and enhance the recreation experience of users, especially if demand increased in the periods immediately before and/or after the primary season (all action alternatives).

Managing all types of recreation use within the river corridor through launch reservations and/or self-issued permits on a year-round basis would address issues concerning fairness of rules. This requirement would also protect and enhance ORV's by requiring all users to meet specific user guidelines during their visit to the river corridor (all action alternatives).

Management strategies that significantly favored one user group over another in the wild river would increase social conflict concerning issues of fairness of rules, equity of access, and protection of the opportunity for the experience (power over float in alternatives A and B; float over power in alternatives D and F; commercial over private in alternatives B and E).

Alternatives with campsite reservations may or may not decrease competition for campsites and reduce social conflict. Social conflict would continue even with campsite reservations for alternatives which had high levels of use (Alternative A). Alternatives with campsite reservations would help resolve some social conflict in regard to on-site encounters but could lead to increased on-river regimentation of visitors and effect the experience of some users (Alternatives B, C and E for floaters). Some alternatives could create use patterns that would reduce campsite competition to acceptable levels without the need for a campsite reservation system. These include Alternatives D, E for powerboaters, F and G. Alternatives that had specific guidelines to manage campsite competition but also included an option for campsite reservations if needed would assure protection of the recreation experience over time in response to changes to trends in use patterns (Alternative G).

EFFECTS ON DISPLACEMENT OF USERS

Displacement is an important concern in regard to being able to provide users with a broad variety of recreational opportunities that are compatible with legislation, while adhering to a level of use appropriate to the setting. Acknowledging the importance of the effects of displacement recognizes the personal investment of time and expense involved in a recreational activity. It is recognized that some displacement of use will occur with any change in management, but especially when restrictions are placed on previously unrestricted use.

Alternatives that significantly displace motorized users from traditionally or historically used areas on a seasonal or year-round basis would produce a negative effect on the recreation opportunity of motorized users (Alternatives C, D, and F) regardless of the availability of this type of opportunity on other rivers. Some potential would exist under several of the alternatives for permanent displacement of powerboat use due to lack of opportunity on other wild and scenic rivers on a regional basis in quality or quantity sufficient to absorb the displacement (see Appendix H). Alternatives that would close sections of the river on days which normally have low motorized use or for short periods of time would have a minimal effect on displacement of powerboaters (Alternative G).

The effect of alternatives that would limit daily launches to avoid peak use days would displace some users from specific time periods but would not displace them from the river unless they were unable to achieve their expectations during the time period access was available or due to personal time schedules. Some users who would choose not to deal with the procedure for obtaining launch reservations would be displaced as a result of perceived inconvenience.

The effect of alternatives that would displace float use would be negligible due to the variety of river recreation opportunities for non-motorized recreation within the region (see Appendix H). This would include opportunities for both private and commercial one-day float trips. However, this displacement to rivers such as the Lower Salmon where use limits were not in place could increase use levels and affect the recreation experience of floaters on those rivers and, inadvertently, to Snake River users below the mouth of the Salmon.

Commercial use that would be displaced on a temporary or permanent basis or forced to relocate may result in customer displacement from one outfitter to another or reduced services to the public. There could be detrimental effects to specific operations, including business failures

for businesses that had limited ability to adapt to change (Alternatives C, D, E, F and G).

EFFECTS ON SENSE OF REMOTENESS

Alternatives with high levels of use would not protect and enhance the sense of remoteness appropriate for the river designation or a semi-primitive motorized setting and would not meet ROS guidelines for remoteness (Alternatives A and B). Alternatives which denied access to powerboats for continual and extended periods of time for the exclusive purpose of enhancing the experience for floaters would have a low potential to protect and enhance the experience of remoteness in a semi-primitive motorized setting (Alternatives D and F in the wild river). Alternatives which emphasized lower levels of mixed use or were designed to meet a variety of user expectations would protect and enhance the sense of remoteness appropriate for the river designation (Alternatives C, E, and G).

Alternatives that provide opportunities to maximize the sense of remoteness or significantly reduced overall levels of use in certain sections of the river would produce positive effects on maintaining the desired ROS setting for remoteness, especially in a wild river setting (Alternatives C, D, E, F, and G). Inversely, increased levels of use could produce detrimental effects on a visitor's wild river experience by altering the landscape or increasing social encounters in a way that decreased the sense of remoteness they desired (Alternatives A and B).

Alternatives that eliminated pit toilets and picnic tables at campsites and navigation markers from portions of the wild river corridor would enhance the sense of remoteness and improve the visual quality of the resource.

Alternatives that maximized the opportunity for a non-motorized river experience or maximized total use could create increased use of river trail systems that could lead to increased environmental effects on trails from foot traffic and horse traffic and cause additional competition for campsites (Alternatives A, D, and F.) Alternatives that eliminated different types of river access in certain sections of the river could enhance the experience of trail users in the canyon (Alternatives E, D, F, and G).

Alternatives that maximized use, or introduced an element of uncertainty concerning what future use limits would be implemented or when they would be implemented, would lead to a situation where the experience of visitors could be detrimentally affected. Over time, it would become evident that the natural environment had been altered by the presence of an increasing number of recreationists (Alternative A in the entire river and Alternative B in the scenic river).

EFFECTS OF LOWER SALMON NON-MOTORIZED USE AT CURRENT AND PROJECTED USE LEVELS

Under all alternatives, negative social encounters between powerboaters and floaters could expect to increase below the mouth of the Salmon River and, in particular, for alternatives where an allocation system was implemented for Snake River powerboat users (Alternatives C, D, E, F, and G). Expectations of numbers of encounters and a sense of remoteness as experienced by floaters on the Lower Salmon River could create negative social encounters between non-motorized and motorized users on the Snake River below the mouth of the Salmon.

The issue of negative social encounters would not be resolved as long as unlimited numbers of daily float trips could enter from the Lower Salmon. This could potentially affect the desired ROS setting for social encounters on the Snake River. In Alternative G, there would be coordination of management efforts between the BLM and Forest Service on the Lower Salmon / Snake River interface to reduce the number of boats per party and develop camping guidelines based on party size. However, it may not be possible to adequately protect and enhance the recreation ORV, especially on weekends or other periods of peak use prior to implementation of limits established by the BLM for the maximum number of daily float trips on the Lower Salmon. As a result it may not be possible to achieve the desired ROS setting for social encounters below the mouth of the Salmon. This could affect other ORV's depending on the maximum level of use allowed to enter from the

Salmon River prior to the implementation of maximum float trips per day.

Without an effective daily launch allocation system sensitive to Snake River use, it could be perceived that the area of the Snake River below the mouth of the Salmon was being managed to maximize the recreation opportunity of Lower Salmon non-motorized users at the expense of protection and enhancement of Snake River ORV's.

Some displacement of powerboat and floatcraft use originating on the Snake River could occur as the result of negative social encounters with Lower Salmon floaters and increased competition for campsites below the mouth of the Salmon.

Congestion along the shoreline at Cache Creek could increase if the percentage of total Lower Salmon River non-motorized users who stopped at this site continued to increase. This would result in an increased difficulty in managing upstream powerboat traffic from the Cache Creek location. As a result, unrestricted levels of use on the Lower Salmon River could negatively impact management effectiveness on the the Snake River under Alternatives B through G.

The sense of remoteness associated with a scenic river setting could be affected by Lower Salmon use levels that did not consider effects on the Snake River ROS settings.

REMOVAL OF NAVIGATION MARKERS FROM THE WILD RIVER

The removal of navigation (survey) markers in different sections of the wild river may effect boater safety both positively and negatively. Navigation markers were originally installed to mark the deepest part of the channel for deeper draft boats rather than for modern, shallow draft jet boats. Whether or not they are a positive factor in assuring boater safety is highly questionable.

Psychologically, they provide a measure of assurance to boaters that they are navigating the river in the safest location to avoid underwater obstacles. However, boaters who learn to "run" the river by relying on the markers may develop a false sense of security by constant use of the markers, which may result in boater dependence on the markers rather than learning to "read" water. This could create hazards as the river volume increases or decreases, or natural changes occur to the river channel as a result of erosion, deposition, and water hydraulics.

The markers are most ineffective in low water, the time period when they would actually be the most useful to boaters. When boaters depend on them in low water levels, there is the potential for an increased incidence of boats colliding with submerged rocks. The markers do not provide guidance for a boater to determine when to get "on" the markers and when to get "off." Boats continue to hit submerged rocks and gravel bars at locations where navigation markers are present, such as in the confined channels of Kirby Creek. The major component of boater safety is based upon knowledge of reading water at different flows and individual boater skill. As a result, removal of the navigation markers would be considered a negligible effect in regard to powerboat safety.

Since non-motorized users "read" water and do not use the markers to travel downstream, removal would have no effect on float use.

Removal of navigation (survey) markers is considered in Alternatives C, D, E, F, and G in all or portions of the wild river and would be dependent upon coordination with the Coast Guard and Corps of Engineers.

ACCESS TO PRIVATE LANDS

In all alternatives, the total amount of use associated with daily access and egress to private lands will have an effect on the recreation ORV by creating the potential to increase the number of daily entries into the river corridor and the number of daily encounters between users. This effect would be considered to be minimal due to the fact there is no history of access and egress occurring on a daily basis throughout the primary season or the entire year due to the remote location. Other factors contributing to minimize this effect would be the absence of residential facilities on many parcels, the amount of absentee ownership, and conditions

of access that would not allow multiple trips per day or recreational use of the river unless the owner obtains the same permits required for entry by recreationists on a trip by trip basis.

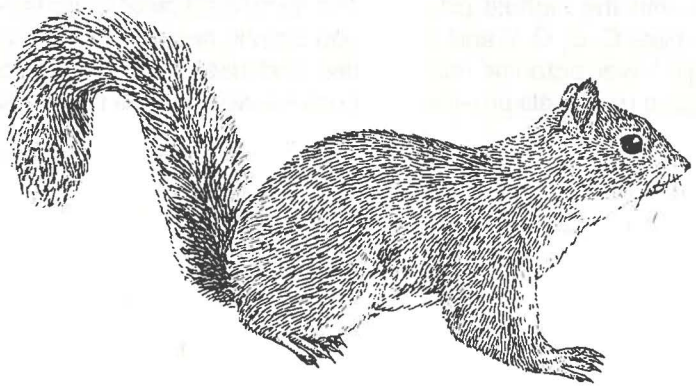
The overall effect of this use would be minimal in the wild river and could only occur between Pittsburg and Kirby Creek. The potential would increase in the scenic river as a result of a larger number of inholdings and the need to maintain access to private lands on the Lower Salmon River.

ACCESS TO GRAZING ALLOTMENTS ON PUBLIC LANDS

In all alternatives, access to grazing allotments would be managed through the terms of grazing permits. This effect would be considered to be minimal due to the fact that there is no history of access and egress occurring on a daily basis throughout the primary season or the entire year due to the remote location, the minimum number of active grazing allotments in the river corridor, and the fact that the most critical need for access is outside the primary season.

AIRCRAFT OVERFLIGHTS

In all alternatives, while aircraft landings would be managed to address the ROS setting of access, aircraft overflights would not be managed and is under the jurisdiction of the Federal Aviation Administration. The number of commercial and private sight-seeing trips could continue to grow and, when combined with the number of aircraft landings allowed in the river corridor, could effect the expectation of remoteness in regard to experiencing periods of isolation from the sights and sounds of others.



ENVIRONMENTAL CONSEQUENCES ON THE GEOLOGIC OUTSTANDINGLY REMARKABLE VALUE

Although the potential environmental consequences of the proposed action and its alternatives on the geologic resource was not identified as a significant issue, the environmental consequences presented here ensure full disclosure of the potential effects and the protection and enhancement of the ORV.

The river corridor defines the analysis boundary for the direct, indirect, and cumulative effects.

DIRECT AND INDIRECT EFFECTS

Direct and indirect effects of the alternatives would be relative to the use levels and the potential to accelerate the natural weathering and erosion of the river corridor. Alternatives with unlimited and/or high recreational use levels (Alternatives A and B, and Alternatives D and F for the scenic section) would have the greatest potential to accelerate these natural processes, but could not be measured over a long period of time.

The risk of fossilized material being removed by recreationists is relative to the use level of any one alternative. Alternatives A and B provide the greatest potential of risk with the highest proposed use levels. Alternatives C, D, G, F and E provide for a decreasingly lower potential risk, respectively. Although higher use levels provide for a greater risk, the risk is considered low in the action alternatives with the management direction of an education program at portals.

The fluctuating clear water flows from Hells Canyon Dam, in conjunction with the recreational activities and use levels proposed in the alternatives, could accelerate the natural erosion of the streamside bank. Alternatives with unlimited and/or high recreational use levels (Alternatives A and B, and Alternatives D and F for the scenic section) would have the greatest potential to accelerate this natural process, but the added impact of the recreational use activities and levels in conjunction with the fluctuating clear water flows from Hells Canyon Dam would be not be measurable over the millennium of time.

CUMULATIVE EFFECTS

Alternatives that propose the highest levels of recreation use have the greatest potential for long-term cumulative effects through the remaining of the planning decade. Alternatives A and B provide for unlimited or high use levels and pose the greatest cumulative effect to the geologic ORV, but again, could not be measured over a long period of time. The effects of recreation use on the geology of the river corridor and surrounding canyon are negligible in relation to short-lived natural disturbances, such as debris flows and cloud bursts.

The fluctuating clear water flows from Hells Canyon Dam in conjunction with recreational activities and use levels would continue to have a cumulative effect on the geologic ORV.

ENVIRONMENTAL CONSEQUENCES ON THE WILDLIFE OUTSTANDINGLY REMARKABLE VALUE (ORV)

Although the potential environmental consequences of the proposed action and its alternatives on wildlife ORV were not identified as a significant issue, the environmental consequences are presented here to ensure the protection and enhancement of the ORV.

When analyzing the effects of the alternatives on wildlife the key indicators are disturbance to wildlife species and habitat alteration:

> Wildlife tolerate a certain number of disturbances per unit time, but that tolerance has limits. Tolerance levels are variable by species, time of year, habitat, etc. (Ream, 1979; Boyle and Samson, 1985). These levels have not been determined for wildlife species in the wild and scenic river corridor.
>
> Introduced annual brome grasslands is the primary plant association found adjacent to the river on the bars and benches. This incorporates approximately 1/3 of the wild and scenic corridor (C. Anderson n.d.). Perennial bunchgrass communities are abundant above the benches. Riparian vegetation has recovered from past grazing activities (Tucker 1979), and is the most diverse habitat for wildlife species within the corridor (Asherin and Claar 1976).

Discussion of Effects. There is not a complete understanding of the effects of human presence or activities on wildlife species and habitat. To analyze the environmental consequences of the alternatives on wildlife resources, effects to species and habitat is based on previous surveys, scientific literature review, and interviews with wildlife managers.

The following assumptions are made for analysis purposes and are common to all the alternatives:

- Secure habitat is available for most species.
- Displacement or disturbance of wildlife will be greatest on or immediately adjacent to the Snake River.
- Some species have habituated to the presence of humans or are not negatively effected by their presence.
- Effects of noise on wildlife is variable (Busnel 1978), but the combination of noise and intrusion may negatively effect wildlife (A. Bowles pers. comm.).
- The scenic river shows a greater amount of habitat diversity than the wild section due to human influences (agricultural fields). A greater number of individual animals are likely to occur in the scenic section because more miles are classified as scenic and because two major tributaries enter the Snake River in the scenic section. Species of wildlife do not differ between the designated sections.
- A greater amount of stress to wildlife is present during the secondary use season due to adverse climate, reduced prey bases, human intrusion and hunting pressure, and a greater number of recreationists traveling through calving or fawning grounds.

The analysis boundaries for direct and indirect effects is the wild and scenic corridor from Hells Canyon Dam to the confluence of the Grande Ronde River. The cumulative effects analysis area includes the Hells Canyon Wilderness.

A full discussion of effects to endangered, threatened, or sensitive wildlife species is discussed in the biological assessment (reference analysis file).

Management indicator species and their primary habitat for Hells Canyon NRA are:

Indicator Species	Primary Habitat
Pileated woodpecker	Old-growth and mature forest
Primary cavity excavator	Snag habitat
Goshawk	Old-growth and mature forest
Rocky Mountain elk	Cover and forage
Marten	Old-growth and mature forest

These habitats are limited within the wild and scenic river corridor although sightings are documented for all but the marten. Analysis of effects to these species is addressed cumulatively with other species under **Disturbance**.

DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

With unlimited visitor access and increasing use, there would be a comparable increase in displacement or disturbance of some wildlife species. There are no historical records of wildlife species or populations. There is a potential that increased encounters and use may result in the loss of some species or individuals within the corridor if disturbance exceeds tolerance levels. Loss is defined as emigration, avoidance, or mortality.

Watercraft

Disturbance. With unlimited numbers of watercraft (except for personal motorized watercraft) allowed on the river, increased displacement of wildlife associated with the riverine environment would result. Displacement of waterfowl, bald eagles, and aquatic mammals would be the greatest.

Observations of how these species respond to powerboats traveling on the river (intrusion and noise) is variable. With waterfowl, species type, prior experience (i.e. human habituation), and river width are perhaps the most important factors dictating responses related to passing powerboats. Smaller-bodied waterfowl tend to flush unless the river is wide enough for a boat to pass greater than 400 feet away. Individual bald eagles remain with passes within 50 feet of the perch. Some eagles flush and leave the corridor, while others flush, move to another perch, and remain when the powerboat passes. Otters generally go below the surface of the water and remain out of sight.

Other species have habituated to the presence of watercraft and will move a short distance away or into hiding cover. Displacement results in unnecessary energy expenditure, altered foraging patterns, reduced feeding time, and altered social activities (Knight 1984). With most boats operating on the river outside of wildlife high use periods (dawn and dusk), fewer animals will be impacted.

Due to the mobility of motorized and non-motorized watercraft, large areas can be impacted by a single craft. Although the immediate impact to an area will be of short duration, effects to species may be longer. Bald eagles disturbed by human activity on the Nooksack River did not return for several hours and then only after the disturbance was gone (Stalmaster and Newman 1978). Conversely, the same report cited a study that suggested that if the area is a preferred feeding site tolerance levels may be higher. There is a high potential for watercraft to be present throughout the wild and scenic sections during the primary use season and no areas undisturbed for wildlife to remain. The increasing numbers of watercraft with this alternative may reduce the number of waterfowl nesting on the Snake River.

Habitat Alteration. The effect of boat wakes on wildlife habitat is minimal. Daily flow fluctuations due to normal dam operating procedures affect the riparian reaches and shorelines to a greater

extent than powerboat wakes or waves (reference Appendix E).

Aircraft Use

Effects of aircraft use within the corridor may result directly in mortality due to strikes or indirectly through displacement. Literature reviews indicate that large herbivores do not alter use of habitat when aircraft flew within 1,000 meters one to five times a day (USDA-FS 1992). Since there is no record for current or projected aircraft use, it is difficult to analyze effects.

Disturbance. The conclusion of a literature review of aircraft overflight effects on wildlife was: "Animal responses are only rarely consequential." (USDA-FS 1992). "Startling" was the most consistent response reported for birds and small mammals. Studies of effects to invertebrates, amphibians, reptiles, and fishes are lacking. Ground vibration may be a factor but this would be a short duration disturbance, during take-offs and landings. The location of landing strips in the Snake River corridor mitigates most impacts to large herbivores as they tend to use the upper benches. Aircraft approaching or taking off within 1,000 meters of a herd will result in displacement. Distance and duration are variable (Ward and Cupel 1979). Predictors for response are prior experience, time of year, and activity.

Habitat Alteration. Maintenance at airstrips has not altered habitat to any extent as the location of landing strips are on previously disturbed sites. Vegetative cover is similar to adjacent areas.

Recreationists, Campsites, Drop Camps, Backpackers, and Horsepackers

With 18% of the river corridor in campsites, roads, or trails there is sufficient habitat available. Therefore, human occupation of these areas and impacts to the sites have medial effects.

Disturbance. Direct effects of campsite occupation is temporary displacement of individual wildlife species that reside in or use the habitat adjacent to these sites. Effects to different species are variable. Passerines will move away from an intrusion but will remain in the area if the disturbance is predictable or is one that they are habituated to. Once the disturbance has ceased, they will return to feed or roost within a short period of time. Increased camping may reduce the number of waterfowl nesting on the Snake River. A small population of nesting Canadian geese have the greatest potential to be impacted, especially near brood-rearing areas. Campsites are located within two of these areas. During years of high water flows, broods are present during the high use recreation season resulting in increased negative impacts by campers (V. Coggins, pers. comm.). An indirect effect of human occupancy is modification of habitat, disturbance or displacement of wildlife, or changed habitat conditions to favor one species over another (Blakesly and Reese 1988, Liddle 1975). This may ultimately result in a species being displaced from the immediate area.

Effects to raptors will be greater as they are more sensitive to human intrusions. Potentially negative impacts are highest during April and May when raptors are establishing pairbonds, courting, or incubating. Nesting habitat is more extensive above the corridor; effects to nesting raptors are expected to be minimal. With increased use anticipated with this alternative, additional campsites may be located above the corridor and a greater number of breeding territories may be affected. Effects may be relocation of nest sites or abandoned territories if the disturbance is long-term and prior to the incubation or nestling stage of the breeding cycle. Within foraging territories, raptors will return when people leave the area or a disturbance ends.

Large ungulate use will decrease adjacent to both camps and trails, up to 1/2 mile (Thomas et al 1988). With repeated disturbance, ungulates will either habituate to that disturbance or abandon use in that area. Other wide ranging species, such as members of the weasel family, are not as likely to be impacted to any extent by river corridor recreationists as they avoid areas occupied by humans. Increased use with this alternative may result in changes in habitat use.

As awareness and use of the river and trail system increases, encounters with wildlife will in-

crease. Without an active public education program in place, the potential for a greater number of negative impacts or encounters exists.

Habitat Alteration. With unlimited recreational use on the Snake River, a proportionate loss of vegetation and greater soil compaction is anticipated. However, results of monitoring 20% of the river's campsites during the spring of 1994 indicate a greater amount of vegetative cover in some of the campsites in spite of increased use. This may be due to the time of year surveys were taken, improvement in camping techniques (low impact camping), or response of vegetation to weather conditions.

Duration of displacement may be only minutes for some species or the full time an area is occupied for others. Popular campsites will have fewer ground nesting birds or species with small home ranges. Campsite monitoring indicates less vegetative cover and a greater amount of bare mineral soil in camp areas when compared to areas adjacent to the campsites. Consequently, there is less food and vegetative cover for small mammals and birds in the camp area. Approximately 11 acres of the wild and scenic corridor is campsites. Reference Appendix J for a summary of campsite conditions and comparison to 1979 data.

Thirty-five percent of the river campsites are adjacent to perennial streams (USDA 1985). The monitoring of two campsites in riparian zones indicate less vegetative and shrub cover occurs in campsites than in adjacent areas. With increased recreation use anticipated with this alternative, further reductions in vegetation in camp areas will likely occur. Effects to wildlife will be a decrease in wildlife habitat effectiveness (Thomas 1979), or altered wildlife use (Knight and Fitzner 1985, Blakesly and Reese 1988).

The removal of trees for fuelwood is occurring and is anticipated to increase with this alternative resulting in less food and cover for many wildlife species. Mortality of trees also occurs by tying pack and saddle stock to trees. With stands of trees rare in the corridor, either activity will risk habitat degradation or loss.

Sheds and Silos

No structures would be removed with this alternative. Current use by bats and other species would not be affected.

DIRECT AND INDIRECT EFFECTS OF ALL ACTION ALTERNATIVES

Management requirements for each of the action alternatives are anticipated to benefit both wildlife species and recreationists. This will be achieved through implementation of a public education program at portals, posting regulations at rim trailheads, reducing numbers of recreationists, reducing stay lengths and party size, initiating a solid human waste carryout system, prohibit the burning of live or dead native vegetation, and providing means to tether riding and pack stock.

ALTERNATIVE B

Direct and indirect effects of Alternative B would be similar to those anticipated with Alternative A except for limiting powerboat use during the primary season and opening landing strips. By regulating use in the wild section, fewer disturbances may result. However, projected increased numbers of users coupled with boats that are displaced from the wild section during the primary season will result in greater impacts to species and habitat within the scenic river. Opening additional landing strips will not benefit wildlife and will likely compound the effects of aircraft and strips as detailed under Alternative A. This alternative will have less impact than Alternative A and greater impact than Alternatives C through G.

ALTERNATIVE C

Direct and indirect effects of Alternative C would be fewer boats per day during the primary use season, and a year-round reduction in party size. Risk to both wildlife species and their habitat would be low. A smaller party size may reduce camp sizes, over time, and increase vegetation cover adjacent to and within camp areas.

Displacement of a nursery colony of bats would likely result with the removal of a shed with this

alternative (Perkins 1993). This effect may be temporary if the bats utilize roost boxes that would be placed on site for mitigation. This alternative will impact wildlife species and their habitat the least of all action alternatives. Opening additional landing strips will not benefit wildlife and will likely compound the effects as detailed under Alternative A.

ALTERNATIVES D, E, AND F

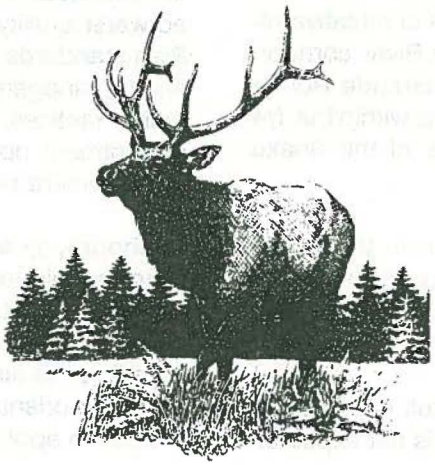
Effects of each of these alternatives are similar to Alternative C except for the closure of the wild section to motorized use during the primary season or with bi-weekly motorized use and the greater number of boats allowed on the river during the primary season. Reduced number of boats in the wild section will not be a significant change for wildlife. With the likelihood of a greater number of individuals being within the scenic section, the risk for wildlife being negatively impacted increases. With the greater number of floaters allowed in Alternative F, more impacts at campsites are anticipated. Except for Alternative F, personal motorized watercraft use in the scenic section is anticipated to have similar effects as described in the watercraft section of Alternative A. Risks of each of these alternatives are anticipated to be moderate.

