APPENDIX J

Native Ecosystem Alternative

Appendix J

NATIVE ECOSYSTEM ALTERNATIVE

for the
Hells Canyon Comprehensive Management Plan
Environmental Impact Statement

Prepared and submitted by
Hells Canyon CMP Tracking Group
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ACRONYMS

DFC	Desired Future Condition
HCNRA	Hells Canyon National Recreation Area
HCNRA "special species" =	Native endangered, sensitive, threatened, indicator, rare, endemic, or declining species
RNA	Research Natural Area

NATIVE ECOSYSTEM ALTERNATIVE

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NATIVE ECOSYSTEM ALTERNATIVE: OVERVIEW

We are not living on land given to us by our parents; we are living on land lent to us by our children.

--Kenyan saying

Goal NEA-G1

The Hells Canyon NRA will thrive as a healthy native ecosystem that is an integral component of a larger native bioregion.

Section 7 (1-7) of the HCNRA Act will be implemented, with priority given, as mandated, to Section 7(1-6). Human activities will be managed on the basis of the native ecosystem processes and natural ruggedness of this area. Human intervention, habitual uses, and expectations will be subject to compatibility with Section 7(1-6) of the HCNRA Act.

Human activities will be undertaken with no adverse impact or least adverse impact so as to allow HCNRA native ecosystems to function and recover as naturally as possible.

Goals, objectives, and standards and guidelines (G/O/SGs) will be based on ecosystem protection, and maximum feasible recovery and health rather than on risk-based management for minimal wildlife and ecosystem values. Goals, objectives, standards and guidelines, and monitoring requirements will be stated in objective, measurable terms so that activities and human users can be held accountable to the goals.

All human activities that pose a potential for an adverse impact on HCNRA native ecosystems will be continued only if they are publicly monitored for compatibility with Section 7(1-6) of the HCNRA Act, on a stated schedule (Note 1). ***Modified 4/2/99***

Standard NEA-S1

Each alternative proposed in an Environmental Assessment or an Environmental Impact Statement will be accompanied by a description of the monitoring activities and schedule that will be necessary to insure, on an ongoing basis, compatibility of the activities proposed in that alternative with Section 7(1-6) of the HCNRA Act. In addition, an estimate of the costs that will be necessary to carry out the monitoring for that alternative's compatibility will be provided. Those alternatives with greater potential to be incompatible with Section 7(1-6) will generally entail more intensive and expensive monitoring. In this way, the ecosystem "costs" of particular alternatives will be partially internalized.

Notes for Native Ecosystem Alternative Overview

1. Clearly, the HCNRA Act requires monitoring, if the Forest Service is to insure that activities and proposed activities are in fact compatible with section 7(1-6) of the HCNRA Act. However, without the above Goal which disallows the continuation or permitting of activities in the absence of scheduled monitoring, the Forest Service has essentially no incentives, and considerable disincentives, to monitor. In particular, this is because (1) monitoring is a monetary "cost" burden to a tight budget; and (2) monitoring often reveals and documents ecological conditions of concern, which requires adjustment or elimination of habitual, permitted, or preferred practices.

The costs of monitoring must therefore be internalized as a cost of commercial and recreational human activities within the HCNRA, and the costs will generally be higher for those activities for which evidence exists of higher potential for ecological damage. This should, properly, provide an incentive to select the no impact or least impact alternative for any given proposed human activity.

HELLS CANYON NRA MANAGEMENT AREAS

In general, the trend of the evidence indicates that in land, just as in the human body, the symptoms may lie in one organ and the cause in another.

Aldo Leopold, *The Sand County Almanac* (1949)

Goal NRA-G1

To meet the goals of the HCNRA Act regarding ecosystem processes, management areas will be those presented by the major Hells Canyon ecosystems: Forest, Grassland, and Riparian. Management of human activities will be planned for within the basic needs of these areas. The three ecosystems of course intergrade with each other, providing structural, functional, and species diversity and mosaics of a natural scale: A grassland scab patch or grass sward understory will be present in forest habitat; a clump or grove of trees will be located in grassland habitat, and riparian and aquatic habitats are located within and central to both grassland and forest habitat. [Note: Other ecosystem-based management areas such as watersheds could similarly be used. The native ecosystem alternative employs "forest, grassland, and riparian" as one useful ecosystem-based delineation of management areas.]