ALTERNATIVE G

Effects of this alternative are expected to be less than Alternatives A, B, and E due to further reductions in number of recreationists during the primary season. A greater number of recreationists will be permitted in this alternative as compared to Alternatives D, F, and C. Beneficial effects are anticipated over existing conditions. Effects of increasing the party size number by four over the other action alternatives may result in less recovery of vegetation within and adjacent to camp areas. Further reducing the campsite stay lengths in this alternative will be medial as impacts to soil and vegetation from camping occur within the first few weeks of regular use. Additional beneficial mitigation in this alternative will be to prohibit the burning of native material. Effects of this will be reduced soil sterilization and increased cover and food availability.

CUMULATIVE EFFECTS

Past, present, currently proposed, and reasonably foreseeable projects within or adjacent to the Snake River corridor and Hells Canyon Wilderness are focused on making the area more accessible to a greater number of people. Public awareness of the HCNRA is increasing. This will likely result in a greater number of users on the river and trails, subsequently increasing disturbance to wildlife species and increasing alteration of habitat. Alternative A has the greatest risk of cumulative disturbance and habitat alteration relative to the other alternatives due to anticipated continued exponential increases in unregulated recreational use. Alternative C is anticipated to have the least cumulative disturbance because it proposes the most restrictive recreational use when compared to other action alternatives.



ENVIRONMENTAL CONSEQUENCES ON THE FISHERIES OUTSTANDINGLY REMARKABLE VALUES

Through the public scoping process, one significant issue in the proposed action was the effect of recreational activities on federally-listed endangered sockeye salmon and on federally-listed threatened spring/summer and fall chinook salmon. This issue can be broken into more specific questions, including:

- What level of effect do powerboats, floatcraft, and other recreational activities have on pre-spawning (migration or courtship displays) and spawning behaviors (redd building and egg laying) on salmon?
- What level of effect do powerboats passing over or near redds have on developing fall chinook salmon embryo?
- What level of effect do motor boat exhaust, oil and fuel emissions have on chinook and sockeye fisheries?

Other relevant, and no less difficult, questions have arisen concerning increasing fishing pressure on sturgeon and the effect on individual fish being caught repeatedly. What are the effects of campsites and other activities located near streams on water quality and ultimately on wild steelhead, redband trout, and spring/summer chinook salmon?

For the purposes of this analysis the area of analysis for direct, indirect, and cumulative effects includes the entire Snake River corridor, north to the confluence of the Grande Ronde River, and those tributary streams within the 1/4 mile corridor along both banks of the Snake River.

Water Quality. Water quality within the Snake River is primarily a function of upstream water use and the operation of Hells Canyon, Brownlee, and Oxbow Dams.

Biological degradation as a result of the emissions of fuel, oil and/or exhaust is not expected to be significantly different regardless of the alternative selected. While the majority of motor boats using the wild and scenic are jetboats, some watercraft are equipped with outboard motors--including "kickers" on rafts to aid downstream travel through the slower waters in the scenic section. Jetboats have inboard engines with oil and fuel contained within the hull and exhaust vented into the atmosphere. Fuel and exhaust emissions from outboard motors are not necessarily vented within the vessel's hull. Although concern for potential water quality degradation due to the use of both types of engines is warranted, the potential for degradation is considered low. The most likely source of fuels and oils getting into the river would be during maintenance, or through occasional sinking of powerboats. Powerboats sink at an estimated rate of five per year, with four usually being recovered. A sunken vessel will usually contain its fuel and oil unless ruptured. Effects from such an incident have not been documented and are presumed to be minimal due to the dilution from the large volume of water in this river. Through boater education (see Mitigation Measures In Common To All Alternatives), the effects are expected to be minimized in all alternatives.

Water quality within most of the tributary streams is considered good to excellent (Brad Smith, pers. comm.). Water quality is degraded in a few streams as a result of mining activities outside of the HCNRA (Deep Creek, directly below Hells Canyon Dam), livestock, and in some cases sediment entry from roads. The water quality of these streams is not expected to change appreciably regardless of the alternative selected. Areas identified as having degraded water quality will be managed under Forest Plan standards and guidelines, through watershed management practices (Best Management Practices, Blue Book), or through revision of allotment operating plans and/or allotment management plans.

Methodology and Assumptions. Formal modeling techniques concerning salmonid interactions with river traffic on larger river systems are currently unavailable. Research specifically addressing this issue is still in preliminary stages, generally oriented to laboratory conditions, and difficult to apply to field conditions at this time.

All investigations to-date have focused primarily on direct effects to salmonid embryo. Cumulative effects and long-term indirect effects have not been studied, but are considered in this document. Additional information concerning salmonid interactions with jetboats is detailed in the biological evaluation, available for review in the analysis file.

Analysis assumptions and conclusions concerning salmonid interactions and river use include:

- Fall chinook redds are found primarily on lateral gravel bars outside the main channel where most powerboat operation occurs (Bill Arnsberg, pers. comm.).
- The majority (90% or greater) of fall chinook redds are located outside the wild and scenic river corridor. Most redds are located between the northern boundary of the designated wild and scenic river and the reservoir created by Lower Granite Dam (Glenn Mendell, pers. comm.). An anticipated increase in river traffic, particularly powerboats, will occur below the wild and scenic river regardless of the alternative selected.
- Fall chinook salmon involved in spawning courtship displays, redd building, and fertilization are considered sensitive to disturbance from boats passing over that area of activity.
- Historically, spring/summer chinook salmon occasionally used Sheep Creek and Granite Creek as spawning and rearing habitat. The Snake River is used as a migration corridor and as juvenile rearing habitat for these streams, and for runs entering the Grande Ronde, Imnaha, and Salmon Rivers.
- Spring/summer chinook may have at one time used streams such as Saddle, Temperance, Kirkwood, Getta, Wolf,nd Bernard Creeks, but are not using them at this time (Dave Mays, pers. comm.).
- Sockeye salmon use only the scenic river as a migration corridor into the Salmon River, and do not use the wild section.
- Powerboat use below Hells Canyon Dam has increased in past years. Data indicating use increases over the past three years is appropriate in projecting use increases over the next five years. (Jim Caudill, pers. comm.).
- Potential disturbance to spawning salmon from boats is possible when these vessels pass close to salmon. Disturbance to eggs within redds is possible if a boat were to pass directly over a redd in relatively shallow water. Effects may occur from physical disturbance to the gravels within the redd.
- Floatcraft that utilize outboard engines as kickers are more likely to travel in the shallower waters along the river's edge, outside of the main current. It is possible the use of these kickers may have a potential to disturb fall chinook spawning along shallower gravel bars.

Discussion of Effects. Key indicators are based on either high, moderate, or low degree of risk of impact on fish species. Effects are divided into:

- potential for salmon to be accidentally caught by anglers,
- potential for boat disturbance to migrating and spawning behavior,
- potential disturbance resulting in mortality to eggs/embryos within a redd, and,
- potential for salmon to be disturbed while in a tributary stream.

In general, direct and indirect effects are considered to have low probability of occurrence at this time. Greatest concern lies in the potential for a jetboat to disturb or destroy an existing fall chinook redd with jet outwash. Although the likelihood of this occurring is relatively small, the potential exists and may be considered a "taking" of a federally listed threatened species. The determination will be made by the NMFS based on the biological assessment of the preferred alternative. Mitigation measures include boater education and marking of zones where known fall chinook redds are found to be at risk to significant disturbance from boats (reference Chapter II, Mitigation Common To All Alternatives).

Fall chinook are known to be occasionally and accidentally caught during the autumn steelhead sports fishery (Keith Kiler, pers. comm.). Although the occasional capture is the exception rather than the rule, it is anticipated as recreation increases during this part of the year, (and if fall chinook populations increase), the possibility of catching fall chinook would also increase proportionately. At this time, there are no use restrictions on the wild and scenic section of the Snake River during October/ November when steelhead fishing is most popular. Mitigation includes increased visitor education in the identification of chinook salmon and proper handling and release if one is caught.

If disturbance to adult salmon is occurring as a result of passing boats, the location where the potential effect would be most likely is the area of analysis north of the Salmon River. In general, river traffic for powerboats reaches its greatest levels later in the morning and again in late afternoon. Powerboats continue to use the river corridor throughout the day, although at notably reduced levels early in the morning, through mid-afternoon, and through the evening hours. The duration of time for the maximum potential of effects to occur at a specific site is considered to be short (less than 10-15 seconds), yet repeated for 3-5 hours each day. Magnitude and intensity of the disturbance is expected to be low.

Occasional disturbance to spawning spring/ summer chinook salmon and steelhead trout in tributary streams is also possible. Probability of disturbance would increase proportionately with increasing use. Disturbance might be unintentional, creating a minor and temporary stress on a fish, or intentional harassment which may kill a fish or diminish successful spawning activity. It is assumed through active visitor education, increased awareness for the needs of these fish would minimize the extent and severity of disturbance.

Reference Table IV-2 for a summary of effects of alternatives on salmon species.

DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

Alternative A would have a low potential to negatively affect fisheries ORV's in the wild and scenic river. Greatest concern is the lack of visitor education. Awareness of the very low numbers of salmonid populations and respect for their specific needs is essential to protect them, particularly in light of projected increases in visitor use.

Sockeye salmon use 188 miles of the Snake River as a migration corridor and move into the Salmon River from late June through early August (Corps, 1992). Twelve miles of this length is within the HCNRA. There is no documented evidence that suggests direct or indirect effects of jetboats on sockeye movements/migrations in large river systems. Jetboat and floatboat activities do not have direct effects to the sockeye salmon migrating through this reach of the river. These fish would probably encounter a greater number of powerboats under this alternative. Sockeye salmon are not known to use the wild portion of the Snake River for any part of their lives. Potential risk to migration disturbance in the scenic river due to recreational activities during the primary season is expected to be low.

Indirect effects from angling are insignificant. There is no documented evidence of accidental catch of sockeye salmon. Since sockeye salmon generally do not feed during migration, it reduces their susceptibility to angling. The proportion of sockeye to other sport fish is so small, the chance of catching one is insignificant.

Sockeye salmon adults are not expected in the river corridor during the secondary season. There would be no effect to sockeye redd sites under this alternative.

Spring/summer chinook salmon enter the wild and scenic river primarily in mid-May. Naturally spawning spring/summer chinook in the Snake River are virtually non-existent since the construction of Hells Canyon Dam. While there may be an occasional naturally-spawning spring/ summer chinook in the Hells Canyon reach, the

run has basically been replaced by hatchery stock from the Rapid River hatchery. Therefore, there is no potential for disturbance of spawning fish or disturbance of eggs and embryos in the redd.

Occasional residualized fish from past outplanting have been reported in tributary streams (Ed Schriever 1994). This run uses approximately 247 miles of the Snake River in their migration to the dam where they are captured for the Rapid River hatchery. Spring/summer chinook salmon also migrate through the Snake River to the Imnaha River and Salmon River. These runs partially consist of naturally reproducing salmon. The potential for disturbance to spring/summer chinook salmon in tributary streams is low and would not result from boating activities.

There is no documented evidence of jetboats or floatboats disturbing migrating salmon in the Hells Canyon reach. Direct effects to the salmon migrating through this reach of the river from jetboat and floatboat activities are unknown. Potential spawning disturbance from river boat traffic on spring/summer chinook is not expected.

Indirect effects related to angling in the Hells Canyon reach may effect spring/summer chinook salmon, but it is unlikely. Although salmon may be caught by anglers, catch is minimal according to reports to NMFS from Idaho Fish and Game (IF&G) based on their Section 10 "taking permit" for incidental catch. The number of fish allowed in the taking permit is based on the proportion of salmon to the projected catch of trout and steelhead.

The greatest concern for effects to listed salmon is for the fall chinook. Fall chinook spawn and rear within 71 miles of river corridor within the HCNRA. Fall chinook actively spawn from late October through early December, which coincides with the continuation of powerboat use during the fall steelhead fishery, chukar and big game hunting seasons. Under Alternative A, there are no plans to limit use during the autumn months. The majority of private powerboats during this season originate and stay in the scenic section.

Considering the extremely low numbers of fall chinook salmon found within the Snake River watershed, the probability of an adverse effect is very low (18 fall chinook redds were counted within the HCNRA in 1993). Motorized use levels during spawning periods were reviewed, but analysis of potential effects that may occur due to ten boats/day versus 20 boats/day was not possible to complete due to the probability of effect being very small (similar to comparing the probability of one in one million to two in one million, both are very small).

Fall chinook spawn in the river during the secondary season, during which time floatboat use is nearly non-existent. Few float parties launch during October, and there are virtually no launches reported in November through the winter season (launches are permitted during this time of year, but users do not typically float the river in the late fall and winter due to cold weather).

Jetboats continue to use the river, mostly coming upstream from Lewiston during the steelhead fishing season from September 1 until April 15. Use averages approximately seven boats per day in October, three boats per day in November, and three boats per day in December (based on use information of permits issued during the 1989-1992 seasons) from the HCNRA boundary to Wild Sheep rapids which is typically the extent of spawning habitat. Peak use may rise to 25-30 boats per day, particularly on weekends, during the months of October and November depending on the steelhead fishing, but drops off again during the week. Use is primarily in the lower scenic section from Cache Creek administrative site to the confluence of the Salmon River. During October through December, approximately 33% of the boats operating in the HCNRA operate in this section (based on 1992 use data). During the secondary season the potential risk that boats would directly disturb fall chinook spawning activities in both wild and scenic river sections is considered low.

Disturbance of spawning fish is typically unintentional. Reynolds (1993) found that spawning sockeye disturbed from their redd building activity would return in 1-2 minutes and continue spawning activity. Disturbance caused by slow-

er moving objects such as a person or bear walking in the stream would result in a longer period of disturbance, up to four minutes.

The 1993 redd surveys located one area, outside the HCNRA, where several redds were within the channel. This is the exception rather than the rule. The water depths in these locations are enough to prevent any direct effects to spawning fall chinook. The fish that continue to spawn in these locations probably habituate to the sound disturbance from the passing jetboats (P.Groves, 1994).

Recent work in Alaska indicates that direct effects on salmonid eggs occur from direct mechanical damage to redds when jetboats pass directly over redds at water depths of less than 0.2 meters (Reynolds et al. 1993). Past work completed in New Zealand suggests that jetboats are capable of causing mortality of salmon eggs during the early stages of egg incubation; however, this report also acknowledges the shortcomings in applying the results of these studies to field conditions (Sutherland & Ogle 1975).

The greatest concern is in the potential for jetboats to significantly disturb, or possibly destroy, existing fall chinook redds with jet outwash. Reynolds (1993) found no significant mortality to various stages of eggs to embryos in an experiment where two consecutive passes were made over a redd at water depths ranging from 10 to 70 cm. In additional experiments they changed the treatment to two passes on each of six consecutive days. Their results showed a high mortality rate (75-100%) in shallow water (13-21 cm) and a lower rate of mortality (0-65%) in deeper water (23-29 cm). The likelihood of this occurring to fall chinook redds within the Hells Canyon reach is relatively small. Reynolds (1993) showed the highest rates of mortality at water depths less than 21 cm. In water depths 23-29 cm they showed mortality rates 0-65%, most of which was attributed to unknown causes. Fall chinook redds are typically deeper than this (>70 cm). In 1991-1992 depths of redds in the Hells Canyon reach ranged from 42 to 167.6 cm, with peak utilization between 76 and 106.6 cm (P. Groves 1993). Reynolds (1993) did not record any mortalities in this depth range in his investigations. Only in cases where the redds are found in shallower water would the potential exist for jet outwash to damage the redd. Typically the large jetboats operating in Hells Canyon do not operate in water less than 30 cm deep unless they are pulling into a beach. Fall chinook do not typically spawn in these high use areas.

There are several differences in fall chinook spawning habitat and the sockeye habitat studied by Reynolds that would allow one to infer that the effects to fall chinook redds would be somewhat less. Fall chinook typically spawn in deeper water and larger substrate than sockeye. Fall chinook in the Hells Canyon reach of the Snake River typically spawn in water depths ranging from 0.7 to 2.0 m. Actual depths of redds may be less (0.15 m) or greater at times due to varying discharges from the Hells Canyon dam. Depths greater than two meters are not expected to be affected by boating activities. Substrate sizes used by fall chinook are typically larger (2.5-15.0 cm) than substrates used by sockeye in this study (0-8.0 cm). Water velocities in the study area are similar to those used by fall chinook (0.55 to 1.22 m/s). Also the boats used for the study in Alaska were smaller than the boats operated on the Snake River and are capable of operating in shallower water.

State and federal fisheries biologists contacted generally agree that jetboat traffic on the Snake River does not cause direct mortality of salmonid embryos (Mendell, G. 1993, Keiler, K. 1993, Sundberg, K. 1993). This is primarily due to the water depth where redds are located, the short time a passing jetboat would influence embryos, and redds being located outside the main river channel where jetboats normally operate. Biologists agree that there is a remote possibility that a redd could be affected by a direct outwash (Mendall, G. 1993, Arnsberg, B. 1993). All formal investigations to date have focused primarily on direct effects on salmonid eggs and embryos, not mechanical damage from outwash. Although floatboats and powerboats typically stay in the main channel of the river away from the lateral gravel bars where spawning occurs, disturbance of fall chinook spawning in the river is possible. Occasional passage of a boat over a redd may occur. Casual observations of spawning fish indicate that they will return to the redd and continue spawning and

probably habituate to the sound of passing boats. Potential risk for powerboat activities to directly disturb a redd site is considered moderate.

Fall chinook are known to be occasionally and accidentally, but seldom, caught during the autumn steelhead sports fishery season. IF&G monitoring for accidental catches have shown that accidental catch is minimal and no mortalities to fall chinook have occurred. IF&G has a Section 10 taking permit for incidental catch of salmon, which is reported to the NMFS. The number of fish allowed in the taking permit is based on the proportion of salmon to the projected catch of trout and steelhead. State agencies including both the IF&G and ODF&W in cooperation with BPA, increase enforcement during the fall chinook migration and spawning season. Potential for an angler to inadvertently hook a fall chinook is considered low under this alternative.

As the adult steelhead move into either Sheep or Granite Creek, a low potential exists they may be observed by recreationists, possibly leading to intentional or unintentional disturbance. As visitor use increases, so does the likelihood of visitor encounters of spawning steelhead. The likelihood of these fish being disturbed within these streams, or of eggs being damaged within a redd, is considered low due to a general tendency for these fish to move within a tributary stream at night, the high density of vegetation on stream banks, and the relatively distant proximity of trails from the stream.

Increasing fishing pressure on sturgeon has brought an increasing concern toward this fishery. Factors contributing to this concern focus on a greater interest within the public to participate in the fishery and an increasingly greater skill level in fishing for this species. Direct management considerations of this fishery is outside the scope of this document. However, it is reasonable to expect fishing pressure to increase proportionately with increasing use, particularly in light of the increasing popularity of this fishery. Potential risk for negative direct effects on this fishery under this alternative is considered moderate for both the primary and secondary seasons.

ALTERNATIVE B

Alternative B would have consequences similar to those projected in Alternative A, except for the following management requirements: a finite level of powerboat use in the wild river during the primary use season; mitigation measures involving increased visitor education toward fisheries ORV's; mitigation in the identification of known fall chinook redd locations. Identification of these areas would help boaters navigate around redds, reducing potential effects on developing embryos.

Direct and indirect effects would be similar to Alternative A for spring/summer chinook and sockeye salmon throughout the river corridor. Limitations on powerboat use anticipated in the wild river would slightly lower the probability of disturbance to fall and spring/summer chinook, compared to Alternative A. Indirect results of this alternative would likely displace powerboats into the scenic section which would have otherwise used the upper wild river. As the lower river would remain without use limitations, and because the majority of chinook and sockeye salmon occur here, potential for disturbance may actually increase slightly over Alternative A during the primary season.

Under Alternative B, the potential risk of spawning and redd site disturbance for sockeye and chinook salmon is expected to be the same as projected in Alternative A. Intensity and duration of effects under this alternative are not expected to be significantly different from those projected in Alternative A.

Fishing pressures on sturgeon would remain essentially the same as projected for Alternative A. As mentioned above, a slight increase in powerboat use may occur in the scenic river as a result of use restrictions in the wild river during the primary season. It is likely fishing pressure would increase proportionately with increasing use.

Campsite reservations, where applied, could be expected to further protect resource damage when implemented. Damage to stream banks and riparian vegetation can lead to increased sedimentation. Fine sediments in salmonid redds is known to reduce embryo survival

through suffocation and enhanced susceptibility to disease. Campsite reservations are considered an effective tool in eliminating use where recreational damage occurs. Although Forest Plan standards and guidelines establish resource protection for riparian areas, Alternative B would have an increased emphasis in monitoring and protecting these resources.

ALTERNATIVE C

Direct and indirect effects to sockeye and spring/summer chinook salmon, when compared to Alternative A, are expected to be similar to, or probably reduced, for the primary and secondary seasons in the entire wild and scenic river. Reduced potential for effects is the result of the reduced number of powerboats expected.

Boat disturbance during the secondary season, (primarily October through January), to fall chinook redds and spawning behavior is considered to have a lower potential risk than Alternative A as a result of powerboat use limitations. It is currently understood that fall chinook adults are not normally found in the area of analysis until September, and juveniles normally migrate out with spring high water (Corps, 1992). Mitigation measures and education efforts in this alternative would be similar as those in Alternative B.

A reduction in boat numbers in the entire wild and scenic river is likely to reduce fishing pressure on sturgeon during the primary season. Throughout the remainder of the year, effects on these fish under Alternative C are expected to be similar to Alternative A.

Campsite reservations and stay length requirements are similar to Alternative B in that greater control of campsite use would be available to managers to reduce the potential for resource damage.

ALTERNATIVE D

Elimination of powerboats from the upper wild river during the primary use season would eliminate potential effects to spring/summer and fall chinook caused by disturbances from these boats. Potential effects from floatcraft are unknown, but due to the increased time fish are exposed to any one craft, it is possible floatcraft may also offer disturbance to spawning salmon species. The potential effects of this alternative to fall chinook and sockeye salmon are expected to be similar to Alternative B.

The number of floatcraft parties found on the river at any one time does not change substantially within any of the alternatives. For Alternatives C, D, E, and F, the number of boats per party and number of people per party are reduced from the existing condition. It is expected the potential for floatcraft to disturb salmon is low in Alternative D.

Most sturgeon fishing occurs with the use of jetboats. Eliminating powerboat use above Kirkwood would significantly reduce fishing pressure on this species during the primary season.

Campsite reservations would not be implemented unless monitoring indicates a need. Resource protection within and near campsites would be similar to Alternative B. At this time it is not apparent how this alternative would compare with others that include campsite reservations as a component.

ALTERNATIVE E

Effects to fisheries ORV's as a result of this alternative are expected to be similar to those outlined in Alternative B. Potential effects to chinook and sockeye salmon are the same in this alternative, for the entire wild and scenic river during the primary and secondary seasons, as those established in Alternative B. Powerboat use limitations would slightly reduce potential for effects to salmon in the scenic river.

ALTERNATIVE F

Elimination of powerboats from the upper wild river sections would eliminate potential effects to spring/summer and fall chinook caused by disturbances from powerboats. As powerboat use would be eliminated throughout the year, it is expected that floatcraft use would increase during a portion of the secondary season. Potential effects to fall chinook are expected to be minimized due to mitigation measures and education efforts outlined in Alternative B. Potential

effects from floatcraft are unknown, but due to the increased time fish are exposed to any one craft, it is possible floatcraft may also offer disturbance to salmon species.

Elimination of powerboats from the wild section is likely to increase use in the scenic section; however, the potential effect of this alternative to fall chinook and sockeye salmon is expected to be similar to Alternative B.

Most sturgeon fishing occurs with the use of jetboats. Elimination of powerboat use above Pittsburg Landing would significantly reduce fishing pressure on this species, year-round.

Campsite reservations would not be implemented unless monitoring indicates a need. Resource protection within and near campsites would be similar to that provided under Alternative B. At this time it is not apparent how this alternative would compare with others that include campsite reservations as a component.

ALTERNATIVE G

Additional information disclosed during the review of the DEIS was considered in the analysis of the final preferred Alternative G.

Alternative G would have similar consequences as those projected in Alternative A, except for the following management requirements: a finite number of boats entering the wild and scenic sections during the primary use season; and mitigation measures involving increased visitor education toward fisheries ORVs, including recognition of fall chinook redds and how to avoid them, and recognition and proper handling of salmon if accidentally caught while angling.

Direct and indirect effects would be similar to Alternative A for spring/summer chinook and sockeye salmon throughout the river corridor. Limitations on powerboat use anticipated in the entire wild and scenic river would slightly lower the probability of disturbances to fall and spring/summer chinook, compared to Alternative A.

Under Alternative G, potential risk of spawning and redd site disturbance to fall chinook salmon is expected to be the same as projected in Alternative A. Intensity and duration of effects under this alternative are not expected to be significantly different from those projected in Alternative A.

Fishing pressures on sturgeon would remain essentially the same under this alternative as projected for Alternative A, with the exception that use limitations would slightly lower potential fishing pressures.

CUMULATIVE EFFECTS

In considering cumulative effects, particularly to salmonids, it is important to appreciate the extent these populations have been depleted. For example, current wild populations of Snake River wild spring chinook are 0.5 percent of historical levels (CBRWA, 1991). Most of the major sources of sockeye production have been lost due to the construction of dams, which have reduced the original surface acreage of sockeye nursery lakes in the Columbia Basin by 96 percent (Corps, 1992). The vast majority of fall chinook spawning habitat in the Snake River basin was lost by the construction of Hells Canyon, Brownlee and Oxbow Dams. Additionally, the physical environment for these fish--primarily water temperature, flows, and chemistry--has significantly changed due to the dams, agriculture, and industry. Biological changes are apparent throughout the range of their critical habitat, including extensive introductions of non-native game fish which compete with and/or consume juvenile salmonids. Formation of reservoirs throughout the Columbia and Snake systems have greatly favored increasing populations of salmonid predators, notably squawfish. As wild stocks continue to decline, it is assumed additional stresses upon individual adults within a population may contribute indirectly and/or cumulatively to reduced reproductive success, and ultimately the continued decline of these populations.

ALTERNATIVE A

Other activities occurring within the corridor that may effect fisheries include; cattle grazing and stock use, which may have an affect on the riparian vegetation condition along the river cor-

ridor. Road construction is minimal within the Hells Canyon reach of the Snake River. Any effects to sockeye and chinook salmon and their habitat from these activities would not be cumulative to the potential effects from jetboating or floating.

Jetboating and floating outside of the HCNRA would have similar effects to fall chinook salmon and habitat. Because there is no documented evidence of actual adverse affects to fall chinook salmon from jetboats or floatboats, it is not expected that such actions will have cumulative effect to sockeye, spring/summer or fall chinook salmon or habitat.

Although recreational access and opportunities are being encouraged, and facilities of convenience are becoming more available, these developments are not expected to have cumulative effects to sockeye, spring/summer or fall chinook salmon or habitat.

Under Alternative A, visitor education is not expected to be emphasized within the wild and scenic corridor. As use increases, it is likely a greater number of visitors would experience some aspect of fisheries, whether as an angler or possibly viewing salmonid spawning. Although speculative, it is reasonable to assume as river traffic increases, disturbance to fall chinook spawning behaviors may increase proportionately.

Cumulative effects to riparian areas near established campsites may be apparent, including soil and vegetative disturbances. Isolated areas within the wild and scenic corridor where recreational activities have disturbed soils and vegetation are noted. It is expected as use continues to increase, so would these disturbances.

Cumulative effects from other activities in the Snake River include possible unintentional disturbance of chinook salmon from fishermen. The IF&G monitors this incidental capture of non-permitted angling.

ALTERNATIVE B

Potential for cumulative effects to fisheries ORV's are similar to those projected for Alternative A, except for the enhanced opportunity for visitor education and mitigation measures protecting known fall chinook redd sites. It is likely that potential effects to water quality and fisheries ORV's can be minimized through active education efforts, mitigation measures, and monitoring outlined in Chapter II and Appendix J.

ALTERNATIVE C

Potential cumulative effects to salmonid habitat and potential disturbances to spawning salmon would be reduced compared to Alternative A. Potential for effects are expected to diminish over time as visitors' awareness of management practices toward salmonid resource protection increases.

ALTERNATIVE D

Cumulative effects under this alternative are expected to be similar to those outlined in Alternative B. Potential for effects on spring/summer chinook would be lower due to the absence of powerboats in the wild river during the primary season. Effects on sturgeon would be beneficial as a result of significantly reduced fishing pressure.

ALTERNATIVE E

Cumulative effects to sockeye and chinook salmon as a result of this alternative are expected to be similar to those in Alternative B. Alternating powerboat and floatcraft river use in the wild section would not have a significant effect on the fisheries ORV's over an extended period of time.

ALTERNATIVE F

Cumulative effects under Alternative F would be similar to those outlined in Alternative B. Potential for effects on spring/summer chinook would be lowered slightly as a result of an absence of powerboats in the wild section. Effects to sturgeon would be beneficial as a result of reduced fishing pressure.

ALTERNATIVE G

Potential for cumulative effects to fisheries ORV's are similar to those projected for Alternative A, except for the enhanced opportunity for

visitor education and mitigation measures protecting listed salmon species. It is likely that potential effects to water quality and fisheries ORV's can be minimized through active education efforts, mitigation measures, and monitoring outlined in Chapter II and Appendix J.

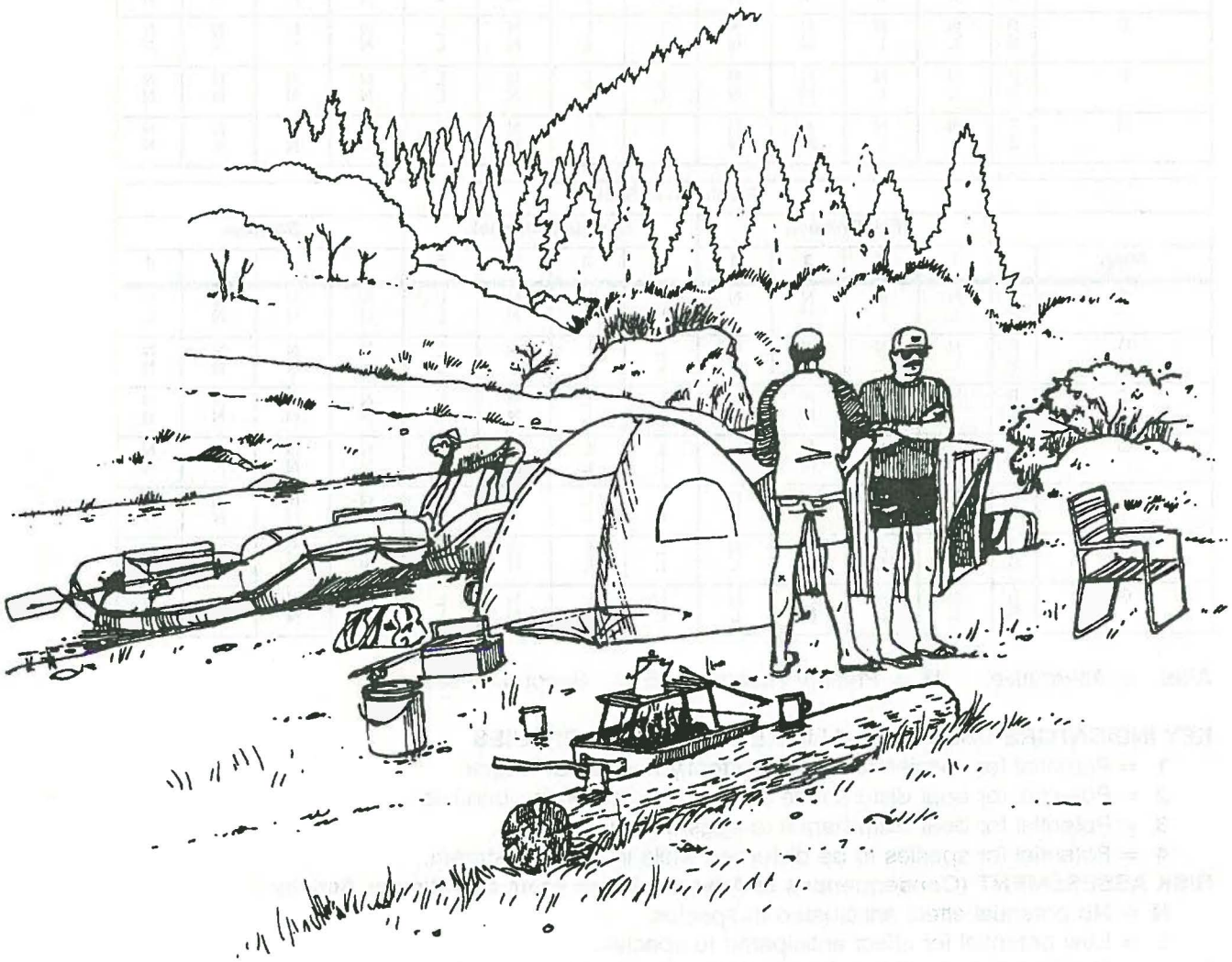


Table IV-2

SUMMARY OF EFFECTS OF ALTERNATIVES ON SALMON SPECIES FOR PRIMARY AND SECONDARY SEASONS

Wild River Section													
		Fall Chinook				Spr/Sum Chinook				Sockeye			
Alter.		1	2	3	4	1	2	3	4	1	2	3	4
A	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
B	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
C	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
D	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
E	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
F	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N
G	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	N	L	L	N	L	N	N	N	N

Scenic River Section													
		Fall Chinook				Spr/Sum Chinook				Sockeye			
Alter.		1	2	3	4	1	2	3	4	1	2	3	4
A	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
B	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
C	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
D	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
E	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
F	P	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N
G	R	N	N	N	N	L	L	N	L	N	N	N	N
	S	L	L	M	L	L	L	N	L	N	N	N	N

Alter. = Alternative **P** = Primary season **S** = Secondary season

KEY INDICATORS USED TO EVALUATE EFFECTS TO SPECIES

1 = Potential for species to be inadvertently hooked by angler.
2 = Potential for boat disturbance on migration/spawning behavior.
3 = Potential for boat disturbance to eggs/embryo in redds.
4 = Potential for species to be disturbed while in tributary stream.

RISK ASSESSMENT (Consequences of Adverse Effect From a Particular Activity.)

N = **No** potential effect anticipated to species.
L = **Low** potential for effect anticipated to species.
None or questionable adverse effect on habitat or population.
No cumulative effects expected.
M = **Moderate** potential for effect anticipated to species.
Possible adverse effects in habitat or on population.
Cumulative effects possible.
H = **High** potential for effect anticipated to species.
Obvious adverse effects on habitat or population.
Cumulative effects probable.

NOTE: Risk Assessment definitions for "low, moderate, and high" taken from FSM 2672.24b - 2676.173, page 6 of 7.

ENVIRONMENTAL CONSEQUENCES ON THE HISTORIC AND PREHISTORIC CULTURAL RESOURCES OUTSTANDINGLY REMARKABLE VALUE

Analysis of the effects of the proposed action and its alternatives on the outstandingly remarkable value of the historic and prehistoric cultural resource is pertinent to the resolution of the significant issue on the prevention of onshore degradation. The key indicator for this analysis is expressed as the relative risk of disturbance to the cultural resources.

The river corridor defines the analysis boundary for the direct, indirect, and cumulative effects.

DIRECT AND INDIRECT EFFECTS

Although none of the alternatives propose site-specific, land-disturbing activities (such as recreational site development, facilities or road construction), the direct effects on cultural resources are related to the amount of land disturbed by the proposed levels of recreation use for each alternative. While the types of impacts associated with recreation use are somewhat predictable, the extent and location at which impacts occur are much less so. In the case of impacts associated with project specific activities, the land manager can usually avoid known heritage resources by simply bypassing the resource in question. Recreation impacts, on the other hand, may occur at random and negate the opportunity for avoidance. A site or resource may be impacted before anyone is aware that damage has occurred. Said impacts may not become apparent until some time later, if at all. Discovery and documentation of impacts would depend upon site monitoring.

Land-disturbing activities have both positive and negative direct effects. If impacts are significant, the resource in question must be stabilized and the impacts mitigated. In the case of a prehistoric site, testing and evaluation would be followed by archaeological data recovery, commensurate with the degree of impact. Scientific knowledge is gained from the data recovery associated with mitigation efforts, but because archaeological excavation is inherently a destructive process, opportunities for permanent "in place" site preservation are lost.

Alternatives with high levels of recreation use (Alternatives A and B for the entire river corridor, and Alternatives D and F for the scenic section) increase the potential for impacts to heritage resources. Alternatives D and F in the wild section may force increased foot and horse traffic to the paralleling trail system, thus generating an increased likelihood of site impacts. Alternative F may increase impacts to heritage resources in the secondary season by providing a wintertime opportunity to loot sites without anyone's presence. The short-term, continued use of campsite pit toilets (prior to implementation of a solid human waste carryout system) would continue to have potential for site discovery and disturbance.

Increased recreational access and activities also cause resource damage that is difficult to control. Damage may result from off-trail hiking, vandalism, and/or artifact collection. Alternatives with increased recreational use (Alternatives A and B for the entire river corridor, and Alternatives D and F for the scenic section) would increase the the potential for impacts to cultural resources more than alternatives with moderate or low levels of recreation use (Alternatives E, G, and C for the entire river corridor, and Alternatives D and F for the wild section). Alternatives D and F in the wild section may force increased foot and horse traffic to the paralleling trail system, thus generating an increase in the potential for resource damage.

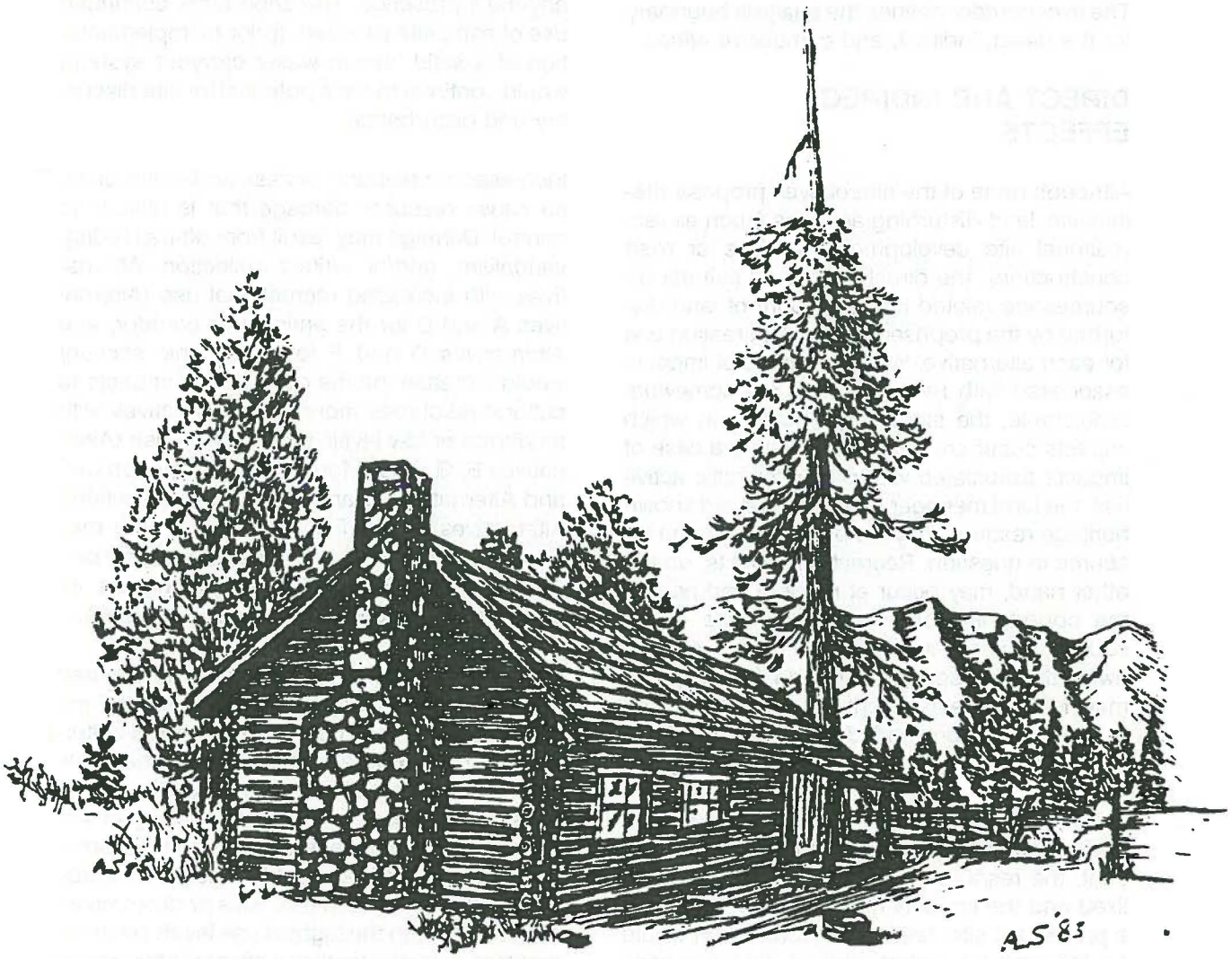
Indirect effects may result from human-created changes in the landscape that expose and endanger previously hidden and protected cultural resources. For example, streamside bank erosion as a result of fluctuating waterflows from Hells Canyon Dam, boat wake, mooring of watercraft along shorelines, and recreational activities along shorelines could destabilize nearby sites and contribute to their loss or destruction. Alternatives with the highest use levels have the greatest potential for these effects (Alternatives A and B for the entire river corridor, and Alternatives D and F for the scenic section).

CUMULATIVE EFFECTS

Alternatives with the highest levels of recreation use have the greatest potential for long-term cumulative effects. Alternatives A and B provide for unlimited or high use levels and pose the greatest cumulative effect to heritage resources. Alternative F would continue to have increased potential for impacts to heritage resources in the secondary season by providing a wintertime opportunity to loot sites without anyone's presence.

The fluctuating clear water flows from Hells Canyon Dam in combination with recreation use would continue to have a cumulative effect on cultural resources. Continued non-motorized access to the wild section in Alternatives D and F could increase foot and horse traffic with resulting adverse impacts on the cultural resources.

The continuation of domestic grazing operations and the initiation of a prescribed natural fire program (anticipated in the summer of 1994) could have the potential to expose and endanger previously hidden and protected cultural resources.



ENVIRONMENTAL CONSEQUENCES ON THE VEGETATIVE AND BOTANICAL OUTSTANDINGLY REMARKABLE VALUES

Analysis of the effects of the proposed action and its alternatives on the outstandingly remarkable values of vegetation and botanical resources is pertinent to the resolution of the significant issue on the prevention of onshore degradation. The key indicator for this analysis is expressed as the relative risk of disturbance from visitor impacts on proposed, endangered, threatened, and sensitive (PETS) plant species, using the intended ROS setting described in Table III-1 and III-2 for visitor impacts.

The Snake Wild and Scenic River corridor contains 50% of the known occurrence of MacFarlane's four-o'clock, an endangered species. Nine additional plant species, which are considered sensitive by Forest Service Regions 1, 4 or 6, are known to occur, or are suspected of occurring, within the river corridor.

Little is known of the biological requirements of the PETS plant species within the river corridor or their response to human-caused changes to the landscape. It must be assumed that all species would react negatively to such influences as mechanical damage from vehicles, humans, stock animals, picking, or invasion of habitat by non-native plant species.

In 1979 all dispersed recreation campsites were identified and inventoried using the Code-A-Site system (Hendee et al. 1976). In 1994, 20% of these were sites were selected to be evaluated using forms and methods published by Hall and Shelby (1994). Using the monitoring plan format designed for the Hells Canyon Wilderness the following was inventoried: use levels, vegetative impacts, size of camp area, barren core, social trails and erosion, and fire rings/scars and tree damage. The survey indicated that recreationist do have an environmental impact on some sites ranging from trampled vegetation, numerous social trails and associated erosion, and fire rings/scars and tree damage. There are also indications on some dispersed campsites that as the clearwater flows, resulting from the Hells Canyon Dam, further erode beaches, recreationist are being forced upslope to establish adequate camping sites.

The river corridor defines the analysis boundary for the direct, indirect, and cumulative effects. To analyze environmental consequences of the alternatives on the vegetation and botanical ORV, the following criteria will be used:

- The opportunity to inform the public about noxious weed identification and transport.
- Potential for ground disturbance which could directly impact PETS plants.
- Potential for indirect impacts to PETS plants due to habitat loss resulting from the invasion of non-native plant species.
- The opportunity to achieve the intended ROS settings for visitor impacts listed in Tables III-1 and III-2.

DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

Alternative A would not provide an active education program for recreation users at portals, so opportunities to achieve the goals and objectives of the Forest Plan for management of noxious weeds would be diminished.

Unlimited recreational use levels would have the potential to cause direct adverse effects on PETS plants through mechanical damage. Two populations of MacFarlane's four-o'clock are easily accessible with no physical barriers to prevent picking or trampling.

Unlimited recreational use levels could result in the transport of noxious weed species from infested areas. This would have an indirect adverse effect through habitat loss to PETS species.

Unlimited recreational use levels could result in not achieving the intended level of ROS setting for visitor impacts. The lack of an active user education program, large party sizes, no ban on burning vegetation, and the lack of a solid human waste carryout system could allow unac-

ceptable camping impacts to continue. Impacts identified in the 1994 sample of dispersed campsites could be expected to continue.

ALTERNATIVES B, C, D, E, F, AND G-PREFERRED

For the purpose of determining effects to PETS plants, little distinction can be made between them and they will be addressed collectively.

An active education program would be initiated at all portals concerning noxious weed identification and transport, which would be beneficial to the achievement of the goals and objectives of the Forest Plan for management of noxious weeds.

The direct and indirect effects would be similar to Alternative A, although the intensity and magnitude would be relative to the recreational use level proposed in the alternative. Alternatives with high and/or unlimited recreational use levels (Alternative B, and Alternatives D and F in the scenic section) would have the potential to intensify and magnify effects similar to Alternative A. Alternatives with moderate or low recreational use levels would have a proportionately lower potential for adverse effects on PETS plants due to lower and more controlled use (Alternatives C, E, and G, and Alternatives D and F in the wild section). Management of the wild section under Alternatives D and F may force increased foot and horse traffic to the paralleling trail system, thus generating an increase in the potential for resource damage.

Mitigation and monitoring proposed in Chapter II and Appendix J would minimize adverse impacts on PETS plant species.

The solid human waste carryout requirement at all dispersed campsites, for all of the action alternatives, would likely assist in maintaining the intended visitor impact ROS settings for the general river corridor, listed in Tables III-1 and III-2, by eliminating the potential for ground disturbance as a result of locating pit toilets or utilizing the cat hole method. Horsepackers and backpackers would continue to be allowed to utilize a cat hole method for disposing of solid human waste per the requirements of Chapter II, but the effects would be of low intensity and magnitude. The short-term continued use of campsite pit toilets (prior to the implementation of the solid human waste carryout system) would continue to have a potential for micro-site disturbance on the vegetation and botanical features of the river corridor.

The active user education program established at the portals for all the action alternatives would provide a means of educating users on river etiquette to assist in complying with management requirements and maintaining the intended visitor impacts ROS setting for the general corridor listed in Table III-1 and III-2.

Reduced party sizes in Alternatives C, D, E, F, and G would assist in reducing potential onshore impacts to the ecosystems of the river corridor.

The ban on burning of live or dead vegetation and the chainsaw closure would assist in maintaining the intended visitor impact ROS setting listed in Tables III-1 and III-2.

The management direction common to all action alternatives confining camping to designated dispersed and developed campsites would further assist in maintaining the intended visitor impacts ROS setting by eliminating the potential for adverse impacts to yet unimpacted sites.

Appendix J proposes monitoring of dispersed campsites to establish baseline information to evaluate over the long term the effect of onshore recreation use on the vegetation and botanical resources of the corridor. The monitoring would evaluate the effectiveness of the user education program and compliance with management requirements.

CUMULATIVE EFFECTS

Alternative A would not provide an active education program, so opportunities to achieve the goals and objectives of the Forest Plan for management of noxious weeds would be further diminished at the end of the planning decade.

The cumulative effect of any one alternative on PETS plants would be relative to the recreational use levels proposed. Alternatives with high

and/or unlimited recreational use levels (Alternatives A and B, and Alternatives D and F in the scenic section) would continue to have the potential to adversely effect the PETS plants through out the remainder of the planning decade. Alternatives with moderate or low recreational use levels (Alternatives C, E and G, and D and F in the wild section) would have a proportionately lower potential for adverse effects on PETS plants due to lower and more controlled use.

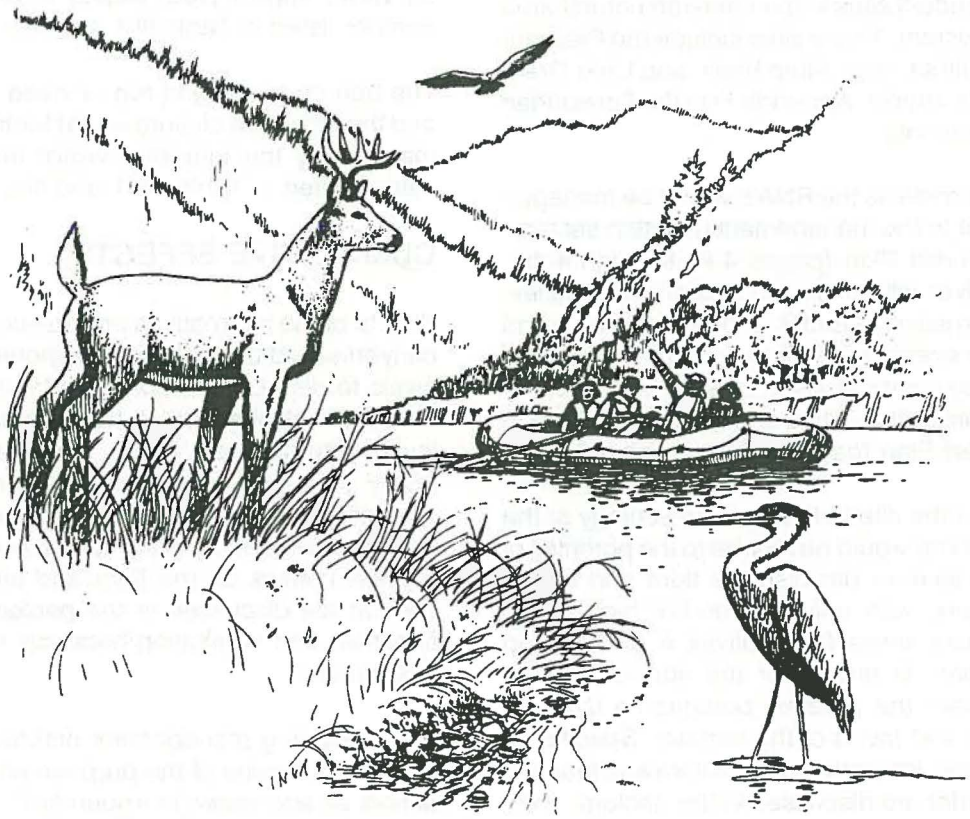
Alternatives which propose non-motorized use in the wild section (Alternatives D, E and F) have the potential to increase backpacker and horsepacker use on paralleling trail systems. This increase in use could have the potential to directly impact PETS species.

Projected increases in recreationists at Pittsburg Landing may result in increased impacts to known MacFarlane's four-o'clock populations. Mitigation measures outlined in the recovery plan and incorporated in this document, as well as increased visitor education, would be initiated to reduce effects.

The continuation of eroding beaches, resulting from clearwater flows, could continue to force recreationist upslope for adequate camping sites.

The cumulative effects of the active education program, reduced party sizes, ban on vegetation burning, solid human waste carryout system, and restricting camping to designated sites would have long-term beneficial attributes in allowing the natural ecosystem to operate freely in the wild section and dominate in the scenic section.

These long-term beneficial effects, when combined with the other ongoing environmental analyses, such as the prescribed natural fire environmental analysis, all lead toward moving the river corridor and the NRA to a more balanced functioning ecosystem with the assurance of maintaining and protecting the ORV.



ENVIRONMENTAL CONSEQUENCES ON THE ECOLOGICAL OUTSTANDINGLY REMARKABLE VALUE

Although the potential environmental consequences of the proposed action and its alternatives on the ecological ORV were not identified as a significant issue, the environmental consequences are presented here to ensure the full disclosure of potential environmental effects and the protection and enhancement of the ORV.

The river corridor defines the analysis boundary for the direct and indirect effects, while the canyon defines the analysis boundary for cumulative effects.