The health of HCNRA land, water, and wildlife is interdependent with the health of the total bioregion. ** *Goal Modified 4/20/99* **

Management of micro-habitats within the three general habitat areas will only mean some adjustments to the management for protection and recovery of forest, grassland, or riparian habitat.

Objective NRA-01

Draw the basic HCNRA management areas to approximate the predominantly forested areas, predominantly grassland (or non-forested) areas, and major riparian/aquatic areas. Except as contradicted by on-site information, streamside management zones are 300 feet on each side of perennial streams and 150 feet surrounding all other riparian areas (i.e., all springs, seeps, and wetlands, and on each side of seasonal streams which generally flow for more than one month annually, and which retain distinctly riparian vegetation). The extent of riparian habitat at a given site (e.g., presence of riparian vegetation and/or riparian-associated wildlife, banks or other topography) may necessitate recognition of larger or smaller riparian areas at specific sites.
Modified 4/20/99

Objective NRA-02

Incorporate into decisionmaking the reality that human activities and uses permitted at some level by the CMP have multiple and cumulative impacts on the three major HCNRA ecosystems and the bioregion.

Standard NRA-S1

Each alternative considered for proposed human activities and uses in the HCNRA will be characterized as to potential contribution to existing and foreseeable adverse and beneficial impacts on the three major HCNRA ecosystem areas and the bioregion, in light of other past, present, and foreseeable human activities and uses.

Standard NRA-S2

Monitoring of all human activities within the HCNRA and on private lands within the HCNRA boundaries will document effects on all related HCNRA management areas.

Notes for Monitoring

1. In the past, HCNRA planning has been based on maps of human recreational and commercial uses. Native wildlife, vegetation, and ecosystem processes are necessarily then planned and mitigated for on a subordinate basis to these human activities, and developments. This is inconsistent with HCNRA Act 7(1-6).

The Congressional designations of Wilderness and Wild and Scenic Rivers do not interfere with recognition of the HCNRA as integrated ecosystems, because they allow for the highest possible ecosystem protection, given human access.

ACCESS AND FACILITIES

In short, the very scarcity of wild places, reacting with the mores of advertising and promotion, tends to defeat any deliberate effort to prevent their growing still more scarce.

It is clear without further discussion that mass use involves a direct dilution of the opportunity for solitude; that when we speak of roads, campgrounds, trails, and toilets as 'development' of recreational resources, we speak falsely in respect of this component. Such accommodations for the crowd are not developing (in the sense of adding or creating) anything. On the contrary, they are merely water poured into the already-thin soup.

Aldo Leopold, *A Sand County Almanac* (1949)

A road is a dagger placed in the heart of wildness.

Justice William O. Douglas

Goal Acc-G1 (See Access note 1)

Opportunities for diverse outdoor recreation experiences will be provided while protecting natural, ecological, and historical Native American and non-Native American sites and resources; and retaining and restoring the rustic character, challenging access, and backcountry atmosphere that have defined and partially protected the HCNRA in the past.

The HCNRA will not attempt to duplicate motorized access and facilities that are present in abundance throughout the vast majority of commercial and urban lands in the region.

Access and facilities will reflect the natural attributes of the canyon and will allow the natural features to dominate usage. The canyon will not be modified to meet user expectations, but rather users will modify their uses to meet existing challenges.
Human facilities will be maintained at an absolute minimum (specifically to avoid damage to the ecological systems within which they are contained) and as compatible with primitive and wild values.

Specific sections of backcountry area and associated ecological attributes will be protected and restored by reducing or eliminating certain accommodations for motorized use (see Access note 2).

Objective Acc-O1

Complete a study that proposes options and the feasibility of alternative means and routes of transportation, including public transport and non-motorized means and least vehicle numbers.

Guideline Acc-Gu1

Prepare public education and visitor materials, including maps, that articulate the potential and desirability of non-motorized transportation within the HCNRA, e.g., opportunities to view and hunt wildlife; and experience natural sounds, solitude, and relief from urban noise and speed.

Standard Acc-S1

Establish a baseline of existing launches, roads, trails, trailheads and facilities. An annual inventory will be compared to this baseline to assure that motorization within the HCNRA is consistent with goals.

Standard Acc-S2

Meaningful indicators of human use will be recorded through year-round electronic monitoring of particular motorized access routes and by meaningful annual sampling of use of non-motorized access routes. Maximum use of volunteers will be pursued for the non-electronic sampling.