DIRECT AND INDIRECT EFFECTS

In all alternatives Snake River plant communities would continue to receive protection and a special interest designation through the inclusion of certain sites in the research natural area (RNA) system. These sites include the Pleasant Valley, Bill's Creek, Alum Beds, and Little Granite RNA's listed in Appendix H of the Forest Plan FEIS appendix.

In all alternatives the RNA's would be managed pursuant to the management direction set forth in the Forest Plan (pages 4-83 through 4-85). Alternatives with unlimited and/or high use levels (Alternatives A and B, and Alternatives D and F for the scenic section) may require restricting or closing camping within these RNA's if the use is not compatible with the objectives set forth in the Forest Plan (pages 4-83 through 4-85).

Effects of the alternatives on the ecology of the river corridor would be relative to the potential of the use level to diminish the flora and fauna. Alternatives with unlimited and/or high recreational use levels (Alternatives A and B, and Alternatives D and F for the scenic section) would have the greatest potential to diminish the flora and fauna of the corridor. Specific effects of the alternatives on the flora and fauna of the corridor are discussed in the geology, wildlife, fisheries, and vegetation/botanical sections of this chapter.

The solid human waste carryout requirement at all dispersed campsites, for all action alternatives, would likely assist in maintaining the intended visitor impact ROS settings for the general river corridor, listed in Tables III-1 and III-2, by eliminating the potential for ground disturbance as a result of locating pit toilets or utilizing the "cat holes" method. Horsepackers and backpackers would continue to be allowed to utilize a "cat hole" method for disposing of solid human waste per the requirements of Chapter II, but the effects would be of low intensity and magnitude. The short-term continued use of campsite pit toilets (prior to implementation of the solid human waste carryout system) would continue to have the potential for microsite disturbance on ecosystem function.

The active user education program established at the portals for all the action alternatives would provide a means of educating users on river etiquette to assist in complying with management requirements and maintaining the intended visitor impact ROS setting for the general corridor listed in Table III-1 and III-2.

The ban on burning of live or dead vegetation and the chainsaw closure would further assist in maintaining the intended visitor impact ROS setting listed in Tables III-1 and III-2.

CUMULATIVE EFFECTS

Effects of the alternatives on the ecology of the canyon would be relative to the potential of use levels to diminish the flora and fauna. Alternatives with unlimited and/or high recreational use levels (Alternatives A and B, and Alternatives D and F for the scenic section) would have the greatest potential to diminish the flora and fauna of the corridor. Specific cumulative effects of the alternatives on the flora and fauna of the canyon are discussed in the geology, wildlife, fisheries, and vegetation/botanical sections of this chapter.

Other ongoing management activities that are outside the scope of the purpose and need for action, as addressed in Appendix D, are under-

going separate environmental analyses to determine compatibility with the NRA's management objectives. These other management actions undergoing environmental analysis are expected to have a beneficial long-term effect on the functioning ecosystem of the river corridor and the HCNRA as a whole. As an example, the prescribed natural fire environmental analysis would allow natural fire to function in its natural role, within the corridor and overall canyon, which would serve to assure the continued protection and maintenance of the ecological ORV.

The CMP adjustment strategy will review these ongoing activities and potential issues in the context of changes that may need to occur in the management objectives of the CMP. It is anticipated that ecosystem sustainability and function would be a significant consideration of that effort.

ENVIRONMENTAL CONSEQUENCES ON THE SOCIO-ECONOMIC RESOURCES

This section displays the effects on the socio-economic factors identified as one of the significant issues in Chapter I. The alternatives may affect communities in the impact area by changing the mix and intensity of recreation opportunities in the river corridor. As recreation use changes, related expenditures in local communities in the impact area may change. A key effect of the alternatives would be to change the degree of permitted access to the different segments of the river for different types of rivercraft. Potentially affected sectors include: (1) commercial powerboat and floatboat permittees; (2) private powerboat and floatboat operators; (3) businesses which supply goods and services to the commercial operators; and (4) businesses which supply goods and services to river recreationists. Also potentially affected are non-recreation related businesses which depend on river access and transportation as part of their normal operations.

The economic effects of the alternatives are measured in the following manner:

- Total commercial permittee revenue;
- Total associated expenditures by recreationists;
- The number and type of recreational users displaced; and,
- Cost of alternative implementation.

The analysis area (impact area) consists of those counties in Idaho, Washington, and Oregon adjacent to the river corridor and affected economically by river recreation use (see chapter III for a discussion of the defined analysis area).

Methodology and Assumptions. The economic analysis focuses on economic impacts from alternative implementation and not alternative effects on the economic "value" of the recreation experience per se. Economic value in this context refers to the monetary trade-offs a person would be willing to make in order to obtain a particular type of recreation experience. One measure of these trade-offs is individual or household willingness-to-pay for a given recreation experience (see Johansson 1987; Hoehn and Krieger 1988; and Walsh 1986 for conceptual background and empirical examples).

As a particular recreation experience is enhanced or degraded (depending on the perceptions of the recreationist) for a given type of activity, the economic value of the activity as measured by willingness-to-pay may be affected. For example, alternatives which reduce congestion and noise may result in an overall or net increase in economic value, assuming the reduced conflict is perceived by users. Area-specific information is not available to estimate the effects of the alternatives on economic value, per se. Nevertheless, these non-market derived values may be substantial.

The economic impacts of boat use in the river corridor has essentially two components: (1) the economic impact of permittee business expenditures, and (2) the economic impact of recreationist expenditures.

Permittee business expenditures are primarily capital and operating expenses associated with powerboats and rafts and other expenses such as rent, utilities, taxes, permit fees and licenses, (i.e., Forest Service), liability insurance, food,

recreation equipment (some operators provide fishing tackle), and labor costs. The 19 commercial powerboat permittees employed 58 people during 1991 (Northwest Powerboat Association (NPA) 1993). The 17 commercial float operators employ river guides and others who assist in running the commercial float trips.

A number of welded aluminum powerboat (jetboat) manufacturers and retail sales operations are located in the analysis area in the Lewiston-Clarkston area. Boise, Idaho has two commercial jetboat manufacturers. The 13 firms in the Lewiston-Clarkston area accounted for employment of 108 people in 1992 (Northwest Powerboat Association 1993). Eighty percent of total yearly boat sales are for use out of region (not for use on the Snake River). Yearly sales range from between 600 and 800 boats for a gross sales revenue of between $14 and $15 million. Specialized suppliers to the manufacturers include aluminum sheet production and forming, engine construction, jet pump unit manufacturing and specialized trailer construction and sales. Key supply sources include Seattle, Portland, Spokane and the Lewiston-Clarkston area.

The two jetboat manufacturers in Boise produce between 50 and 75 jetboats a year with gross sales about $2.5 million. About 95 percent of boats sold are used, at least a portion of the time, on some part of the Snake River, including both the wild and scenic corridor and segments of the river outside the Wild and Scenic portions of the river. The two manufacturers employ between 12 and 20 people annually.

Rafting manufacturers and wholesale suppliers are located in Boise and Moscow in Idaho. The analysis area contains a number of retail firms which provide goods and services to both commercial and private floatboaters. Alternatives which enhance the recreation experience in the river corridor for floatboaters may potentially increase the demand for float recreation on the river corridor with corresponding impacts on firms which provide float-oriented goods and services. Conversely, alternatives which result in a less desirable recreation experience from the floaters perspective may decrease the demand for float recreation on the river with corresponding effects on related businesses.

Changes in operator sales revenue because of changes in boat launching opportunities are a measure of the direct economic impacts of the alternatives. In turn, expenditures by the permittees affect sales and employment in supplying businesses. These impacts are known as indirect economic impacts. People employed by businesses affected by permittee expenditures may experience related changes in personal income which may affect their expenditures on goods and services. These effects are know as induced economic impacts. The direct, indirect, and induced effects together measure total economic impacts (Miller and Blair 1985).

Direct economic effects have been estimated using 1991 operator revenue data. Area-specific information is not available for estimating the indirect and induced economic effects. However, regional and state estimates are available using final demand output multipliers for recreation-related goods and services. In general, estimates of such multipliers typically range from 1.5 to 2.5, with 2.0 as an average (Walsh 1986). This means that for each dollar change in final demand for a given industry or sector, total economic impact is two dollars; one dollar in direct impacts and one dollar in indirect and induced effects. Final demand output multipliers for Oregon and Idaho for recreation-related sectors (such as retail trade, lodging, food, amusement) range from 1.7 to 2.1 (U.S. Department of Commerce 1992). If final demand output multipliers for commercial outfitters operating on the wild and scenic portions of the Snake River are similar to the recreation-related sectors noted above, then between $0.70 to $1.10 in indirect and induced economic activity for the region as a whole is generated for each $1 change in final demand for commercial outfitter services.

Recreation expenditures (money spent by people in the course of engaging in a given recreation activity, and in traveling to and from the activity location, usually on a per trip or per person per day basis) typically fall into several categories: accommodations, camping fees, eating out, groceries, vehicle costs (usually referring to costs incurred in traveling to and from the recreation location), recreation (costs directly attributable to engaging in the recreation activity), shopping, and other (Dean Runyan As-

sociates 1991). Expenditure categories for various types of recreation activities in specific locations have been developed (see for example Johnson and Moore 1993 and Economic Strategies Northwest 1992).

Information on per trip or per person recreation-related expenditures in the Hells Canyon river corridor is not available. However, a general estimate of the potential economic impacts of recreation expenditures may be obtained by considering total expenditures associated with the total number of recreationists engaging in a given activity. For example, the total number of passengers for commercial powerboat permittees for the primary season in 1991 was 14,353. Using a per day per person expenditure estimate of $40 (based on Dean Runyan Associates 1991, Harris et al. 1988 and Shelby et al. 1990), and also assuming getting to the river requires one day of travel, total associated recreation expenditures would be $1,764,800 (exclusive of the direct costs of the commercial boat trip, which is reflected in permittee revenues discussed above).

Three problems exist with respect to the use of "associated expenditures" (Johnson and Moore 1993). First, the above figure does not reflect where the money was actually spent--in the analysis area or outside the analysis area. Second, the figure does not reflect how much of the total consists of multi-destination trip expenditures and the amount actually spent in the analysis area. Third, the above total reflects only direct changes in sales expenditures, not indirect or induced economic impacts. Information is available on a regional and state-wide basis to estimate indirect and induced economic impacts of recreation expenditures.

Despite these problems, estimated recreation expenditures give a reasonable indication of the potential economic impacts of changes in recreational use of the river corridor. The estimates of recreation expenditures associated with each alternative are conservative (high) estimates. The estimates were developed under the assumption that all expenditures associated with a given type of recreation take place within the analysis area; e.g., a family of four from Boise traveling to Hells Canyon Dam for a private powerboat trip makes all trip-related expenditures in the analysis area. It is also assumed that, on average, one day of travel is required to get to the Snake River. Given these assumptions, the economic impacts identified in this section give estimates of not only the direct economic effects but also a considerable portion of the potential indirect and induced economic effects as well. The concept of associated recreation expenditures will be used throughout this section as an economic impact indicator.

To make the estimation of the economic impacts tractable, two scenarios concerning possible user responses to alternative allocation levels are used in the direct and indirect effects analysis.

The first scenario is if an alternative results in a decrease from current use levels in a given river segment, only a certain portion of displaced recreationists would be willing and able to either use a different section of the river or to recreate on the river during a period when restrictions would not be in effect. This reflects the possibility that affected permittees may not be financially able to run part or all of their operations out of a different river segment, or would rather quit entirely rather than run a different portion of the river or change operations to the secondary season. The same argument holds for private users. Users displaced from the wild section of the river may not want or be able to relocate to a different section of the river. This scenario is referred to as the no flexibility (no flex) scenario.

The second scenario assumes if an alternative results in a decrease from current use levels in a given segment, a greater portion of recreationists than in the no flex scenario would be able to use either a different portion of the river or a different time period or both. This scenario is referred to as the maximum flexibility (max flex) scenario.

In actuality, some permittees and recreationists may be able to adjust their operations if necessary and some permittees and recreationists may choose not to. The use of the two scenarios allows the estimation of a reasonable range of potential impacts.

ECONOMIC IMPACTS OF THE ALTERNATIVES

This section addresses the economic impacts of each alternative by major river use: commercial powerboats, private powerboats, commercial float use, private float use, and non-recreational river use (livestock ranches and inholdings). Direct and indirect effects of alternative implementation are based on a comparison with 1991 river use levels. Cumulative effects are based on alternative impacts from 1995 to 2004 taking into consideration projected levels of powerboat and floatboat use.

It should be noted that the dollar values discussed in this section are only estimates of the **comparative** impacts of the alternatives and are not necessarily precise estimates of actual impacts which may occur with the implementation of a given alternative. The intent of this section is to allow a comparison of the alternatives with respect to potential economic impacts from alternative implementation.

All of the economic impacts are based on the use levels from the 1991 primary use season.

COMMERCIAL POWERBOAT USE: DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

Alternative A would result in the continuation of current management direction. In 1991, there were 945 total commercial boats on the river during the primary season. Commercial powerboat permittee revenue during the primary season totaled $1,039,926. Passengers totaled 14,353 with associated recreation expenditures of $1,764,800.

Lewiston-Clarkston Outfitters. During the 1991 primary season, commercial powerboat use totaled 684 boats with passengers totaling 9,485. Associated recreation expenditures totaled $1,176,280.

Riggins Outfitters. During the 1991 primary season, the four Riggins outfitters totaled 44 commercial boats. Permittee revenue totaled $33,880 based on a passenger level of 273. Associated recreation expenditures were $37,120.

Dam Outfitters. Commercial powerboat trips totaled 217 boats during the 1991 primary season. Permittee revenue totaled $146,258 based on 4,595 passengers. Associated expenditures were $551,400.

ALTERNATIVE B

Commercial powerboat use would be allowed to increase to 12 boats per day in the wild section of the river under Alternative B. In the scenic section no limits would be placed on daily use. Since current use in the wild section is under 12 boats per day, Alternative B effects would be the same as Alternative A.

ALTERNATIVE C

Alternative C limits commercial boat use to four boats per day in the wild section and five boats per day in the scenic section during the primary season. This represents a 50% decrease in allowable boat levels in the wild river and a 29% decrease in boat use levels in the scenic section compared with the 1991 primary season.

No Flex

Commercial boat numbers would decrease by 46% to 509 in comparison with the 1991 primary season. Permittee revenue would be $563,604 for the primary season. Passengers would total 7,681 with associated recreation expenditures of $939,800.

Lewiston-Clarkston Outfitters. Total launches would be 374 in this scenario, which would be a 45% decrease from 1991 primary season use levels. Total available launches would be 486. However, given the 50% reduction in boats going into the wild section of the river, and assuming displaced boats formerly going into the wild section would be eliminated because of lack of consumer demand, there would be 108 boats with scenic section destinations and 266 boats with destinations in the wild river. Permittee revenue would be $470,118 based on a passenger total of 5,236. Associated recreation expenditures would be $643,280.

Riggins Outfitters. Total available launches would be 31 under this scenario. Using the same assumptions as for the Lewiston-Clarkston outfitters, total launches out of Pittsburg would be 26 which is a 41% reduction from 1991 primary season use levels. Permittee revenue would be $20,020 based on total passengers of 156. Associated recreation expenditures would be $21,840.

Dam Outfitters. Dam launches would be reduced by 50%, from 217 to 109 based on the 1991 primary season. Permittee revenue would be $73,466 based on passenger totals of 2,289. Associated recreation expenditures would be $274,680.

Max Flex

This scenario assumes displaced launches from the wild section would relocate to the scenic section up to a level which would result in the combined boat total of scenic and wild section trips equaling the total number of allowable launches. Under this scenario, commercial boat numbers would total 626, a decrease of 34% from 1991 primary season use levels. Permittee revenue would total $708,238 based on a passenger total of 9,279. Associated recreation expenditures would be $1,144,080.

Lewiston-Clarkston Outfitters. Commercial powerboat trips would number 486 which is a 29% decrease from Alternative A. Permittee revenues would be $610,902. Passengers would total 6,804 with associated expenditures of $835,920.

Riggins Outfitters. Commercial boat trips would decrease by 30% under this scenario compared with Alternative A. Commercial powerboat trips would number 31. Permittee revenues would be $23,870 based on a passenger total of 186. Associated recreation expenditures would be $33,480.

Dam Outfitters. Commercial powerboat trips would be the same as under the no flex scenario.

ALTERNATIVE D

Alternative D would eliminate commercial powerboat use from the Hells Canyon Dam to the Kirkwood Historic Ranch. An allocation of six boats per day from the Kirkwood Historic Ranch to Pittsburg would be implemented. An allocation of eight boats per day in the scenic section of the river would be implemented when monitoring indicates this use level has been exceeded for two consecutive years. For analysis purposes, it is assumed that in the no flex scenario, 50% of displaced commercial powerboats formerly going into the wild section would have scenic section destinations and the remaining 50% would be eliminated. Under the max flex scenario, it is assumed that 75% of displaced commercial powerboats which formally had wild section destinations would subsequently have scenic section destinations with the remaining 25% eliminated. The permittee at the Dam would have the option of moving their commercial operation to Pittsburg Landing, Dug Bar, or the Lewiston-Clarkston area. It is assumed the 50 and 75% figures discussed above for the two scenarios are also applicable to the commercial powerboat launches out of Hells Canyon Dam.

No Flex

Commercial powerboats would total 559 which is a decrease of 41% from Alternative A. Permittee revenues would total $623,532. Passengers would total 8,333 with associated recreation expenditures of $1,020,520.

Lewiston-Clarkston Outfitters. Compared with 1991 use levels, this scenario would reduce commercial boat trips by 39% for outfitters based in the Lewiston-Clarkston area. Commercial boat trips would total 418 with permittee revenue of $525,426. Passengers would number 5,852 with associated recreation expenditures of $718,960.

Riggins Outfitters. Commercial powerboat trips launching from Pittsburg would decrease by 27% compared with 1991 primary season use levels. Boats would total 32 with permittee revenues of $24,640. Passengers would total 192 with associated recreation expenditures of $26,880.

Dam Outfitters. All commercial powerboat launches from the Hells Canyon Creek launch site would be eliminated under this alternative. The commercial operator would be allowed to relocate to either Pittsburg Landing, Dug Bar, or the Lewiston-Clarkston area. Under the no flex scenario, it is assumed 50% of total launches would relocate to a launch site down river and 50% of the launches would be eliminated because of lack of consumer demand for boat trips limited to the scenic section. For analysis purposes, it is assumed the relocated launches would be out of the Lewiston-Clarkston area. If such is the case, then the following boat numbers, revenues and expenditures would be added to the Lewiston-Clarkston outfitter totals discussed previously. If the launches relocate to Pittsburg Landing, the totals for the Riggins outfitters would increase accordingly.

Under the no flex scenario, dam launches would decrease by 50% and remaining launches would relocate down river. Total relocated commercial launches would total 109 boats with permittee revenue of $73,466. Passengers would total 2,289 with associated recreation expenditures of $274,680. Recreation expenditures from commercial powerboat passengers would be eliminated for areas along the travel corridors to the Dam. Recreation expenditures totaled $551,400 during the 1991 primary season.

Max Flex

Commercial launches would decrease by 20% compared with 1991 primary season use levels. Commercial boats would total 752 with permittee revenue of $831,729. Passengers would total 11,365 with associated recreation expenditures of $1,390,400.

Lewiston-Clarkston Outfitters. Total commercial powerboats under this scenario would total 551. This is a 19% reduction compared with 1991 primary season use levels. Permittee revenue would total $692,607. Passengers would total 7714 with associated recreation expenditures of $947,720.

Riggins Outfitters. Riggins outfitters would experience a 14% decrease in commercial powerboat trips compared with 1991 primary season use levels. Commercial boat trips would total 38. Permittee revenue would be $29,260. Passengers would total 228 with associated recreation expenditures of $31,920.

Dam Outfitters. Under this scenario, it is assumed that 75% of the commercial powerboat trips out of the Hells Canyon Creek Launch site will relocate down river. Under this assumption, total relocated boats would number 163 which represents a 25% decrease from 1991 primary season use levels. Permittee revenue would total $109,862. Passengers would total 3,423 with permittee revenue of $410,760. As with the no flex scenario, recreation expenditures from commercial powerboating passengers would be eliminated for areas along the travel corridors to Hells Canyon Dam.

ALTERNATIVE E

This alternative would implement the alternating weeks of exclusive use strategy for commercial powerboat use. During the week for exclusive motorized use, there would be an allocation of six day and six overnight trips in the wild section of the river. An allocation of eight boats would be in place for the scenic section. During the week of exclusive non-motorized use, no commercial powerboats would be allowed from the Hells Canyon Dam to Kirkwood Ranch section; six boats would be allowed in the Kirkwood Ranch to Pittsburg section; and eight boats would be permitted in the scenic section.

For the no flex scenario, the analysis assumes 50% of the displaced boats in the wild section will relocate to the scenic section and 50% will be eliminated. The max flex scenario assumes 75% of the displaced wild section boats would have scenic destinations and 25% would be eliminated.

Depending on how outfitters respond, the alternating weeks of motorized and non-motorized use would potentially affect the ability of commercial outfitters to hire river guides and other employees. From a labor perspective, there may be a decrease in demand for primary season jobs with commercial outfitters who may offer employment only on alternating weeks. If such is the case, operators may have to increase wages and other benefits to attract em-

ployees, which in turn may result in increased trip costs for passengers.

No Flex

Commercial powerboats would total 729 for the primary season. This represents a 23% decrease from 1991 primary season use levels. Permittee revenue would total $816,227. Passengers would number 10,882 with associated recreation expenditures of $1,332,440.

Lewiston-Clarkston Outfitters. Boats during the primary season would total 551, a 19% decrease from 1991 use levels. Permittee revenue would total $692,607. Passengers would total 7,714 with associated recreation expenditures of $947,720.

Riggins Outfitters. Commercial powerboat totals would decrease by 14% compared with 1991 primary season levels. Commercial powerboat trips would number 38 with permittee revenues totaling $29,260. Passengers would number 228 with associated recreation expenditures of $31,920.

Dam Outfitters. Under this scenario, commercial powerboat launches would decrease by 35% with boats totaling 140 during the primary season. Permittee revenue would total $94,360. Passengers would total 2,940 with associated recreation expenditures of $352,800.

Max Flex

There would be a 14% decrease in commercial powerboat trips. Commercial powerboats would total 815 during the primary season. Permittee revenue would total $913,540. Passengers would total 12,174 with associated recreation expenditures of $1,490,520.

Lewiston-Clarkston Outfitters. Commercial powerboat numbers would decrease by 10% under this scenario. Commercial boats would total 618 with passengers totaling 8,652. Permittee revenues would come to $776,826. Associated recreation expenditures would be $1,062,960.

Riggins Outfitters. Under this scenario, commercial powerboats would total 41. Permittee revenues would total $31,570. Passengers would total 246 with associated recreation expenditures of $34,440.

Dam Outfitters. Under this scenario, commercial powerboats would total 156, a 28% decrease from Alternative A. Boats would number 156. Permittee revenue would total $105,144 based on 3,276 passengers. Associated recreation expenditures would be $393,120.

ALTERNATIVE F

Commercial powerboat use would be prohibited in the wild section of the river for the entire year. An allocation of nine boats per day would be implemented in the scenic section during the primary season when monitoring indicates use has exceeded this level for two consecutive years. There would be no limitations on use during the secondary season in the scenic section of the river. While this analysis focuses on the primary season, the year-round prohibition on commercial powerboat use in the wild section of the river would affect use in the secondary season. In 1991 there were 409 commercial powerboats using the river corridor during the secondary season. This represents 30% of annual commercial powerboat use in the river corridor. Passengers totaled 5,890 during the secondary season with associated recreation expenditures of $373,989. Commercial powerboat permittee revenues totaled $494,890.

This alternative is similar to Alternative D with the exception that scenic section launches would no longer be able to run to the Kirkwood Historic Ranch. As with Alternative D, the no flex scenario assumes 50% of displaced boats which formerly had wild section destinations would relocate to the scenic section and 50% would be eliminated. Under the max flex scenario, it is assumed 62.5% of the displaced boats would relocate to the scenic section and 37.5% would be eliminated. This is to reflect the possibility that the elimination of motorized access to the Kirkwood Historic Ranch would cause some boaters to completely forego boating in the river corridor.

No Flex

This scenario would decrease boat use by 41% compared with 1991 primary season use levels. Total boats would number 559. Permittee revenue would be $623,532. Passengers would number 8,333 with associated recreation expenditures of $1,020,520.

Lewiston-Clarkston Outfitters. Under this scenario, commercial powerboats would decrease by 39% with boats totaling 418. Permittee revenue would total $525,426. Passengers would total 5,852 with associated expenditures of $718,960.

Riggins Outfitters. Commercial powerboats would number 32 under this scenario which is a 27% decrease from 1991 primary season use levels. Permittee revenue would total $24,640. Passengers would total 192 with associated recreation expenditures of $26,880.

Dam Outfitters. In this alternative, the permittee launching from the Dam would have the option of moving their commercial business to the Lewiston-Clarkston area, Dug Bar, or Pittsburg Landing. Assuming 50% of 1991 use levels would relocate downstream, 109 boat trips would occur with passengers totaling 2,289. Permittee revenue would be $73,466 with associated recreation expenditures of $274,680. Like Alternative D, recreation expenditures by commercial powerboat passengers from Hells Canyon Dam would be eliminated for areas within the travel corridors leading to the Dam. During the 1991 primary season, these recreation expenditures totaled $551,400.

Max Flex

Under this scenario, commercial powerboat use would decrease by 31% compared with Alternative A. Commercial boats would total 655 and permittee revenue would total $727,002. There would be 9,842 passengers with associated recreation expenditures of $1,204,600.

Lewiston-Clarkston Outfitters. Commercial powerboats would decrease by 29% from Alternative A. Commercial boats would total 484 with permittee revenues of $608,388. Passengers would total 6,776 with associated recreation expenditures of $832,480.

Riggins Outfitters. Commercial powerboats would decrease by 20% compared with Alternative A. Boats would number 35 with permittee revenues of 26,950. Passengers would number 210 with associated recreation expenditures of $29,400.

Dam Outfitters. In this alternative, the permittee launching from the Dam would have the option of moving their commercial business to the Lewiston-Clarkston area, Dug Bar, or Pittsburg Landing. Assuming 62.5% of 1991 use levels would relocate downstream, 136 boat trips would occur with passengers totaling 2,856. Permittee revenue would be $91,664 with associated recreation expenditures of $342,720. Similar to the no flex scenario, recreation expenditures of $551,400 would be lost to areas along travel corridors to Hells Canyon Dam.

ALTERNATIVE G - PREFERRED

Commercial powerboat use would be distributed among permittees by an allocation system similar in scope to that used by commercial float permittees (see Appendix G). Alternative G would implement a three-day (Monday through Wednesday) non-motorized period from the top of Wild Sheep Rapid to the upper landing at Kirkwood Historic Ranch. The period would be operative from the second Monday of July through the Wednesday before Labor Day.

Based on the 1991 primary season, commercial permittee guaranteed launches total 846, with an additional 114 launches available from the pool. Consequently, there is a total of 960 commercial powerboat launches available during the primary season. Commercial powerboats totaled 945 during the 1991 primary season. This alternative would limit the number of commercial trips launching from Cache Creek and Pittsburg Landing which could go beyond Kirkwood Historic Ranch. The number of commercial powerboat trips originating from the Hells Canyon Creek launch with a destination to the Kirkwood Historic Ranch would also be limited compared to 1991 use levels.

No Flex

Under this scenario, it is assumed that 50% of commercial powerboat trips which formerly had access to the wild section but are restricted to going no further than the Kirkwood Historic Ranch in this alternative would be eliminated. This reflects the possibility that restricting access to the wild river would affect consumer demand for commercial powerboat trips. It is also assumed that pool launches would be used primarily by the Lewiston-Clarkston outfitters. These outfitters would be more affected than Riggins or Dam outfitters with respect to allocated launch opportunities. Under this scenario, 824 commercial boats would use the river corridor during the primary season. This represents a 13% decrease from Alternative A. Permittee revenue would total $898,906. Passengers would total 12,570 with associated expenditures of $1,536,960.

Lewiston-Clarkston Outfitters. Commercial powerboat outfitters based in the Lewiston-Clarkston area would experience a 15% decrease in total boats under this scenario. During the 1991 primary season, commercial powerboats totaled 684 from Lewiston-Clarkston outfitters. Allocated launches plus pool dates (it is assumed all pool dates will be used by Lewiston-Clarkston outfitters for trips into the wild section of the river) total 619. Commercial powerboat trips would total 582 under this scenario. Permittee revenue would total $731,574. Passengers would total 8,148 with associated recreation expenditures of $1,001,040.

Riggins Outfitters. The commercial powerboat allocation plan would designate 119 launches for the four Riggins outfitters launching from Pittsburg Landing. In 1991 these outfitters had a total of 44 boats launched, with 24 having a destination in the wild river. Of the 119 allocated boat trips, 78 would be able to go upriver as far as the Kirkwood Historic Ranch while 41 would be able to go beyond Kirkwood Historic Ranch in the wild section of the river. Assuming excess guaranteed launches (the number of guaranteed launches above 1991 use levels) are redistributed to outfitters dependent on the pool (or who need additional launches to match 1991 boat levels), Alternative G would not restrict the number of launch opportunities of outfitters launching from Pittsburg compared with 1991 primary season use levels. Commercial boat numbers would total 44. Permittee revenue would be $33,880. Passengers would total 264 with associated expenditures of $36,960.

Dam Outfitters. The commercial powerboat outfitter at the Dam had 217 boat trips during the 1991 primary season. Alternative G would allocate 222 launches from the Dam based on the 1991 primary season with 135 trips allocated to Wild Sheep and 87 to Kirkwood. In 1991 58% of the commercial launches from the Dam had the Kirkwood Historic Ranch as a destination. This amounted to 126 boats. Forty-two percent of commercial boat trips had destinations above Wild Sheep. Assuming half of the displaced boats going to the Kirkwood Historic Ranch would be eliminated, with the other half included in the Dam launches going to Wild Sheep or Pittsburg Landing launches, this scenario would result in a decrease of commercial boat launches of 9%. Operator revenue would be $133,452. Passengers would total 4,158 with associated expenditures of $498,960.

Max Flex

Under this scenario, it is assumed that displaced boats with wild section destinations would become part of the scenic section launches up to the maximum level of allocated scenic launches specified under this alternative. Under this scenario, commercial powerboat launches would total 870, which is an 8% decrease from 1991 primary season use levels. Permittee revenue would total $951,481. Total passengers would be 13,277 with associated expenditures of $1,623,280.

Lewiston-Clarkston Outfitters. Commercial powerboat launches would total 619, which is a decrease of 10% from 1991 primary season use levels. Permittee revenue would total $778,083 based on a passenger total of 8,666. Associated recreation expenditures would total $1,064,680.

Riggins Outfitters. Commercial powerboat use would be the same as under the no flex scenario.

Dam Outfitters. Under this scenario, it is assumed that 25% of the displaced boats formally going to Kirkwood Historic Ranch or Pittsburg Landing would be eliminated with the rest of the launches included in the launches with Wild Sheep as a destination. Boats would total 207, a 5% decrease from 1991 primary season totals. Permittee revenue would total $139,518. Passengers would total 4,347 with associated expenditures of $521,640. Commercial powerboat use would be the same as under the no flex scenario.

COMMERCIAL POWERBOAT USE: CUMULATIVE EFFECTS

ALTERNATIVE A

Commercial powerboat use (total boats primary season) increased 69% from 1982 to 1992. The average yearly increase was 6.1%. Figure IV-1 shows projected commercial powerboat use to the year 2004. Projected use is based on a linear extrapolation of commercial boat levels during the years 1982 to 1991. Actual boat levels will be affected by a variety of factors, including consumer preferences and disposable income levels, outfitter marketing ability, weather, and water flow levels. In comparing the trend line with the years 1982-1991, the projected trend line provides a fairly reasonable estimate of commercial boat use during these years, and consequently, of projected use to the year 2004.

Alternative A continues current management direction. Assuming current and past trends hold, commercial powerboat use would increase from 1991 use levels of 945 total boats during the primary season to 1,251 total boats in the year 2004. The cumulative total of passengers from 1995 to 2004 would be 171,334 with associated recreation expenditures of $21,056,096. Commercial powerboat permittee revenue would be $13,312,232.

ALTERNATIVE B

Alternative B would allocate 12 boats per day in the wild section with no limits in the scenic section. Assuming uniform increases in use levels for both the wild and scenic sections, this allocation level in the wild section would be reached in 1999. Thereafter, increases in commercial powerboat use would occur in the scenic section only. Assuming displaced use in the wild section would switch to the scenic section, the economic effects of this alternative would be the same as Alternative A.

ALTERNATIVE C

Alternative C places a limit of four commercial powerboats per day in the wild section and five commercial powerboats per day in the scenic section. The cumulative boat use total from 1995 to 2004 would be 5,680 boats under this alternative. This represents a 50% decrease from Alternative A levels. Passengers would total 86,336 with associated recreation expenditures of $10,610,240. Commercial powerboat permittee revenue would total $6,708,080.

ALTERNATIVE D

Alternative D would eliminate commercial powerboat use in the wild river section from Hells Canyon Dam to Kirkwood during the primary season and require the implementation of an allocation system after boat use exceeds six boats per day in the Kirkwood to Pittsburg section and eight boats per day in the scenic section for two consecutive years. Commercial powerboat use would total 6,560 boats for the period 1995 to 2004. This represents a 42% from Alternative A levels. Total passengers would be 99,712 with associated recreation expenditures of $12,254,080. Permittee revenue would total $7,747,360.

ALTERNATIVE E

Alternative E would implement the alternating week of exclusive use strategy. During the week of exclusive motorized use, twelve boats would be allocated to the wild section per day (six day-use only, six overnight). During the week for exclusive non-motorized use, no boats would be allowed from Hells Canyon Dam to the Kirkwood Historic Ranch. For the entire primary season, an allocation of eight boats in the scenic section would be implemented when monitoring indicates this level is exceeded for two consecutive years. Under this allocation, a total of 7,7200 commercial powerboats boats would use the river corridor during the primary season

from 1945-2004, a decrease of 32% from Alternative A levels. Permittee revenue would total $9,117,320. Total passengers would be 117,344 with associated expenditures of $14,420,960.

ALTERNATIVE F

Alternative F would prohibit commercial powerboat operations in the entire wild section of the river and implement an allocation level of nine boats per day in the scenic river when monitoring indicates this use level is exceeded for two consecutive years. In comparison with Alternative D, this alternative would eliminate motorized use to Kirkwood Historic Ranch.

Cumulative use from 1995 to 2004 would be 6,070 total boats with passengers totaling 92,264. This represents a 46% decrease from Alternative A levels. Associated recreation expenditures would be $11,338,760. Permittee revenue would total $7,168,670.

ALTERNATIVE G - PREFERRED

Alternative G would implement a three-day (Monday through Wednesday) non-motorized period from the top of Wild Sheep Rapid to the upper landing at Kirkwood Historic Ranch. The non-motorized period would be operative from the second Monday of July through the Wednesday before Labor Day.

Based on the direct and indirect effects, the cumulative boat total would be 8,210 during the period 1995-2004. This would be a 25% decrease from Alternative A levels. Passengers would total 128,744. Permittee revenue would total $10,003,070 with associated recreation expenditures of $15,821,960.

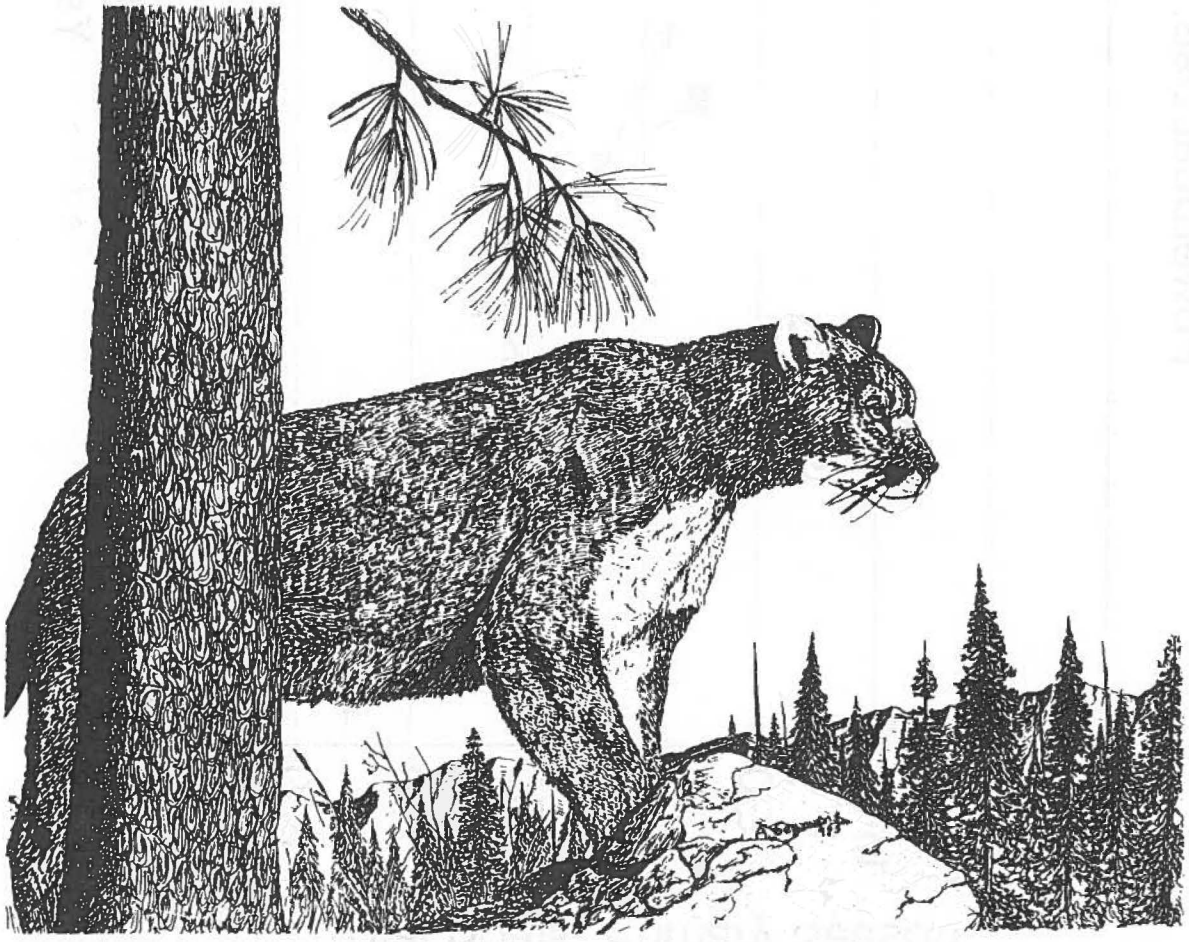
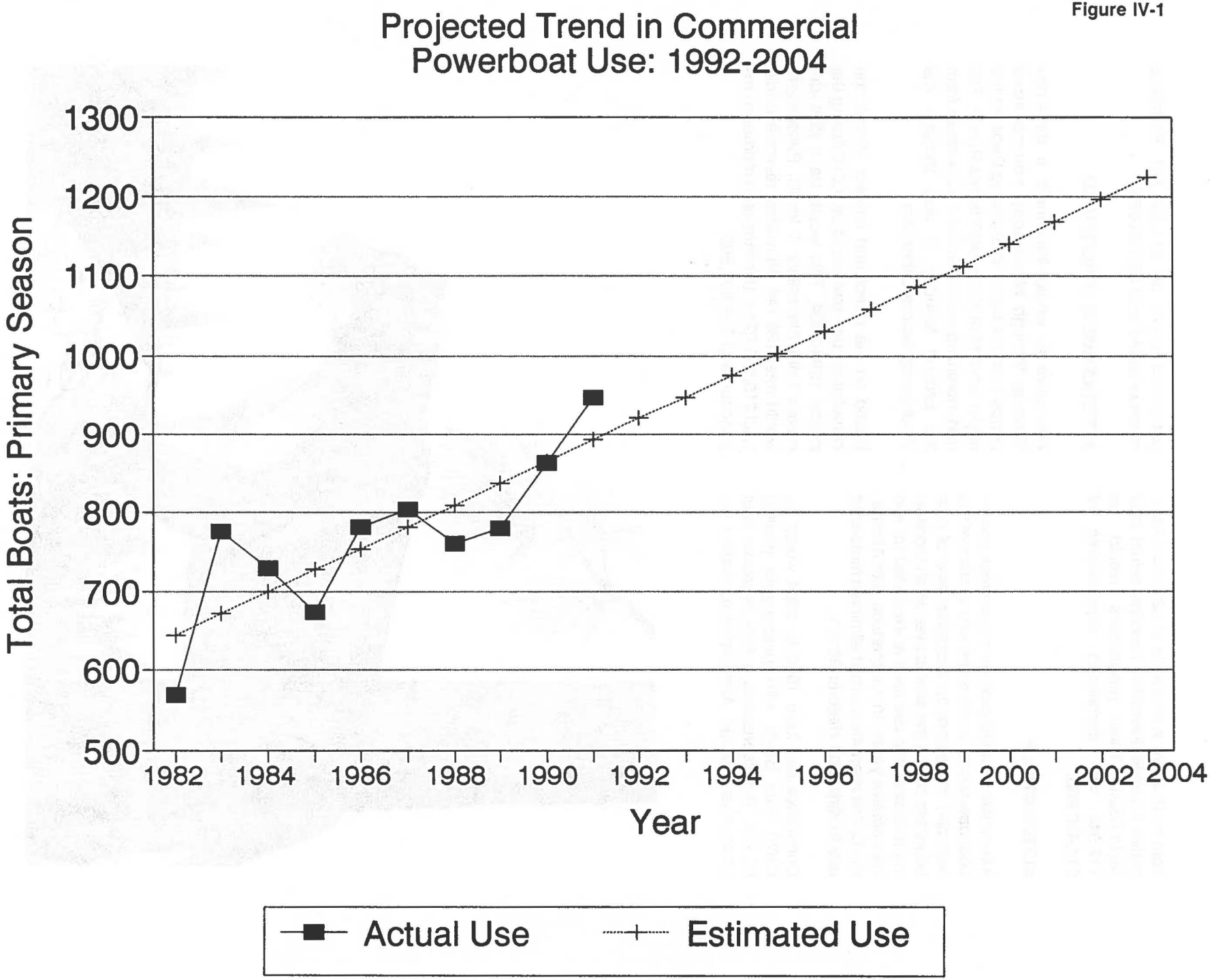


Figure IV-1


Projected Trend in Commercial
Powerboat Use: 1992-2004
Total Boats: Primary Season
1300
1200
1100
1000
900
800
700
600
500
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
Year
Actual Use
Estimated Use

PRIVATE POWERBOAT USE: DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

This alternative represents a continuation of current management direction. In 1991 during the primary season, private powerboats averaged five per day in the wild section of the river and 11 per day in the scenic section. Total boats launched during the primary season was 1,364 with a total of 6,002 passengers. Associated recreation expenditures, exclusive of boating costs, totaled $938,432. Associated direct boating costs totaled $236,422. Boating costs include fuel, oil and maintenance costs associated with river corridor use.

Cache Creek Launches. Private powerboat launches out of the Lewiston-Clarkston area numbered 936 during the 1991 primary season. About 85% of these launches stayed in the scenic river. Passengers totaled 4,843. Associated recreation expenditures totaled $757,315 with boating expenditures of $190,793.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing numbered 200 during the 1991 primary season. Passengers totaled 882 with associated recreation and boating expenditures of $137,950 and $34,754, respectively.

Hells Canyon Creek Launches. Private powerboat launching from Hells Canyon Dam totaled 63 during the 1991 primary season. Passengers totaled 276 with associated recreation and boating expenditures of $43,168 and $10,875, respectively.

ALTERNATIVE B

Alternative B would allow up to 16 launches on Friday and Saturday (eight above Rush Creek, of which four are allowed above Granite Creek) in the wild section of the river and eight boats per day during the weekdays. This averages out to six boats per day for the wild section (this six per day average is used for analysis purposes). The scenic section would have no restrictions. Since this allocation is the same as current use levels, the economic effects for Alternative B are be the same as for Alternative A for both the no flex and max flex scenarios.

ALTERNATIVE C

This alternative places a four boat per day limit in the wild section of the river and a five boat per day limit in the scenic section.

No Flex

This scenario would result in a 53% decrease in private powerboat use compared to 1991 primary season levels. Passengers would total 2,841 with associated recreation expenditures of $444,286 for the primary season. Associated boating expenditures would total $111,930.

Cache Creek Launches. Private powerboat launches out of the Lewiston-Clarkston area would number 495 under this scenario. This is a 55% decrease from 1991 primary season levels. Passengers would number 2,180. Associated recreation expenditures would be $340,827 with boating expenditures of $85,866.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing would number 90 in this scenario, a 55% decrease from 1991 primary season use levels. Passengers would total 397 with associated recreation and boating expenditures of $62,042 and $15,630, respectively.

Hells Canyon Creek Launches. In this scenario, private powerboat launches would total 60, a decrease of 5% from 1991 primary season levels. Passengers would total 265 with associated recreation and boating expenditures of $41,418 and $10,434, respectively.

Max Flex

Since current use levels for both the wild and scenic river sections exceed the use limits in this alternative, displaced use from one part of the river cannot transfer to a different portion of the river. Economic effects in this scenario would be the same as for the no flex scenario above.

ALTERNATIVE D

Alternative D would eliminate private powerboat use in the Hells Canyon Dam to Kirkwood Historic Ranch section. A six boat per day allocation in the section of the river from the Kirkwood Historic Ranch to Pittsburg would be implemented when monitoring indicates this level is exceeded for two consecutive years. An allocation of 13 boats per day would be implemented in the scenic section when monitoring indicates this level of use is exceeded for two consecutive years.

No Flex

Under this scenario, it is assumed that 50% of displaced boats in the wild section would relocate to scenic section launch sites or would continue to use the river within the scenic section. There would be an overall decrease in boat use of 15% for the primary season compared with 1991 use levels. Boat use would total 1161 boats during the primary season. Passengers would total 5,109 for the primary season with associated recreation expenditures of $798,928 and boat expenditures of $201,277.

Cache Creek Launches. Private powerboat launches out of the Lewiston-Clarkston area would number 1018 under this scenario, which represents an 8% decrease compared with the 1991 primary season. Passengers would total 4,480. Associated recreation expenditures would be $700,544 with boating expenditures of $176,490.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing would total 113 in this scenario. Passengers would number 497 with associated recreation and boating expenditures of $77,744 and $19,586, respectively.

Hells Canyon Creek Launches. Private powerboat launching from Hells Canyon Dam would be eliminated under this alternative. This would eliminate 63 launches from the Hells Canyon Creek launch site based on the 1991 primary season. Similar to commercial powerboats under Alternative D for the no flex scenario, it is assumed that 50% of total launches would relocate to a launch site downriver and 50% of the launches would be eliminated. Under this scenario, 30 launches would relocate downriver. Passengers would total 132 with associated recreation and boating expenditures of $20,640 and $5,200, respectively.

The loss to the Dam area of 63 private powerboat launches represents a loss of 276 passengers with associated recreation and boating expenditures of $43,168 and $10,875, respectively.

Max Flex

Under this scenario, 75% of displaced boats from the Hells Canyon Dam to Kirkwood Historic Ranch river section would relocate to the Kirkwood Historic Ranch to Pittsburg section and the scenic river. The other 25% would be eliminated. Commercial boats would total 1,267 during the primary season. Passengers would total 5,573 with associated recreation expenditures of $871,352 and boating expenditures totaling $219,522.

Cache Creek Launches. Private powerboat launches out of the Lewiston-Clarkston area would number 1,060 under this scenario. This represents a 4% decrease from 1991 primary season use levels. Passengers would total 4,663. Associated recreation expenditures would total $729,108 with boating expenditures of $183,686.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing would number 157 under this scenario, a 22% decrease from 1991 primary season use levels. Passengers would total 689 with associated recreation and boating expenditures of $107,672 and $27,126, respectively.

Hells Canyon Creek Launches. Private powerboat launching from Hells Canyon Dam would be eliminated under this scenario. A total of 50 launches would relocate down river. This represents a 20% decrease from 1991 primary season use levels. Passengers would total 221 with associated recreation and boating expenditures of $34,572 and $8,710 respectively.

ALTERNATIVE E

Alternative E implements the alternating week of exclusive use strategy. During the exclusive motorized use week, a daily maximum of 24 boats at anyone time would be allowed in the wild section. Given an average trip length of three days, this averages out to eight boats per day. This eight boat per day average will be used for the analysis. During the exclusive non-motorized week, private powerboat use in the Hells Canyon Dam to Kirkwood Ranch section would be eliminated; a maximum of six boats would be permitted in the Kirkwood to Pittsburg section. In the scenic section, for the primary season, there would be an allocation of 20 boats per day from Friday through Sunday and ten boats per day from Monday through Thursday. This averages out to about 15 boats per day in the scenic section. This average will be used for analysis purposes.

Of the three launch sites, Cache Creek launches would be the least affected since the majority of these launches have destinations within the scenic section of the river. For the no flex scenario, it is assumed that 50% of displaced launches would relocate to the on-week or to a different river segment or both, and 50% would be eliminated. For the max flex scenario, it is assumed that 75% of displaced launches would relocate and 25% would be eliminated.

No Flex

During the exclusive motorized week, private powerboat use would not be restricted compared to 1991 use levels. During the primary season, private powerboat use would decrease by 7% compared to 1991 use levels. Passengers would total 5,562 with associated recreation expenditures of $869,705 and boating expenditures of $219,107.

Cache Creek Launches. Private powerboat launches out of the Lewiston-Clarkston area would number 1,060, a 4% decrease from 1991 use levels. Passengers would total 4,663. Associated recreation expenditures totaled $729,068 with boating expenditures of $183,676.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing would number 157, a 22% reduction. Passengers would number 690 with associated recreation and boating expenditures of $107,869 and $27,176, respectively.

Hells Canyon Creek Launches. Private powerboat launching from Hells Canyon Dam would number 48 during the 1991 primary season. Passengers would total 210 with associated recreation and boating expenditures of $32,767 and $8,255 respectively.

Max Flex

In this scenario, displaced use during the exclusive non-motorized week would either switch to a different river segment or to the exclusive motorized week or both. Private powerboats would total 1,314, with associated recreation expenditures of $904,105 and boating expenditures of $227,774.

Cache Creek Launches. Private powerboat launches out of the Lewiston-Clarkston area would number 1,080 under this scenario, a 2% decrease from 1991 primary season use levels. Passengers would total 4,754. Associated recreation expenditures would total $743,344 with boating expenditures of $187,273.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing would number 179, an 11% decrease. In this scenario, passengers would total 786 with associated recreation and boating expenditures of $122,833 and $30,946, respectively.

Hells Canyon Creek Launches. Private powerboat launching from Hells Canyon Dam would number 55, a 12% decrease from 1991 use levels. Passengers would total 243 with associated recreation and boating expenditures of $37,927 and $9,555 respectively.

ALTERNATIVE F

Alternative F would completely eliminate private powerboating in the wild section of the river for the entire year. The scenic section would have an allocation of 14 boats per day when monitoring indicates this level has been exceeded for

two consecutive years. While the analysis focuses on the primary season, there is a substantial amount of private powerboat use in the secondary season. In 1991, there were a total of 797 private powerboats in the river corridor during the secondary season. This represents 37% of the annual private powerboat use in the river corridor. Passengers during the secondary season totaled 3,188 with associated recreation and boating expenditures of $414,416. Information is not currently available to make quantitative estimates of the impact of this alternative on use in the secondary season.

No Flex

Under the same assumptions as in Alternative D, this scenario would result in a decrease of 15% in private powerboat use levels during the primary season. Private powerboat use would total 1161 boats. Passengers would total 5,109 in this scenario with associated recreation expenditures of $798,928 and boat expenditures of $201,277.

Cache Creek Launches. Private powerboat launches out of the Lewiston/Clarkston area would number 1,018, an 8 percent decrease from 1991 levels. Passengers would total 4,480. Associated recreation expenditures would be $700,544 with boating expenditures of $176,490.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing would number 113, a 44% decrease from the 1991 primary season. Passengers would total 497 with associated recreation and boating expenditures of $77,744 and $19,586, respectively.

Hells Canyon Creek Launches. Private powerboat launches from Hells Canyon Dam would be eliminated under this scenario. The effects would be the same as under Alternative D.

Max Flex

Using the same assumptions as under Alternative F for commercial powerboats, displaced private powerboat use from the wild section would switch to the scenic section up to allowable levels. This would result in an overall decrease of 11% in private powerboat use during the primary season. Private powerboats would total 1,215 during the primary season. Passengers would total 5,347 with associated recreation expenditures of $836,092 and boating expenditures of $210,639.

Cache Creek Launches. Private powerboat launches out of the Lewiston-Clarkston area would number 1,038 under this scenario. This represents a decrease of 6% from 1991 use levels. Passengers would total 4,568. Associated recreation expenditures would be $714,230 with boating expenditures of $179,938.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing would number 135, a decrease of 33% from the 1991 primary season. Passengers would total 593 with associated recreation and boating expenditures of $92,708 and $23,356, respectively.

Hells Canyon Creek Launches. Private powerboat launches from Hells Canyon Dam would be eliminated in this alternative. However, a total of 42 launches would relocate to Pittsburg or Cache Creek launch sites under this scenario. This represents a 33% decrease from 1991 use levels at the Dam. Affected passengers would total 186 and with associated recreation and boating expenditures of $29,154 and $7,345, respectively.

ALTERNATIVE G - PREFERRED

During the primary season, Alternative G would allocate six launches per day from Hells Canyon Dam to Pittsburg Landing, except for Monday through Wednesday in July and August. From the second Monday in July through the Wednesday before Labor Day, six launches per day would be allowed in the wild section Thursday through Sunday. Monday through Wednesday, the wild river from the top of Wild Sheep Rapid to the upper landing at Kirkwood Historic Ranch would be non-motorized. One launch per day would be allowed from Hells Canyon Dam to the top of Wild Sheep Rapid. From Pittsburg to Kirkwood Historic Ranch, five launches per day would be allocated for day-use only.

During the primary season in the scenic section, 20 launches per day would be allowed Friday through Sunday, plus an additional five launch-

es per day, day-use only, would be permitted from Cache Creek to the mouth of the Salmon River.

The six launch per day allocation in the wild section is a 20% increase over 1991 primary season use levels. In the scenic section, an average of 16 launches a day would be allocated, which represents a 45% increase over 1991 primary season use levels. During the non-motorized Monday-Wednesday periods, five launches per day would still be allowed in the wild section of the river up to Kirkwood Historic Ranch coming from the scenic section. One launch per day would be able to go from the Hells Canyon Dam down to the top of Wild Sheep Rapid.

The major impact of Alternative G in private powerboat usage would be during the three-day non-motorized windows. These windows total 24 days during the primary season during which motorized use would not be allowed in the wild section of the river from Hells canyon dam to the top of Wild Sheep Rapid. Using averages for the 1991 primary season, 36 boats would be affected launching out of Cache Creek, 38 boats would be affected launching out of Pittsburg Landing and 13 boats would be affected launching out of Hells Canyon Dam.

The no flex scenario assumes that 50% of these boats would relocate to a different segment of the river or choose a different period of the primary season to recreate or both. The max flex scenario assumes that 75% of displaced boats would relocate to a different river segment or move to a different period during the primary season.

No Flex

Under this scenario, private powerboat use would decrease by 4%. Private powerboats would total 1,309 with a total of 5,760 passengers. Associated recreation expenditures would be $900,592 and boating expenditures $226,889.

Cache Creek Launches. Private powerboat launches out of the Lewiston-Clarkston area would number 1,071 under this scenario. This represents a 3% decrease from 1991 primary season use levels. Passengers totaled 4,712. Associated recreation expenditures totaled $736,848 with boating expenditures of $185,636.

Pittsburg Landing Launches. Private powerboats launching out of Pittsburg Landing would number 182, a decrease of 9% from the 1991 primary season. Passengers would total 801 with associated recreation and boating expenditures of $125,216 and $31,546, respectively.

Hells Canyon Creek Launches. Private powerboat launching from Hells Canyon Dam would number 56 under this scenario which is an 11% decrease compared with the 1991 primary season. Passengers would number 246 with associated recreation and boating expenditures of $38,528 and $9,706, respectively.

Max Flex

Boat numbers and economic impact under this scenario would be the same as under Alternative A.

PRIVATE POWERBOATS: CUMULATIVE EFFECTS

ALTERNATIVE A

Alternative A would continue current management direction. Figure IV-2 shows a projected trend line for private powerboat use based on past use levels from 1982 to 1991. Private powerboat use would have a cumulative total of 19,424 boats between 1995 and 2004. Passengers would total 85,466 with associated recreation expenditures including boating expenditures of $16,733,776.

ALTERNATIVE B

For analysis purposes, Alternative B would allow an average of six boats per day in the wild section of the river with no limitations in the scenic section. Assuming that once this allocation level is reached in the wild section use levels in the scenic section would increase accordingly, boat use levels and associated recreation and boating expenditures would be the same as Alternative A.

ALTERNATIVE C

Alternative C would limit use to four boats per day in the wild section and five boats per day in the scenic section, for a maximum total of nine boats per day during the primary season. This alternative would decrease cumulative private powerboat use totals during the period 1995 to 2004 by 67% compared to Alternative A levels. Passengers would total 28,424 with associated recreation and boating expenditures of $5,565,290.

ALTERNATIVE D

Alternative D would prohibit private powerboat use from Hells Canyon Dam to the Kirkwood Historic Ranch during the primary season. An allocation level of six boats per day would be implemented in the Kirkwood to Pittsburg section when monitoring indicates this level is exceeded for two consecutive years. An allocation level of 13 boats per day in the scenic section would be implemented when monitoring indicates this level has been exceeded for two consecutive years. For analysis purposes, it is assumed use would be at 15 boats per day, which is mid-way between the no flex scenario in the direct and indirect effects section and the maximum number of boats allowed on the river per day. This scenario would result in a 38% decrease from Alternative A. Passengers would total 53,416 with associated recreation and boating expenditures of $10,458,610.

ALTERNATIVE E

Alternative E would implement the alternating week of exclusive use during the primary season. During the week of exclusive motorized use in the wild section, there would be a daily maximum of 24 private powerboats permitted. For analysis purposes, this averages to eight boats per day given an average trip length of three days per boat. During the week of exclusive non-motorized use, no private powerboats would be allowed from Hells Canyon Dam to the Kirkwood Historic Ranch. Six boats per day would be allowed in the Kirkwood to Pittsburg section. For the entire primary season, there would be an allocation of 20 boats per day in the scenic section from Friday through Sunday and an allocation of 10 boats per day Monday through Thursday. Assuming displaced private boat use from the exclusive non-motorized weeks would either relocate to a different river section or to the exclusive motorized week or both, Alternative E would result in a total of 12,890 private powerboats during the primary season from 1995 to 2004. This represents a decrease of 34% from Alternative A levels. Passengers would total 56,716 with associated recreation and boating expenditures of $11,104,735.

ALTERNATIVE F

Alternative F would eliminate private boat use in the entire wild section of the river during the primary season. In the scenic section of the river an allocation level of 14 boats per day would be implemented when monitoring indicates this level has been exceeded for two consecutive years. With an allocation level of 14 private powerboats per day, this alternative would decrease private powerboat use by 39% from 1995 to 2004. Passengers would total 52,272 with associated recreation and boating expenditures of $10,234,620.

ALTERNATIVE G - PREFERRED

During the primary season, Alternative G would allocate six launches per day from Hells Canyon Dam to Pittsburg Landing, with the following exception: from the second Monday of July through the Wednesday before Labor day, six launches per day would be allowed to operate in the wild section Thursday through Sunday. Monday through Wednesday, from the top of Wild Sheep Rapid to the upper landing at Kirkwood Historic Ranch, will be non-motorized. One launch per day will be allowed from Hells Canyon Dam to the top of Wild Sheep Rapid. From Pittsburg to Kirkwood Historic Ranch, five launches per day would be allocated for day-use only.

During the primary season in the scenic section, 20 launches per day would be allowed Friday through Sunday, plus an additional five launches per day entering the scenic river through Cache Creek for day-use only to the mouth of the Salmon River.

Based on the direct and indirect effects, Alternative G would result in a 32% reduction in cumulative use levels from 1995 to 2004 compared with Alternative A cumulative use totals. Boats would total 13,210 with 58,124 passengers. Total recreation and boating expenditures would total $11,380,415.

The above estimates are based on conservative assumptions about recreationist responses to the spatial and temporal reallocation of launch opportunities. Over time, with the continuing popularity of private powerboating in the river corridor, use may expand up to the use levels specified in this alternative. Based on the 1991 primary use season, private powerboat use could increase to a maximum of 1,878 boats during the primary season. If such is the case, then cumulative totals for Alternative G would be 7% less than under Alternative A, with commensurate cumulative effects on recreation and boating expenditures.

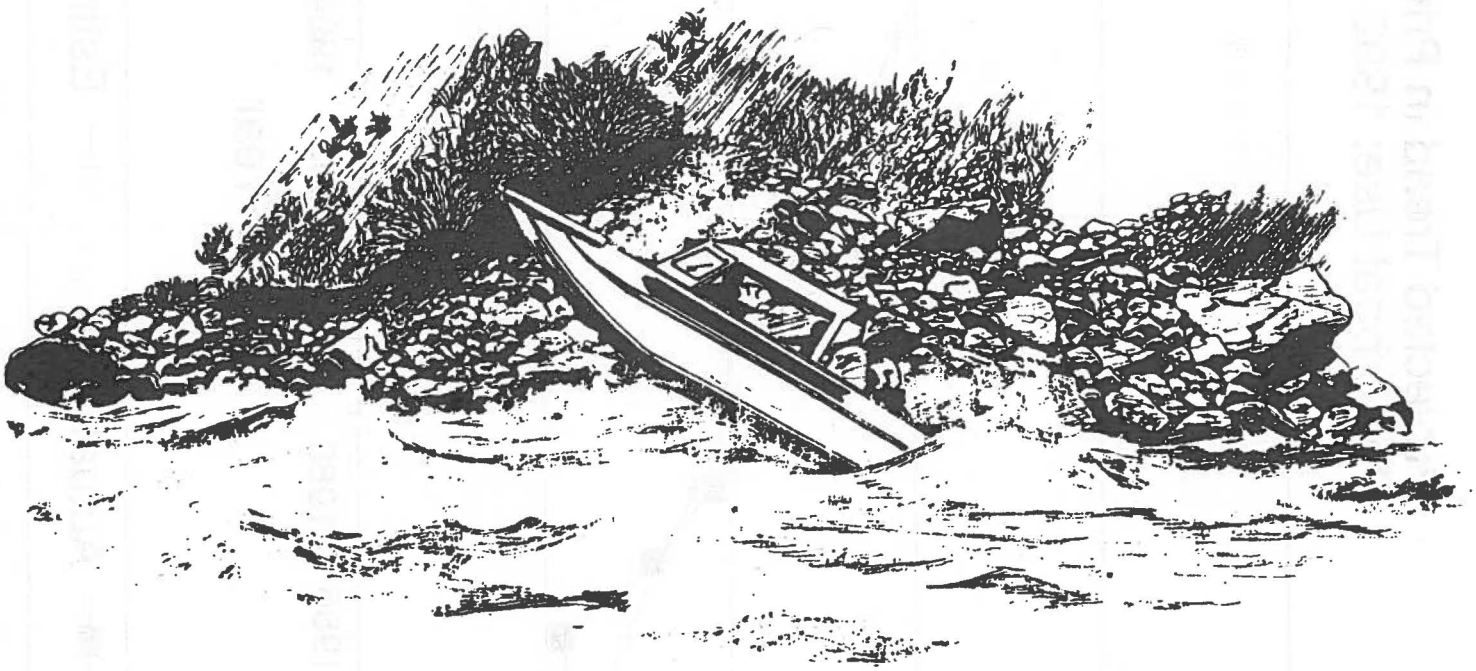
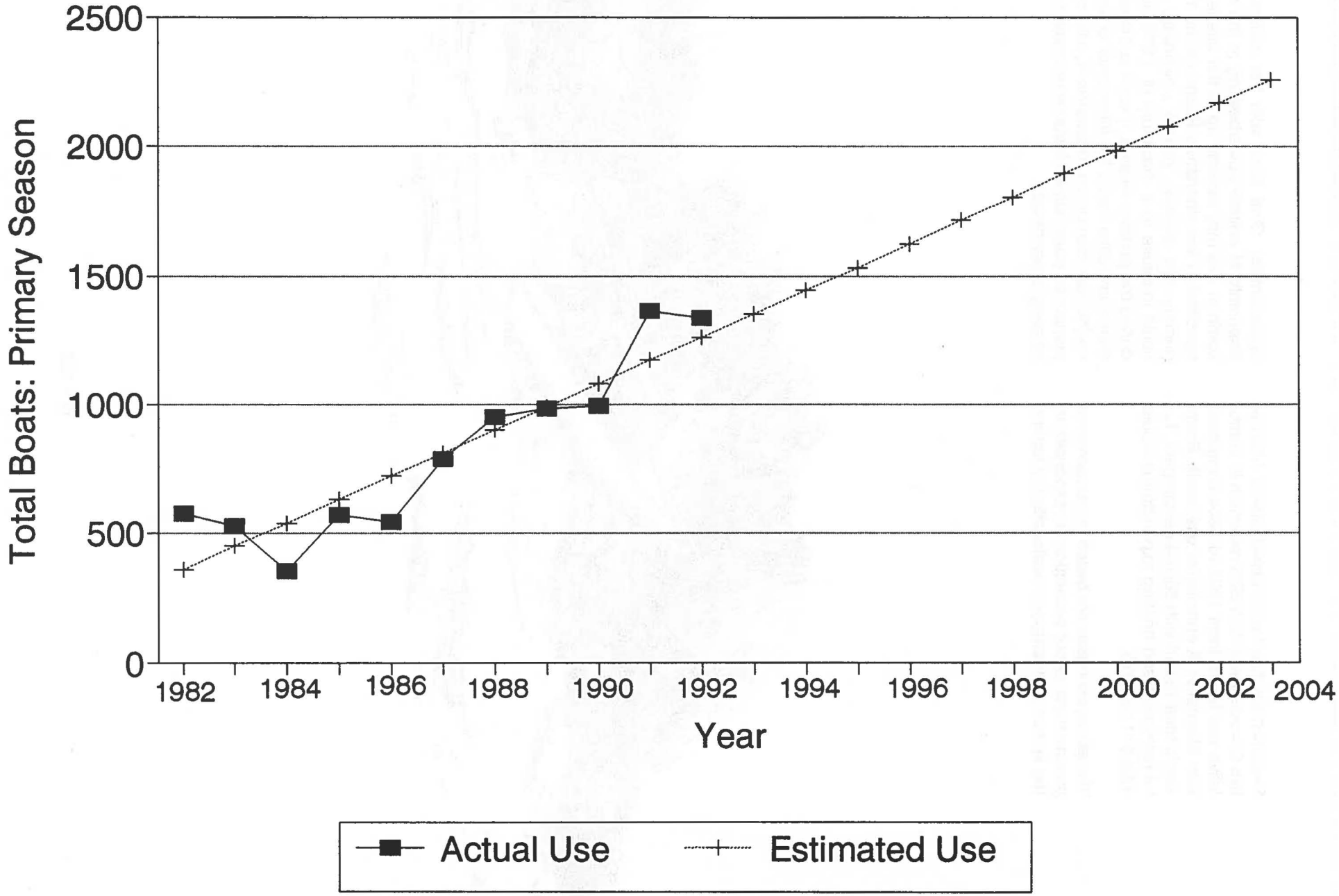


Figure IV-2

Projected Trend in Private Powerboat Use: 1992-2004



RECREATION EXPENDITURES BY AREA: COMMERCIAL AND PRIVATE POWERBOATS

Table IV-3 summarizes associated recreation expenditures by launch area for each alternative for commercial and private powerboats combined (boating operating expenses are included in the total recreation expenditures). The figures give an estimate of the potential impact of the alternatives on communities within the travel corridors of each launch site. For all three areas , Alternative C would have the most economic impact. This is primarily because of Alternative C's combined reduction in both scenic and wild section launches. Alternative G would have the least economic impact after Alternatives A and B.

JETBOAT MANUFACTURERS: DIRECT AND INDIRECT EFFECTS

A number of jetboat manufacturers are located in the Lewiston-Clarkston area and in Boise, Idaho. Changes in allowable powerboat use levels would potentially affect both commercial and private demand for powerboats to be used on the Snake River. About 20% of annual sales from Lewiston-Clarkston manufacturers are for use on the Snake River; about 95% of annual sales from Boise manufacturers are for use on the Snake River. In recent years, the 13 manufacturers in the Lewiston-Clarkston area have produced about 700 boats annually with gross sales revenue of $15 million. About 108 people are employed annually. In Boise, the two commercial manufacturers build between 50 and 75 boats annually, combined. Gross sales revenue averages $2.5 million annually. Total employment ranges between 15 and 20 workers per year.

Table IV-4 shows the estimated impact of the alternatives on gross revenue for the two manufacturing areas. This assumes a direct correlation between changes in allocated boat use and annual jetboat sales. The Boise manufacturers are affected more than the Lewiston-Clarkston manufacturers because a much higher percentage of their boat sales are for use in the Hells Canyon river corridor.

COMMERCIAL FLOAT: DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

In 1991 all commercial float trips originated from the Hells Canyon Creek launch site near the Hells Canyon Dam in the wild segment of the river. Consequently, towns along the major travel corridors, including Highway 86 from Baker City to Copperfield on the Oregon side and Highways 95 (Payette to Cambridge and south from Riggins and areas north) would be potentially affected by changes in commercial float passenger use levels. The 16 operators who had at least one launch during the 1991 primary season had their operations based in 11 different towns and cities.

There is currently a two launch per day allocation for multi-day trips and a one launch per weekday allocation for one-day trips throughout the primary season in the wild river. There are currently no limits in the scenic section. For the 1991 primary season there were 198 launches of 740 floatboats with a total of 2,096 passengers. Launches averaged 1.7 per day with 3.7 boats per launch and 2.9 passengers per boat. In 1991 permittee revenue totaled $707,652. Associated recreation expenditures came to $427,584.

ALTERNATIVE B

This alternative would continue the two launches per day limit in the wild section with no limitations in the scenic section. Since current use levels are below the limits, no decrease in use levels would occur and the economic impacts would be the same as Alternative A for both the no flex and max flex scenarios.

ALTERNATIVE C

Under this alternative there would be a two launch per day limit in the wild section with a one launch per day (commercial or private) limit in the scenic section. Since current use levels are below these limits, use levels would not decrease from current levels and the economic

impacts would be the same as Alternative A for both scenarios.

ALTERNATIVE D

Alternative D would allow two launches per day from Hells Canyon Dam. Launches would not be permitted in the scenic section during the primary season. One day floats with jetbacks would be eliminated during the primary season.

The major economic impact of this alternative would be the elimination of the one-day floats with jetbacks and the jetbacks associated with multi-day float trips since motorized use would not be permitted in the wild section. During the 1991 primary season, two permittees had one-day float permits. The two outfitters had a combined total of 40 trips, 279 passengers, $16,939 in operator revenue and $33,480 in associated recreation expenditures.

The elimination of jetbacks would potentially increase the time and expenditures necessary for recreationists to engage in multi-day float trips. The effect on the demand for multi-day float trips would depend on consumer expectations, operator marketing, advertising and pricing policies, and the existence of dependable shuttle services, among a variety of factors.

It is assumed that because of (1) the popularity of commercial rafting, as evidenced by a 27% increase in passengers between 1985 and 1991 despite a 60% increase in revenues per passenger (cost to the passenger); (2) the increased quality of the float experience during the three day non-motorized periods as perceived by a segment of float recreationists; and (3) the fact that other rivers without jetbacks are not experiencing declines in use (W. Fine; personal communication), there would not be a decrease in demand for commercial float trips because of increased reliance on land transportation. Therefore, the primary economic impact would be the loss of the one-day floats.

No Flex

Under this scenario, all one-day float trips would be eliminated and recreationists would not switch to multi-day float trips. Commercial float trips would number 158, a 20 percent decrease from 1991 primary season use levels. Permittee revenues would total $690,713. Passengers would number 1,817 with associated recreation expenditures of $394,104.

Max Flex

Under this scenario, 50% of the recreationists who could no longer take one-day floats would take a multi-day float trip instead. The other 50% would no longer recreate on the river. Under this scenario, launches would total 178, a 10% decrease from 1991 primary season use levels. Permittee revenue would total $699,182. Passengers would total 1,956 with associated expenditures of $410,844.

ALTERNATIVE E

Alternative E would implement the alternating week of exclusive use strategy. During the week of exclusive non-motorized use, launches would be limited to three per day in the wild section and one launch, commercial or private, in the scenic section. During the week of exclusive motorized use, launches would not be permitted in the wild section. One launch, commercial or private, per day would be permitted in the scenic section. One day floats with jetbacks would be eliminated during the primary season.

Assuming that commercial float launches do not relocate to the scenic section, the alternating weeks of motorized and non-motorized use would potentially affect the ability of commercial outfitters to hire guides and other employees. From a labor perspective, there may be a decrease in demand for primary season jobs with commercial outfitters who can offer employment only on alternating weeks. if such is the case, operators may have to increase wages and other benefits to attract employees, which in turn may result in increased trip costs for passengers.

No Flex

In this scenario, float trips would be eliminated during the motorized week and the 1991 primary season per day average would remain the

same during the non-motorized weeks. Float trips would number 98, which represents a 51% decrease from 1991 primary season use levels. Permittee revenues would total $349,359 with associated recreation expenditures of $213,792.

Max Flex

In this scenario, float trips would be eliminated during the motorized week and would increase to the maximum per day launches allowed under this alternative, 3 per day during the non-motorized weeks. Float trips would number 173 under this scenario, a decrease of 10% compared with the 1991 primary season. Permittee revenue would total $615,515. Passengers would number 1,829 with associated recreation expenditures of $373,014.

ALTERNATIVE F

Alternative F would allow a maximum of 100 users per day, either commercial or private. In 1991 for all float passengers, 58% were private and 42% were commercial passengers. This translates into 23.2 private passengers and 16.5 commercial passengers per day for the primary season. Assuming this ratio holds, the 100 passenger per day allocation would result in a maximum of 58 private floatboaters and 42 commercial floatboaters. Alternative F would eliminate the use of jetbacks and one-day floats because of the elimination of motorized use in the wild section of the river. The impacts would be the same as for Alternative D for both scenarios.

ALTERNATIVE G - PREFERRED

There would be a continuation of the two launch per day allocation from Hells Canyon Dam. The two temporary one-day float permits at Hells Canyon Dam would be eliminated beginning with the 1995 primary season. Float permittees would be allowed to use a multi-day launch date for the purpose of a one-day float, as long as the permittees can secure jetbacks from the existing daily allocation of commercial motorized use. One-day floats would not be permitted during the three-day non-motorized periods.

The main economic impacts from this alternative would be the elimination of jetbacks during the three-day non-motorized periods and the loss of the two one-day float permits. In certain cases, for those float parties wanting a jetback, trip lengths may have to be shortened or lengthened so the end of the trip coincides with a motorized day. Those floaters choosing to return during the three-day non-motorized period would have to rely on land transportation. Similar to Alternatives D and F, the primary economic impact would be the loss of the one-day floats, hence the economic impacts would be the same as these alternatives.

COMMERCIAL FLOAT: CUMULATIVE EFFECTS

ALTERNATIVE A

Alternative A would continue current management direction. There is a two launch per day limit in the wild section during the primary season. There is no limit on floatcraft use in the scenic section. Since there is no current commercial float use in the scenic section, it is assumed commercial float activities would not expand to the scenic section when the allocation level is reached in the wild section. Based on use data from 1982 to 1991, commercial multi-day float launches would reach the maximum allowable launches (based on a 115 day season) in 1996. Currently, the two operators who hold temporary one-day float permits can launch a maximum of one trip per day (total) during the primary season. It is assumed that the average annual increase in one-day floats would be the same as for the multi-day float launches. It is also assumed that the temporary one-day float permits would remain in effect during the period 1995-2004.

Commercial float launches would number 2,931 for the period 1995 to 2004. Multi-day launches would number 2,265 and one-day floats would number 666. Passengers would number 28,626 with associated recreation expenditures of $5,167,356. Permittee revenue would total $7,565,958.

ALTERNATIVE B

Alternative B continues the two launch per day limit in the wild section of the river with no limitations on float use in the scenic section. Economic impacts would be the same as Alternative A.

ALTERNATIVE C

Alternative C would continue the two launch per day limit in the wild section of the river and would place a one launch per day limit in the scenic river which could be either a commercial or private float launch. Under the assumption in Alternative A that commercial float activity in the scenic section would not develop, this restriction would not affect commercial float use. Consequently, the economic impacts are the same as for Alternative A.

ALTERNATIVE D

Alternative D would continue the two launch per day limit in the wild section and would eliminate commercial float use in the scenic section. Since motorized use would not be permitted in the wild section of the river, one-day floats would be effectively eliminated. Multi-day commercial float launch opportunities would not be affected. Passengers would total 23,964, a decrease of 16% compared with Alternative A for 1995 to 2004. Permittee revenue would total $7,284,240. Associated recreation expenditures would be $4,607,916.

ALTERNATIVE E

Alternative E would implement the alternating week of exclusive use strategy. During the week of exclusive use for floaters, commercial launches in the wild section of the river would be allowed to increase to three per day. During the week of exclusive use for motorized users, no commercial launches would be allowed in the wild section of the river. For the entire primary season, there would be a one launch per day, commercial or private, limit in the scenic section of the river when monitoring has indicated this level has been exceeded. Assuming commercial float operators would not move to the scenic section, there would be a maximum of 173 launches for the entire primary season (based on a 115 day primary season). Commercial float launches would total 2,063 during 1995-2004. This is a 30% decrease in total launches compared with Alternative A. Total permittee revenue would be $5,704,539 with passengers totaling 20,634. Associated recreation expenditures would be $3,799,232.

ALTERNATIVE F

Alternative F would limit float use in the wild section to a maximum of 100 people per day, either commercial or private floaters, during the primary season. Commercial launches would be prohibited in the scenic section during the primary season. Based on the current (1991) level of float passenger use, and assuming the relative proportion of commercial and private float passengers stays the same, this alternative would result in up to 42 commercial and 58 private float passengers per day during the primary season. Similar to Alternative D, Alternative F would effectively eliminate one-day floats during during the primary season since motorized use would be eliminated in the wild section of the river. Cumulative economic impacts would be the same as for Alternative D.

ALTERNATIVE G

Alternative G would eliminate the two one-day float permits beginning in 1995. Although float operators would be able to use a multi-day launch opportunity to conduct a one-day float, it would be counted towards the two launch per day maximum. Currently, the two one-day float permits are considered separately from the multi-day launches. There is a one launch per day maximum for the two one-day float operators combined. Consequently, Alternative G would not affect multi-day launch opportunities and would eliminate the separate one-day floats. The cumulative economic impacts would be the same as for Alternatives D and F.

PRIVATE FLOAT: DIRECT AND INDIRECT EFFECTS

ALTERNATIVE A

Alternative A continues current management direction. Currently there is a three launch per day

allocation in the wild river section with no restrictions in the scenic section. In 1991 there were a total 260 launches with 1,047 floatboats during the primary season. Private float use accounted for 2,670 passengers with associated expenditures of $630,864. On an average per day basis during the primary season in 1991, there were 2.3 launches from Hells Canyon Creek launch site and 0.1 launches in the scenic section.

ALTERNATIVE B

This alternative would continue the current three launch per day allocation in the wild section with no restrictions in the scenic section. Use levels and associated expenditures would be the same as Alternative A for both scenarios.

ALTERNATIVE C

This alternative would continue the three launch per day allocation in the wild section and provide one launch per day, commercial or private, in the scenic section. Since current use levels are below these allocation levels, use levels and associated expenditures would be the same as Alternative A for both scenarios.

ALTERNATIVE D

Under Alternative D, a three launch per day allocation would be in place for the wild section and no launches would be permitted in the scenic section.

Alternative D would eliminate jetbacks during the primary season. For reasons similar to those discussed under Alternative D for commercial floatboats, the elimination of jetbacks would not appreciably affect the demand for private float trips in the river corridor.

No Flex

Under this scenario, launches in the wild section would remain the same and scenic launches would be eliminated. Launches would total 248, a 5% decrease from the 1991 primary season use levels. Passengers would total 2,547. Associated recreation expenditures would be $601,747.

Max Flex

Under this scenario, displaced scenic launches would relocate to the wild section. In this case, the economic impacts would be the same as for Alternative A.

ALTERNATIVE E

Alternative E would implement the alternating week of exclusive use strategy. During the exclusive non-motorized week, there would be a maximum of four launches per day in the wild section and one launch per day, commercial or private, in the scenic section. During the exclusive motorized week, private floatboat launches in the wild section would be prohibited and one launch per day, commercial or private, would be allowed in the scenic section.

No Flex

During the exclusive non-motorized week, average per day launches would remain the same. No launches would occur during the motorized week. Launches would total 136 under this scenario, a decrease of 48% in comparison with 1991 primary season use levels. Passengers would total 1,394 with associated recreation expenditures of $329,383.

Max Flex

Under this scenario, it is assumed that average launches per day from the Dam would increase to the maximum allowable under this alternative during the non-motorized week, 3 per day. Scenic section launches would remain the same. Launches would total 178, a 32% decrease from 1991 primary season use levels. Passengers would total 1,828 with associated recreation expenditures of $431,899.

ALTERNATIVE F

This alternative would limit float use in the wild river section to 100 people per day, commercial or private. Private float use would be prohibited in the scenic section. In 1991 for all float passengers, 59% were private and 41% were commercial passengers. This translates into 18.4 commercial passengers and 26.3 commercial

passengers per day for current use. Jetbacks would be eliminated since motorized use would not be permitted in the wild section of the river. As discussed under Alternative D, the loss of jetbacks would not result in any change from 1991 private floatboat use levels.

No Flex

Under this scenario in the wild section, both private and commercial float use could double from current levels and still be under the 100 person maximum. In the scenic section, 0.1 launches per day would be lost. Boat use levels and economic impacts would be the same as Alternative D under the no flex scenario.

Max Flex

Economic impacts would be the same as discussed under Alternative D.

ALTERNATIVE G - PREFERRED

Alternative G provides for three launches per day in the wild section of the river during the primary season. One launch per day would be allowed Friday through Sunday from both Pittsburg Landing and Dug Bar. For Monday through Thursday, allow an average of one launch per day from both Pittsburg and Dug Bar. Private float launches and economic impacts would be the same as under Alternative A under both scenarios.

PRIVATE FLOATBOATS: CUMULATIVE EFFECTS

ALTERNATIVE A

Alternative A would continue current management direction. There is currently a three launch per day limit in the wild section of the river for private floatboats. Private float launches increased 2.5% for the period 1982 to 1992. The average annual change was 1.2%. Based on use from 1982 to 1992, private floatboat launches would total 3,446 during 1995-2004. Passengers would total 35,356 people with associated recreation expenditures of $8,355,861.

ALTERNATIVE B

Alternative B would continue the three launch per day limitation in the wild section of the river with no restrictions on float use in the scenic section. The economic impacts would be the same as Alternative A.

ALTERNATIVE C

Alternative C would continue the allocation level of three launches per day in the wild section of the river. A one launch per day limitation, commercial or private, would be implemented in the scenic section of the river. Assuming private float use would expand in the scenic section of the river as the allocation level in the wild section is reached, use levels and economic impacts would be the same as Alternative A.

ALTERNATIVE D

Alternative D would limit private float launches in the wild section to three launches per day during the primary season and eliminate float use in the scenic section. It is assumed that displaced private floaters from the scenic section would use the wild section of the river. If this assumption is correct, then boat use levels and economic impacts would be the same as Alternative A.

ALTERNATIVE E

Alternative E would implement the alternating week of exclusive use strategy. During the week of exclusive non-motorized use, there would be a maximum of 3 launches per day in the wild section. During the week of exclusive motorized use, there would be no launches permitted in the wild section. For the entire primary season, a maximum of one launch per day, commercial or private, would be allowed in the scenic section. Cumulative launches would total 1,780, a decrease of 48% in comparison with Alternative A. Passengers would total 18,263 with associated recreation expenditures of $4,316,144.

ALTERNATIVE F

Alternative F would allow a maximum of 100 passengers per day in the wild section, commercial or private, and would prohibit private

float launches in the scenic section. Assuming private use in the scenic section would expand to the wild section, floatboat use levels and economic impacts would be the same as for Alternative A.

ALTERNATIVE G - PREFERRED

Alternative G provides for three launches per day in the wild section of the river during the primary season. Private float launches and economic impacts would be the same as under Alternative A.

COMMERCIAL AND PRIVATE FLOATBOATS: SUMMARY OF ASSOCIATED RECREATION EXPENDITURES

Table IV-5 summarizes recreation expenditures related to commercial and float use by alternative. These figures are summaries of the direct and indirect effects for commercial and private floatboats. Since virtually all commercial and private float trips launch from Hells Canyon Dam, this table gives an estimate of the potential economic impacts on communities which lie along the travel corridors to the Dam.

SUMMARY TABLES

Tables IV-6 and IV-7 summarize the direct and indirect economic impacts for commercial and private jetboaters and commercial and private floatboaters, respectively. Table IV-8 summarizes the cumulative economic impacts by alternative for power and floatboaters. Table IV-9 shows displaced recreationists by boat activity by alternative, based on 1991 use levels. Table IV-10 shows the cumulative displaced recreationists by alternative for the period 1995-2004.

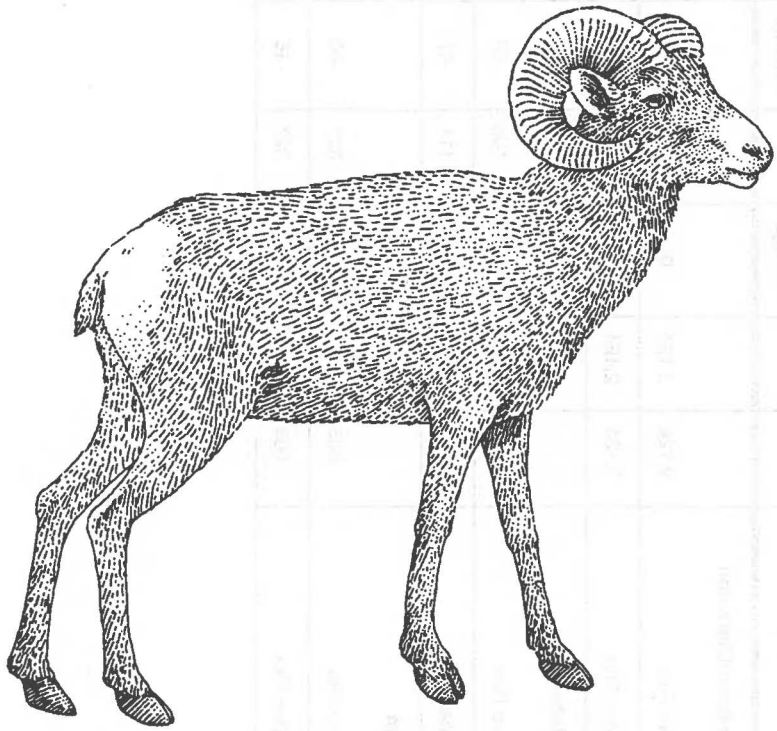


Table IV-3

Recreation Expenditures by Area; Commercial and Private Powerboats (Thousands $)													
Area	**A**	**B**	**% Change**	**C**	**% Change**	**D**	**% Change**	**E**	**% Change**	**F**	**% Change**	**G**	**% Change**
Lewiston/Clarkston													
No Flex	2,124	2,124	0	1,070	-50	1,596	-0.25	1,860	-0.12	1,596	-0.25	1,924	-0.09
Max Flex	2,124	2,124	0	1,263	-40	1,861	-0.12	1,994	-6	1,727	-0.19	1,996	-0.06
Pittsburg													
No Flex	210	210	0	100	-53	124	-0.41	167	-38	124	-0.41	194	-0.08
Max Flex	210	210	0	111	-47	167	-0.21	188	-0.1	145	-0.31	203	-0.03
Dam													
No Flex	605	605	0	327	-46	0	-1	394	-37	0	-1	547	-0.1
Max Flex	605	605	0	327	-46	0	-1	441	-27	0	-1	572	-0.05

Table IV-4

Impact of Alternatives on Jetboat Manufacturer Revenue (Thousands $)													
Area	**A**	**B**	**% Change**	**C**	**% Change**	**D**	**% Change**	**E**	**% Change**	**F**	**% Change**	**G**	**% Change**
Lewiston/Clarkston													
No Flex	15,000	15,000	0	13,500	-10	14,220	-5	14,460	-4	14,220	-5	14,610	-3
Max Flex	15,000	15,000	0	13,650	-9	14,610	-3	14,760	-2	14,430	-4	14,910	-1
Boise													
No Flex	2,500	2,500	0	1,313	-48	1,883	-25	2,073	-17	1,883	-25	2,191	-12
Max Flex	2,500	2,500	0	1,431	-43	2,191	-12	2,310	-8	2,049	-18	2,429	-3

20 percent of Lewiston/Clarkston sales are for use on the Snake.
95 percent of Boise sales are for the Snake.

Table IV-5

Total Recreation Expenditures: Commercial and Private Float Passengers (Thousands $)													
	A	**B**	**% Change**	**C**	**% Change**	**D**	**% Change**	**E**	**% Change**	**F**	**% Change**	**G**	**% Change**
No Flex	1,058	1,058	0	1,058	0	996	-0.06	543	-0.49	996	-0.06	1,025	-0.03
Max Flex	1,058	1,058	0	1,058	0	1,042	-0.02	805	-0.24	1,042	-0.02	1,042	-0.02

Table IV-6

Annual Commercial and Private Powerboat Revenue and Expenditure Impacts, by Alternative[1] (Thousands $)							
	A	B	C	D	E	F	G
Commercial Powerboat:							
Permittee Revenue							
No Flex	1,040	1,040	564	624	816	624	899
Max Flex	1,040	1,040	708	832	914	727	951
Recreation Expenditures							
No Flex	1,765	1,765	940	1,021	1,332	1,021	1,537
Max Flex	1,765	1,765	1,144	1,390	1,491	1,205	1,623
Total: No Flex	**$2,805**	**$2,805**	**$1,904**	**$1,645**	**$2,149**	**$1,644**	**$2,436**
Total: Max Flex	**$2,805**	**$2,805**	**$1,852**	**$2,222**	**$2,404**	**$1,932**	**$2,574**
Private Powerboat:							
Recreation Expenditures							
No Flex	938	938	444	799	870	799	901
Max Flex	938	938	444	871	904	836	916
Boating Expenditures							
No Flex	236	236	112	201	219	176	227
Max Flex	236	236	112	220	228	211	231
Total: No Flex	**$1,175**	**$1,175**	**$556**	**$1,000**	**$1,089**	**$975**	**$1,128**
Total: Max Flex	**$1,175**	**$1,175**	**$556**	**$1,091**	**$1,132**	**$1,047**	**$1,147**

[1] Based on 1991 use data.

Table IV-7

Annual Primary Season Commercial and Private Floatboat Total Revenue and Expenditure Impacts, by Alternative[1] (Thousands $)							
	A	B	C	D	E	F	G
Commercial Float							
Permittee Revenue							
No Flex	708	708	708	691	349	691	691
Max Flex	708	708	708	699	616	699	699
Recreation Expenditures							
No Flex	428	428	428	394	214	394	394
Max Flex	428	428	428	411	373	411	411
Total: No Flex	**$1,136**	**$1,136**	**$1,136**	**$1,085**	**$563**	**$1,085**	**$1,085**
Total: Max Flex	**$1,136**	**$1,136**	**$1,136**	**$1,110**	**$989**	**$1,110**	**$1,110**
Private Float							
Recreation Expenditures							
No Flex	631	631	631	602	329	602	631
Max Flex	631	631	631	631	432	631	631

[1] Based on 1991 use data.



Table IV-8

Cumulative Economic Impacts on Power and Float Boaters, 1994-2003 (Thousands $)													
Activity	**A**	**B**	**% Change[1]**	**C**	**% Change**	**D**	**% Change**	**E**	**% Change**	**F**	**% Change**	**G**	**% Change**
Commercial Powerboat													
Permittee Revenue	13,300	13,300	-	6,700	-	7,700	-	9,100	-	7,200	-	10,000	-
Recreation Expenditures	21,100	21,100	-	10,600	-	12,300	-	14,400	-	11,300	-	15,800	-
Total	$34,400	$34,400	0%	$17,300	-50%	$20,000	-42%	$23,500	-32%	$18,500	-46%	$25,800	-25%
Private Powerboat													
Recreation Expenditures[2]	16,700	16,700	0%	5,600	-67%	10,500	-38%	11,100	-34%	10,200	-39%	11,400	-32%
Commercial Float													
Permittee Revenue	7,600	7,600	-	7,600	-	7,300	-	5,700	-	7,300	-	7,300	-
Recreation Expenditures	5,200	5,200	-	5,200	-	4,600	-	3,800	-	4,600	-	4,600	-
Total	$12,700	$12,700	0%	$12,700	0%	$11,900	-7%	$9,500	-25%	$11,900	-7%	$11,900	-7%
Private Float													
Recreation Expenditures	8,400	8,400	0%	8,400	0%	8,400	0%	4,300	-48%	8,400	0%	8,400	0%

[2] Includes boating expenditures

Table IV-9

Annual Displaced Recreationists by Activity and Alternative, Based on 1991 Use Levels												
Activity	**A**	**B**	**C**	**%[1]**	**D**	**%[1]**	**E**	**%[1]**	**F**	**%[1]**	**G**	**%[1]**
Commercial Powerboat												
No Flex	0	0	-6,672	-46	-6,020	-41	-3,471	-24	-6,020	-41	-1,783	-12
Max Flex	0	0	-5,074	-35	-2,988	-21	-2,179	-15	-4,511	-31	-1,076	-7
Private Powerboat												
No Flex	0	0	-3,161	-53	-893	-15	-440	-7	-893	-15	-242	-4
Max Flex	0	0	-3,161	-53	-429	-7	-220	-4	-665	-11	-141	-2
Commercial Float												
No Flex	0	0	0	0	-279	-13	-1,048	-50	-279	-13	-279	-13
Max Flex	0	0	0	0	-140	-7	-267	-13	-140	-7	-140	-7
Private Float												
No Flex	0	0	0	0	-123	-5	-1,276	-52	-123	-5	0	0
Max Flex	0	0	0	0	0	0	-842	-32	0	0	0	0

[1] Percentages are the percent reduction from 1991 regulated season passenger levels for the indicated activity.

Table IV-10

Displaced Recreationists by Activity and Alternative Cumulative, Total for 1995-2004												
Activity	**A**	**B**	**C**	**% Change[1]**	**D**	**% Change[1]**	**E**	**% Change[1]**	**F**	**% Change[1]**	**G**	**% Change[1]**
Commercial Powerboat	0	0	-84,998	-50	-71,622	-42	-53,990	-32	-79,070	-46	-42,590	-25
Private Powerboat	0	0	-57,041	-67	-32,050	-38	-28,750	-34	-33,194	-39	-27,342	-32
Commercial Float	0	0	0	0	-4,662	-16	-7,992	-28	-4,662	-16	-4,662	-16
Private Float	0	0	0	0	0	0	-17,093	-48	0	0	0	0

[1] Percentages are percent change from Alternative A passenger use levels.

NON-RECREATIONAL RIVER USES (LIVESTOCK RANCHES/INHOLDINGS): DIRECT, INDIRECT AND CUMULATIVE EFFECTS

ALTERNATIVE A

Alternative A continues current management direction of unlimited access to grazing allotments and inholdings for both the primary and secondary seasons.

ALTERNATIVE B

Alternative B continues current management direction of unlimited access to grazing allotments and inholdings for both the primary and secondary seasons.

ALTERNATIVE C

Alternative C would restrict the allowable number of powerboat trips to the grazing allotments and inholdings. From Hells Canyon Dam to Kirkwood Historic Ranch, a maximum of two trips a week would be allowed to the Temperance Creek Allotment and no access would be allowed to the Sheep Creek Allotment during the primary season. Access would continue to be unlimited during the secondary season. Currently, powerboat trips necessary for commercial operations on the Temperance Creek Allotment average between two and three trips per week during the primary season (Chuck Anderson, personal communication). This is only an average, however. Some weeks no trips are made and other weeks several trips might be made. At times the two trips per week restriction may result in increased economic costs and lost revenue for the Temperance Creek grazing operation. Currently, grazing operations at the Sheep Creek Allotment occur only during the secondary season.

From the Kirkwood Historic Ranch to Pittsburg, there would be a limit of one trip per day to the Kirby Creek inholding during the primary season. Access restrictions may affect the property value of the inholding and may also result in increased maintenance and transportation costs. Access would be unlimited during the secondary season.

In the scenic section, there would be a one round-trip per day limit to all grazing allotments and inholdings during the primary season. Access restrictions in comparison with the current situation may affect inholding property values and result in increased costs and lost revenue for livestock ranches which are dependent on river access for at least some portion of their operations. During the secondary season there would be unlimited access.

ALTERNATIVE D

Alternative D would eliminate all motorized access to the Temperance Creek and Sheep Creek Allotments in the wild river from the Hells Canyon Dam to Kirkwood Historic Ranch. Access would be unlimited during the secondary season. This alternative would result in the Temperance Creek Allotment becoming economically unviable during the primary season. The Sheep Creek Allotment would not be affected as discussed under Alternative C.

Access restrictions and potential economic effects from the Kirkwood Historic Ranch to Pittsburg and in the scenic section would be the same as Alternative C.

ALTERNATIVE E

Alternative E would implement the alternating weeks of exclusive motorized and non-motorized use. During the exclusive motorized weeks, there would be no limitations on access to the Temperance and Sheep Creek Allotments. During the exclusive non-motorized weeks, no motorized access would be allowed to these allotments. Economic costs associated with this alternative would be minimal with the exception of instances where machinery breaks down at critical periods (such as the haying season) and repairs are hampered by the access restrictions during the non-motorized weeks. In such cases, economic costs may be substantial. Access would be unrestricted during the secondary season.

Access restrictions and potential economic effects from the Kirkwood Historic Ranch to Pittsburg and in the scenic section would be the same as Alternative C.

ALTERNATIVE F

Alternative F would eliminate motorized access to the Temperance Creek and Sheep Creek Allotments, year-long. This would effectively eliminate livestock grazing on these allotments.

Access restrictions and potential economic effects from the Kirkwood Historic Ranch to Pittsburg and in the scenic section would be the same as Alternative C.

ALTERNATIVE G - PREFERRED

Alternative G would allow one trip per day during the primary season from Pittsburg Landing to Temperance Creek, and access would be unregulated during the secondary season. Since current powerboat trips average between two and three trips per week during the primary season, this alternative would not affect Temperance Creek Allotment operations.

Powerboats to the Sheep Creek Allotment would be eliminated. Currently, Sheep Creek allotment operates only during the secondary season, so Alternative G would not affect Sheep Creek Allotment operations.

MANAGEMENT IMPLEMENTATION COSTS

The following table shows an estimate of expenditures needed to manage the river in an administratively efficient manner.

Alternative	Amount ($)	Percent Change from Alt A
A	463,900	NA
B	463,900	0%
C	441,000	-5%
D	418,800	-11%
E	457,900	-1%
F	375,500	-19%
G	463,900	0%

"Administratively efficient" refers to the portion of total program funding that reaches the field for on-river management. Administratively efficient management schemes that adequately protect the river resource, ORV's and improve social conditions for recreationists are most desirable because more funding reaches the field level for on-river management of the resource. (reference analysis file for more detailed discussion of administrative efficiency).

POTENTIAL CONFLICTS WITH PLANS AND POLICIES OF OTHER JURISDICTIONS

Alternatives described in this FEIS were reviewed for consistency with other plans and policies. All alternatives were determined to be consistent with the 1990 Resource Planning Act and the Oregon and Idaho Departments of Environmental Quality.

The following plans will be addressed more specifically:

ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT

All of the alternatives in this FEIS would continue to provide owners of private inholdings reasonable access. The level of motorized access varies by alternative as displayed in Chapter II of this FEIS.

AMERICAN INDIAN RELIGIOUS FREEDOM ACT

The primary use of the river corridor by Native Americans for religious purposes appears to have been to develop unique, individual links with the natural world. Although no continuing religious practices have been identified within the river corridor, several sites which were once important to the area's native inhabitants are known. Protection of these sites and cooperation with Indian Tribes to identify other sites would continue under all the alternatives.

As presented in the Environmental Consequences on the Historic and Prehistoric Outstandingly Remarkable Value section of this

chapter, all of the alternatives would have the potential for site discovery and disturbance.

AMERICANS WITH DISABILITIES ACT

All of the alternatives in this FEIS would continue to provide access to individuals with disabilities. The level type of access (motorized, nonmotorized, and aircraft) varies by alternative as displayed in Chapter II of this FEIS.

CLEAN AIR ACT

All of the alternatives in this FEIS are in compliance with state and federal clean air laws. The Class I Hells Canyon Wilderness boundary is one-quarter mile from the river boundary. A screening analysis of prevention of significant deterioration (PSD) increment consumption has been accomplished to ensure the jetboat emissions for sulfur dioxide, particulate matter, and nitrogen dioxide are insignificant and well within the PSD Class I increment. This analysis showed increment consumption is very small. Baseline for SO2 and TSP was established in 1978 (NOx was established in 1988) at a time when jetboat use was already established. Consequently, a significant portion of the emissions are within baseline. A similar analysis was accomplished for campfire emissions with no significant increment consumption indicated. In addition, emissions in all of the alternatives in this FEIS are sufficiently low that the air quality related values (visibility, odor, water quality, fauna, flora, cultural, and archeological resources), established for the Hells Canyon Wilderness would not be significantly impacted by proposed levels of jetboat activity. Reference the analysis file for further discussion on the Class I air resource of the Hells Canyon Wilderness.

WILDERNESS ACT

The sound of engines within the wild and scenic river corridor predates the establishment of the HCNRA, the Wild and Scenic Snake River, and the Hells Canyon Wilderness. Wilderness regulations are for administering lands within wilderness boundaries and are not intended to create and/or enforce "buffer zones" for activities occurring on adjacent lands. Wilderness management standards and values cannot be applied to river corridor activities.

The Hells Canyon NRA Act recognized motorized rivercraft as a valid use of the Snake River within the recreation area (Section 10(d)). The Act further states the HCNRA will be administered in a manner compatible with conservation of wilderness values contributing to the public benefit. Reference Appendix C for further discussion.

U. S. FISH AND WILDLIFE SERVICE RECOVERY PLANS

All alternatives would comply with the U. S. Fish and Wildlife Service Recovery Plans for endangered species. No adverse effects not already identified in the FEIS for the Forest Plan would result from implementation of any alternative.

NATIONAL MARINE FISHERIES SERVICE

Spring and Summer Chinook Salmon

All of the alternatives in this FEIS would comply, and are consistent with the Endangered Species Act.

CULTURAL RESOURCES

All actions would comply with federal historic preservation law and regulations, including Executive Order 11593, Section 106 and 110 of the National Historic Preservation Act of 1966, the American Indian Religious Freedom Act, and the Archaeological Resources Protection Act of 1979, as amended.

RECREATION

All alternatives would continue to meet the recreational demands projected in the Statewide Comprehensive Outdoor Recreation Plans of Oregon and Idaho (12/88 and 1/89, respectively).

None of the alternatives in this FEIS would conflict with the management of the Lower Salmon River Management Plan administered by the Bureau of Land Management.

PROBABLE ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Implementing any alternative would result in some adverse environmental effects that cannot be avoided. Standards, guidelines, and mitigation measures are intended to keep the extent and duration of these effects within acceptable levels, but adverse effects cannot be completely eliminated. The following adverse environmental consequences would be associated to some extent with all the alternatives.

RECREATION

Loss or reduction of some opportunities due to development and/or management for other recreation opportunities or other resource objectives.

Reduction of the recreation experience for Hells Canyon Wilderness Area users due to sounds generated by motorized watercraft and aircraft.

FISH/WILDLIFE/PLANT HABITAT

Loss or reduction of habitat for some species as a result of fluctuating clear water flows in some portions of the river corridor.

Loss or reduction of habitat for some plant species as a result of recreation use, and/or ecological changes resulting from non-native species.

Displacement of wildlife when their habitat is disturbed by recreation use.

SCENERY

Reduction in the unique waterway sounds of the scenic ORV as a result of motorized watercraft and aircraft use and the sounds generated by the physical presence of other recreationists.

WATERSHED

Contamination of water sources due to increased human use of the HCNRA.

Loss of soils from vegetated areas and beaches resulting from recreation use.

Loss of soils from vegetated areas and beaches resulting from fluctuating clear water flows.

AIR QUALITY

Short-term reduction in air quality due to emissions resulting from motorized recreation use.

FIRE MANAGEMENT

Continuation of (and/or increases in) fire hazards from dispersed recreation use.

RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Short-term use of the land includes the day-to-day and even year-to-year activities that visitors and Forest Service managers engage in while in the river corridor. It includes activities that physically remove resources from the land, such as hunting, fishing, and berry picking as well as activities that do not, such as rafting, powerboating, scenery viewing, hiking, and photography. Short-term actions include management activities such as vegetation management often performed to permit, encourage, or discourage other activities, such as those noted above.

Long-term productivity refers to the land's continuing ability to produce commodities; such as fish, wildlife and plant products; as well as amenities; such as scenery and recreation opportunities, for future generations. This ability depends on management practices and uses that do not impair soil productivity or water quality to the point they are no longer capable of providing habitat; alter the natural landscape beyond its ability to recover; or impair geologic features to the extent they lose identity. In creating the Hells Canyon NRA, Congress specifically recognized its unique natural beauty, historical and archeological, recreational, and ecological values. Therefore, management decisions must be based on the land's continuing capability to provide these values rather than on urgency, short-term economics, or short-term needs.

The continued spread of non-native vegetation affects the long-term ability to provide unique recreation, scenic, and ecological values for which it was established (all alternatives).

The continued decline of beaches and shore line affects the long-term productivity of the area by reducing habitat for some species of fish, wildlife and plants; as well as reducing opportunities for some types of outdoor recreation (all alternatives).

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible resource commitments are actions which either deplete a non-renewable resource or disturb another resource to the point it cannot be renewed within 100 years. Examples of irreversible commitments are the disturbance of cultural sites, the loss or destruction of a significant geologic feature, or the loss of critical habitat.

Irretrievable resource commitments are opportunities for resource use lost for a period of time because that resource is being used for some other, generally incompatible, purpose. Examples of irretrievable resource commitments are the loss of developed recreation opportunities in areas where wildlife management is the emphasis or, conversely, the loss of wildlife habitat opportunities in highly-developed recreation areas. Irretrievable commitments may not extend forever, because they can be altered through changes in management direction.

IRREVERSIBLE RESOURCE COMMITMENTS

Standards and guidelines designed to protect resources that could be irreversibly affected are included in all the action alternatives. Nevertheless, the potential for irreversible losses remains and the primary ones are noted below.

Loss of soil and beach resources resulting from onshore and water-based recreation use is an irreversible condition (all alternatives).

Loss of soil and beach resources resulting from fluctuating clear water flows is an irreversible condition (all alternatives).

The use of fossil fuels to manage the river corridor and expended by recreationists getting to and in the river corridor is an irreversible resource commitment (all alternatives). Alternatives encouraging higher levels of visitation and management would cause higher consumption of fossil fuels (Alternatives A, B, and Alternatives D and F in the scenic section).

Contamination of surface and/or groundwater from recreation use is an irreversible commitment that is more likely under alternatives that promote higher levels of recreation use.

IRRETRIEVABLE RESOURCE COMMITMENTS

All seven alternatives contain irretrievable resource commitments. They are unavoidable because it is impossible to manage resources for any purpose without precluding the opportunity to use them for some other purpose. Some of the major irretrievable resource commitments included in the alternatives are listed below.

RECREATION

Managing areas of the river corridor for recreation reduces opportunities to manage them for wildlife or plant habitat.

Managing some portions of the river corridor for developed recreation precludes opportunities to manage them for dispersed recreation.

Managing some portions of the river corridor for some forms of non-motorized recreation precludes opportunities for motorized recreation in those areas and vice versa.

Increasing recreation use levels reduces opportunities for more quiet, remote types of recreation experiences.

FISH/WILDLIFE/PLANT HABITAT

Managing some areas primarily as habitat precludes opportunities for some forms of recreation.

Managing fish habitat to benefit some species reduces opportunities to benefit other species.

WETLANDS

Managing areas as wetland habitat precludes opportunities to manage them for some types of recreation and for species not adapted to wetlands.

ENVIRONMENTAL EFFECTS UNCHANGED BY ALTERNATIVES

Regardless of the alternative, the fluctuating clear water flows and the associated environmental effects would continue as a result of the Hells Canyon Dam complex.

Regardless of the alternative, access to the river corridor through the major portals and trail systems would continue to be available.

Regardless of the alternative, there is the continued potential for naturally occurring wildfire. Occurrence would be random in both time and space.

Regardless of the alternative, fish would continue to inhabit and migrate through the river corridor.

SPECIFICALLY REQUIRED DISCLOSURES

EFFECTS OF ALTERNATIVES ON THREATENED AND ENDANGERED SPECIES AND CRITICAL HABITAT

Regardless of the alternative, protection of listed species would take precedence over any management activities.

The MacFarlane's four-o'clock is the only endangered plant species within the river corridor. No adverse effect on this species is anticipated in any alternative with the prescribed mitigation in Chapter II.

The peregrine falcon and bald eagle are identified as threatened and endangered species, respectively. Neither the peregrine falcon nor the bald eagle is known to nest within the river corridor; neither species would be affected by any alternative.

The sockeye salmon and spring/summer and fall chinook salmon are identified as endangered/threatened, respectively. Effects on these fisheries and their habitats is presented in this chapter under "Environmental Consequences on the Fisheries Outstandingly Remarkable Values".

EFFECTS OF ALTERNATIVES ON PRIME FARM LAND, RANGE LAND, AND FOREST LAND

All alternatives are in keeping with the intent of Secretary of Agriculture Memorandum 1827 (reference analysis file) for protection of prime farm land, rangeland, and forest land. Regardless of the alternative, the wild and scenic river corridor will be managed with a sensitivity to the effects which their management may have on prime lands, whether the prime lands lie within private or public ownership.

ENERGY REQUIREMENTS OF ALTERNATIVES

Alternatives encouraging higher levels of visitation and management would cause higher consumption of fossil fuels (Alternatives A, B, and E, and Alternatives D and F in the scenic section).

EFFECTS OF ALTERNATIVES ON TREATY OR OTHER RESERVED RIGHTS OF INDIAN TRIBES AND INDIVIDUALS

Certain rights and privileges are afforded members of the Nez Perce Tribe by virtue of the 1855 treaty. The treaty states in Article 3, "The exclu-

sive right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places in common with citizens of the Territory; and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horse and cattle upon open and unclaimed land."

All of the alternatives would continue to provide for the rights and privileges afforded tribal members as discussed below:

Taking of Fish. Alternatives with the highest levels of recreation access and use (Alternatives A and B, and Alternatives D and F in the scenic section) would provide relatively easy access for fishing rights and privileges within the river corridor. Alternatives with lower levels of recreation access and use (Alternatives C and E, and Alternatives D and F in the wild section) would continue to provide access for taking of fish but at reduced levels and/or limited modes of access, although it is anticipated there would be more fish available for taking.

Hunting. Alternatives with the highest levels of recreation access and use (Alternatives A and B, and Alternatives D and F in the scenic section) would provide relatively easy access for hunting rights and privileges within the river corridor. Alternatives with lower levels of recreation access and use (Alternatives C and E, and Alternatives D and F in the wild section) would continue to provide access for hunting but at reduced levels and/or with limited modes of access, although it is anticipated there would be more game available for taking.

Gathering Roots and Berries. Alternatives with the highest levels of recreation access and use (Alternatives A and B, and Alternatives D and F in the scenic section) would provide relatively easy access for the rights and privileges of gathering roots and berries within the river corridor. Alternatives with lower levels of recreation access and use (Alternatives C and E, and Alternatives D and F in the wild section) would continue to provide access for gathering roots and berries but at reduced levels and/or limited modes of access, although it is anticipated there would be more roots and berries available for gathering.

Pasturing of Livestock on Open and Unclaimed Lands. All of the alternatives would continue to provide for the right and privilege to pasture horses and cattle on open and unclaimed lands. The mode of accessibility and frequency of access would vary based on the recreational levels within the alternatives. Mitigation in Chapter II for all action alternatives would require pastured livestock to follow the guidelines set forth for the protection of identified resources.

To date tribal members have not chosen to exercise this treaty right. Considering the difficulty of managing livestock in the river corridor, it does not appear likely this area would ever be a high priority for use by Tribal members.

EFFECTS OF ALTERNATIVES ON CIVIL RIGHTS, WOMEN, AND MINORITIES

The primary effect of the alternatives on women and minorities would be through changes in job and outdoor recreation opportunities. Job opportunities would vary in terms of Forest Service jobs and contracts for goods and services, and also in terms of local and regional jobs created in response to the level of recreation use prescribed in the alternatives. Forest Service policies ensure employment and contracting opportunities for people without regard to race, color, religion, national origin, sex, age or physical/mental disability. Although these policies would continue under all alternatives, the number of agency and contracting jobs would vary with program emphasis and associated funding levels (see Environmental Consequences on Economics, Chapter IV).

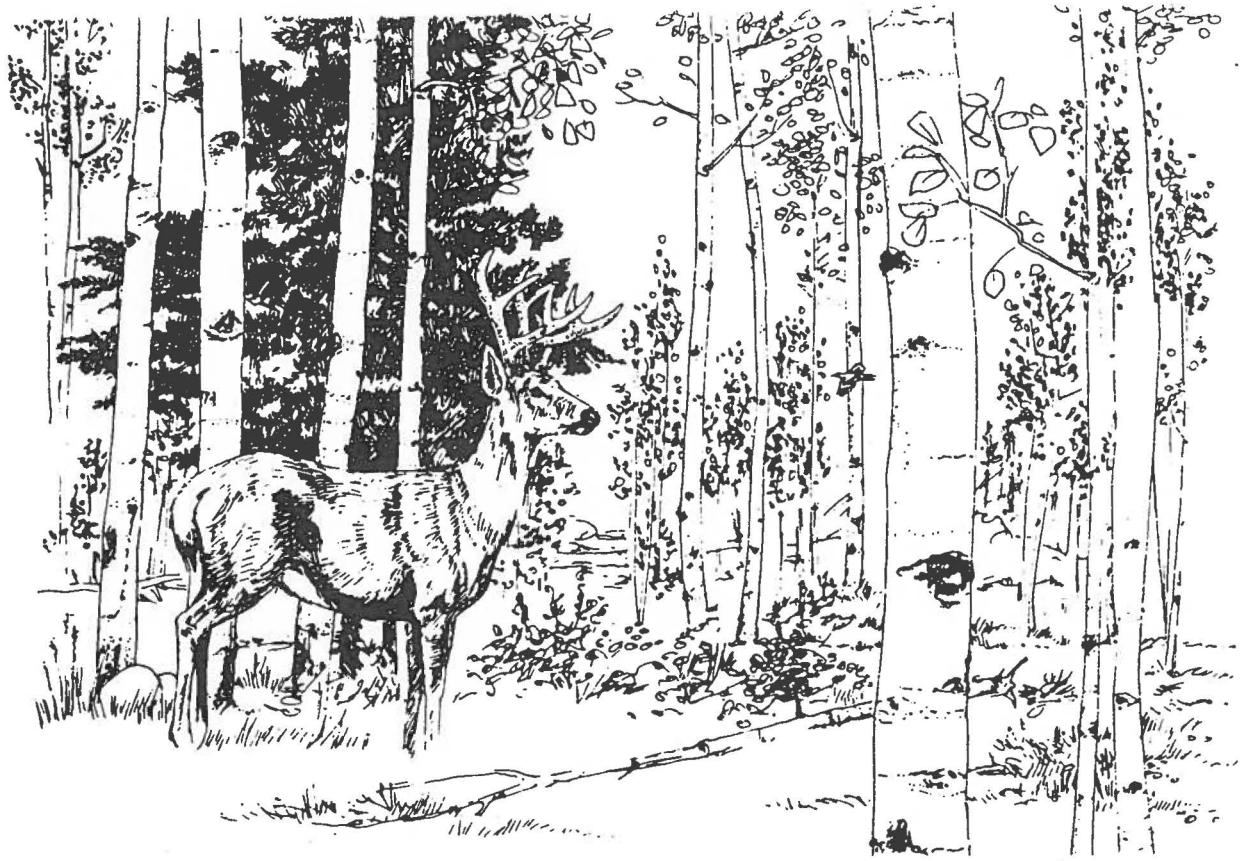
Recreation opportunities on national forest lands are available to people without regard to race, color, religion, national origin, sex, age or physical/mental disability. The types, amounts, and locations of various recreation opportunities within the river corridor would vary depending on the alternative implemented (See Environmental Consequences on the Recreation Resource ORV, Chapter IV).

EFFECTS OF ALTERNATIVES ON WETLANDS AND FLOODPLAINS

Executive Orders 11990 and 11988 require protection of wetlands and floodplains, respectively. An inventory of riparian habitats of the Snake River by the Army Corps of Engineers (1976) did not disclose the presence of wetlands in the wild or scenic sections of the Snake River as defined in FSM 2527.05-8. The U. S. Fish and Wildlife Service's National Wetlands Inventory classifies the wild and scenic portion of the Snake River as an upper perennial riverine system with a rocky shore either seasonally or permanently flooded. To preserve natural and beneficial values of the floodplain, loss or destruction must be minimized. Potential for damage to the floodplain is from fire and grazing.

In all of the alternatives, there is a potential for wild fire which may directly damage the floodplain by removing vegetation which provides protection during flood events.

Recreational and domestic livestock grazing may affect the floodplain through trampling and removing vegetation, exposing soil to erosion, or compacting soil which reduces water absorption. The potential for adverse effects from recreational use of livestock is diminished in Alternatives C, D, E, F and G where party sizes, stay lengths, and selected campsite management through stock control is proposed.



GLOSSARY

Many of the definitions in this glossary can be referenced in the sources listed below. The numbers in parentheses appear at the end of some definitions, indicating their source. Many other definitions are not referenced, but are those in general use within the Forest Service. In an effort toward brevity, those terms which are adequately defined in a typical dictionary are not included in this glossary.

Source List

(1) 36 CFR 219 National Forest Management Act Regulations
(2) Regional Guide for the Pacific Northwest Region, 1984.
(3) SAF Dictionary of Forestry Terms, 1971.
(4) Wildland Planning Glossary, 1976.
(5) Wildlife Habitats in Managed Forests, The Blue Mountains of Oregon and Washington, 1979.
(6) Forest Service Manual or Forest Service Handbook.

Allocation - See **resource allocation.**

Allotment - See **range allotment**

Alternative - One of several policies, plans, or projects proposed for decision making. (2) (6)

Anadromous fish - Those species of fish that mature in the sea and migrate into streams to spawn. Salmon, steelhead, and sea-run cutthroat trout are examples.

Analysis file - A file containing records of the scoping and analysis process conducted in the preparation of a NEPA document. The file is typically stored at the Forest Service office from which a final decision is issued.

Best management practices - A practice or combination of practices that is determined by a State (or designated area-wide planning agency) after problem assessment, examination of alternative practices, and appropriate public participation, to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals (Federal Register, Volume 40, No. 230 dated 11/28/75).

Bureau of Land Management (BLM) - An agency within the Department of the Interior, with land management responsibility for the Public Domain lands.

Capital investment - (A) An input that increased the stock of natural or manmade resources (assets) needed to maintain or increase the flow of outputs in the future. Benefits resulting from capital investments are normally recouped in excess of 1 year; (B) activities that create or improve capital assets to obtain benefits occurring during several planning periods. (6)

Code of Federal Regulations (CFR) - A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. (1)

Congressionally classified and designated areas - Areas that require congressional enactment for their establishment, such as National Wildernesses, National Wild and Scenic Rivers, and National Recreation Areas.

Council of Environmental Quality (CEQ) - An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters. (Abstracted from the National Environmental Policy Act of 1969, as Amended.)

Cultural resource - The remains of sites, structures, or objects used by humans in the past--historic or prehistoric. (2)

Cumulative effects or impacts - Cumulative effect or impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7 - these regulations use effects and impacts synonymously.)

Current direction - The existing direction in approved management plans; continuation of existing policies, standards and guidelines; current budget updated for changing costs over time; and, to the extent possible, production of current levels and mixes of resource outputs.

Desired future condition (DFC) - A portrayal of the land or resource condition which are expected to result if goals and objectives are fully achieved. (1)

Developed recreation - Recreation that requires facilities that, in turn, result in concentrated use of an area. Examples of developed recreation areas are campgrounds and ski areas; facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, ski lifts, and buildings. (2)

Dispersed recreation - A general term referring to recreation use outside developed recreation sites; this includes activities such as scenic driving, hiking, backpacking, hunting, fishing, snowmobiling, horseback riding, cross-country skiing, and recreation in primitive environments. (2)

Diversity - The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan. (1) (2)

Draft environmental impact statement (DEIS) - The draft statement of environmental effects which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review. (4)

Drop Camp - Transportation of a non-boating party, by powerboat, to a river campsite for recreational purposes.

Economic impacts -

> **Direct economic impact** - Effects caused directly by forest product harvest or processing or by forest uses. (6)

Indirect economic impact - Effects that occur when supporting industries sell goods or services to directly affected industries. (6)

Induced economic impact - Effects that occur when employees or owners of directly or indirectly affected industries spend their income within the economy. (6)

Edge - An area where plant communities meet or where successional stages or vegetation conditions within the plant communities come together. (2)

Effects - Environmental changes resulting from an action. Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in the DEIS are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social, or healthy effects, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial. (40 CFR 1508.8, 2)

Endangered species - Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act. (4)

Environmental analysis - A comprehensive evaluation of actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions. (2)

Environmental impact statement - A statement of the environmental effects of a proposed action and alternatives to it. It is required for major federal actions under Section 102 of the National Environmental Policy Act (NEPA), and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agency responsible for the project proposal. (4)

Final environmental impact statement (FEIS) - The final version of the statement of environmental effects required for major federal actions under section 102 of the National Environmental Policy Act. It is a revision of the draft environmental impact statement to include public and agency responses to the draft. (4)

Forest Service Handbook (FSH) - For Forest Service use, directives that provide detailed instructions on how to proceed with a specialized phase of a program or activity. (6)

Forest Service Manual (FSM) - A system of manuals which provides direction for Forest Service activities.

HCNRA - Hells Canyon National Recreation Area.

Historic site - Site associated with the history, tradition, or cultural heritage of national, state, or local interest, and of enough significance to merit preservation or restoration. (4)

ID team - See **Interdisciplinary team**.

Impacts - See **effects**.

Impact, economic, direct - Impacts, caused directly by forest product harvest or processing, or forest uses.

Impact, economic, indirect - Impacts that arise from supporting industries selling goods or services to directly-affected industries.

Impacts, economic, induced - Impacts resulting from employees or owners of directly or indirectly-affected industries spending their income within the economy.

Indicator species - See **management indicator species**.

Inholding - Privately-owned land inside the National Forest boundary.

Interdisciplinary team (ID team) - a group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem. (4)

Issue - A point, matter, or question of public discussion or interest to be addressed or decided through the planning process. (2)

Jetback - Upriver transportation of a float party, by powerboat, to a takeout location.

Jetout - Downriver transportation of a float party, by powerboat, to a takeout location.

Kicker - A small horsepower engine, equipped with a propellor and mounted on a raft or other floatcraft, used primarily for downstream steerage. Kickers are used for traveling through long stretches of flat water or as an aid to offset upstream winds while traveling downstream.

Landform - An area of land that is defined by its particular combination of bedrock and soils, erosion processes and climatic influences.

Land use allocation - The commitment of a given area of land or a resource to one or more specific uses -- for example, to campgrounds or wilderness. (4)

Management area - An area with similar management objectives and a common management prescription. (1) (6)

Management direction - A statement of multiple use and other goals and objectives, and the associated management prescriptions, and standards and guidelines for attaining them. (1)

Management indicator species - A species selected because its welfare is presumed to be an indicator of the welfare of other species using the same habitat. A species whose condition can be used to assess the impacts of management actions on a particular area. (5)

Mitigation - Mitigation includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and, (e) compensation for the impact by replacing or providing substitute resources or environments. (40 CFR Part 1508.20)

Mitigation measures - Actions to avoid, minimize, reduce, eliminate, or rectify adverse impacts of management practices.

Monitoring and evaluation - The periodic evaluation of Forest Plan management practices on a sample basis to determine how well objectives have been met.

National Environmental Policy Act (NEPA) of 1969 - An Act to declare a national policy which will encourage productive and enjoyable harmony between humankind and the environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, to enrich the understanding of the ecological systems and natural resources important to the nation, and to establish a Council on Environmental Quality. (The Principal Laws Relating to Forest Service Activities, Agriculture Handbook No. 453, USDA, Forest Service, 359 pp.)

National Forest Land and Resource Management Plan - A Plan which "...shall provide for multiple use and sustained yield of goods and services from the National Forest System in a way that maximizes long-term net public benefits in an environmentally sound manner." (1)

National Forest Management Act (NFMA) - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of Regional Guides and Forest Plans and the preparation of regulations to guide that development.

National recreation trail - Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the National system of trails authorized by the National Trails System Act. National Recreation Trails provide a variety of outdoor recreation uses. (4)

National Register of Historic Places - A listing (maintained by the U.S. National Park Service) of areas which have been designated as being of historical significance. The Register includes places of local and state significance as well as those of value to the nation. (4)

Nonpoint source pollution - Pollution whose source is general rather than specific in location. It is widely used in reference to agricultural and related pollutants -- for example, production of sediments by logging operations, agricultural pesticide applications, or automobile exhaust pollution. (4)

Noxious weeds - Undesirable plant species that are unwholesome to the range or to animals. (4)

Objective - A concise, time-specific statement of measurable planned results that responds to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals. (1)

Operational plan - A document approved by the Forest Supervisor which specifies at the project level, implementation of the management direction established in the Forest Plan. (4)

Passerines - Small or medium-sized perching songbirds; more than half of all birds belong to this group.

Permittee - Any person or business formally allowed to graze livestock on the land of another person or business (e.g., on state or federal land). (3)

Planning criteria - Criteria prepared to guide the planning process. Criteria applied to collection and use of inventory data and information, analysis of the management situation, and the design, formulation, and evaluation of alternatives. (1)

Prehistoric site - An area which contains important evidence and remains of the life and activities of early societies which did not record their history.

Primitive recreation - Those types of recreation activities associated with unroaded land -- e.g., hiking, backpacking, cross-country travel. (4)

Project - An organized effort to achieve an objective identified by location, timing, activities, outputs, effects, and time period and responsibilities for executions. (6)

Range allotment - An area designated for use by a prescribed number and kind of livestock under one management plan. (4)

Range allotment management plan (AMP) - An approved plan for managing a range allotment resulting in resolution of resource conflicts including riparian areas. Resource damages may still be occurring; however, the action items identified in the AMP are expected to stop resource damage or resolve resource conflicts over time.

Raptors - Predatory birds, such as falcons, hawks, eagles, or owls.

Record of Decision - A document separate from but associated with an Environmental Impact Statement which states the decision, identifies all alternatives, specifying which were environmentally preferable, and states whether all practicable means to avoid environmental harm from the alternative have been adopted, and if not, why not. (40 CFR 1505.2)

Recreational capacity - The number of people that can take advantage of the recreation opportunity at any one time without substantially diminishing the quality of the experience or the biophysical resources. (2)

Recreational opportunity - The availability of choices for users to participate in the recreational activities they prefer within the settings they prefer.

Recreation Opportunity Spectrum (ROS) - A framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities,

and opportunities for obtaining experiences have been arranged along a continuum or spectrum divided into seven classes: Primitive, Semiprimitive Nonmotorized, Semiprimitive Motorized, Roaded Modified, Roaded Natural, Rural, Urban.

Redd - Nest in gravel of stream bottom where fish deposit eggs.

Regulations - Generally refers to the Code of Federal Regulations, Title 36, Chapter II, which covers management of the Forest Service. (2)

Research natural area (RNA) - An area set aside by a public or private agency specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes. In USDA Forest Service usage, Research Natural Areas are areas designated to ensure representative samples of as many of the major naturally-occurring plant communities as possible. (4)

Resource - Anything which is beneficial or useful - be it animal, vegetable, mineral, a location, a labor force, a view, an experience, etc. Resources, in the context of land use planning, thus vary from such commodities as timber and minerals to such amenities as scenery, scenic view points, or recreation opportunities. (4)

Resource allocation - The action of apportioning the supply of a resource to specific uses or to particular persons or organizations. (4)

Riverine - On or near the banks of a river; riparian.

Scenic river areas - See **wild and scenic river.**

Scoping process - A part of the National Environmental Policy Act (NEPA) process; early and open activities used to determine the scope and significance of the issues, and the range of actions, alternatives, and impacts to be considered in an Environmental Impact Statement. (40 CFR 1501.7)

Sensitive species - Plant or animal species which are susceptible or vulnerable to activity impacts or habitat alternations. Those species that have appeared in the Federal Register as proposed for classification or are under consideration for official listing as endangered or threatened species, that are on an official State list, or that are recognized by the Regional Forester as needing special management to prevent placement on Federal or State lists. (2)

Standards and guidelines (S&G) - Principles specifying conditions or levels of environmental quality to be achieved.

Threatened species - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. (See also **endangered species.**) (2)

Tiering - Refers to the coverage of general matters in broader environmental impact statements (such as the Forest Plan) with subsequent narrower statements or environmental analyses (such as the Comprehensive Management Plan, or ultimately, site-specific statements) incorporating, by reference, the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. (40 CFR 1508.28)

Wild and scenic river - Those rivers or sections of rivers designated as such by congressional action under the 1968 Wild and Scenic Rivers Act, as supplemented and amended. Within this document the following classifications are used:

> **Wild river areas** - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.
>
> **Scenic river areas** - Those rivers or sections of rivers that are free of impoundments, with watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
>
> **Study river areas** - Those rivers formally designated by Congress to be studied under Sections 5(a) and 5(b) of the Wild and Scenic Rivers Act.

Wilderness - Areas designated by congressional action under the 1964 Wilderness Act. Wilderness is defined as undeveloped federal land retaining its primeval character and influence without permanent improvements or human habitation. Wildernesses are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature with the imprint of human activity substantially unnoticeable; have outstanding opportunities for solitude or a primitive and unconfined type of recreation; are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest. (2)

Xeric - A dry soil moisture regime. Some moisture is present but does not occur at optimum levels for plant growth. Irrigation or summer fallow is often necessary for crop production. (3)

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