Guideline Acc-Gu2

Draft wildlife, vegetation, and social indicators of "overcrowding" of HCNRA area within two years of enactment of the new CMP. Use resulting indicators (completed by third year) for determining when motorized access shall be transformed to non-motorized access; and when permit systems shall be introduced.

Standard Acc-S3

Prepare a protocol for measuring key ecosystem/wildlife species indicators that would show these species and ecosystems are not being negatively impacted from use of specific roads and tourist facilities. This is necessary to issue annual findings of compatibility of motorized access and facilities with HCNRA Act 7(1-6).

Guideline Acc-Gu3

Supervise an annual volunteer-implemented survey of closed (but not obliterated) roads in order to document signs of motorized use of closed roads. Use the annual survey documentation to develop an action plan for dealing with closure failures.

Objective Acc-02

Access itself will not be a priority, but when human impact dictates that protection of resources is necessary, non-motorized access will act as a default in keeping with the philosophy of meeting Hells Canyon on its own terms.

Objective Acc-03

Prevent human overcrowding, to the extent possible, by avoiding expansion of facilities.

Standard Acc-S4

If overcrowding occurs, give priority to dispersion by user choice (i.e., people will naturally move to other areas in the NRA or choose not to visit the more crowded areas).

Standard Acc-S5

If overcrowding continues, examine access for its contribution to the overcrowding. If motorized access is contributing to the overcrowding, transform motorized access to non-motorized access before establishing a permit system to reduce overcrowding.

Standard Acc-S6

If user choice and restriction to non-motorized access are not sufficient to reduce overcrowding, introduce permit systems as necessary to protect the ecosystem and wildlife habitat.

Guideline Acc-Gu4

Access will be the responsibility of the user, to the extent possible.

Standard Acc-S7

No new trails will be created other than by closing a road. Trail improvements and maintenance will not occur except where needed to prevent resource damage.

Standard Acc-S8

Establish the Hells Canyon Wilderness Rim Trail with two segments (1) between P.O. Saddle and Hat Point Road; and (2) between Warnock Corral and Lord Flat. This trail will provide the public with a foot and horseback trail along the western rim of Hells Canyon, apart from motorized travel.

Guideline Acc-Gu5

Trailheads may be constructed, if necessary, at roads scheduled for closure and use as trails, where they connect with open roads.

Standard Acc-S9

No new roads will be constructed. Present roads will not be widened. If roads are resurfaced, that resurfacing will not push them to a higher level (e.g., from collector to arterial), but will keep them at the same general class and maintenance level. No previously closed roads will be reopened.

Guideline Acc-Gu6

Where roads cut into springs (i.e., bring springs to the surface), consider the feasibility of reintroducing water into the aquifer system.

Objective Acc-O4

Maintain facilities at a minimum level.

Standard Acc-S10

Parking impacts at trailheads will be concentrated in gravel parking lots. Trailheads will consist only of gravel parking lots, necessary signs, and, if needed, minimal restroom facilities.

Objective Acc-O5

Provide motor vehicle access to HCNRA scenic, hunting, and recreational settings on primary use roads while closing and, in some cases, obliterating roads that are detrimental to native ecosystem goals (see Access Note 3). Convert closed and obliterated roads to wildlife forage and trails where applicable and where soil and stream protection can be enhanced.

Standard Acc-S11

Motor vehicles will remain on open roads with the exception of minimal incursions (less than 20 yards) onto the side of the road for dispersed camping, except in areas posted sensitive for native plant or other ecosystem features.

Guideline Acc-Gu7

Continue road maintenance to reduce sedimentation, erosion, and potential road failures will continue on open roads.

Standard Acc-S12

Reduce overall road density to no more than one mile of road per square mile of relevant habitat (e.g., calculation of road density on the Hells Canyon rim must not include steep slope acreage, as it is level ground that is in short supply in the HCNRA and provides critical habitat for particular wildlife species; see Access note 2). Determine which roads are unnecessary and establish a priority schedule for eliminating these roads from the transportation network.

Guideline Acc-Gu8

Through ground-based watershed analysis, determine how each road in the watershed affects the ability to meet aquatic and terrestrial conservation strategy objectives. Prioritize reconstruction, obliteration, and closing and stabilizing of roads other than those listed in Standard Acc-16 and 18 according to current and potential impact to riparian, aquatic, and terrestrial resources and based on the ecological value of the resources affected.

Guideline Acc-Gu9

Through ground-based watershed analysis, inventory all existing culverts, bridges and other stream crossings and evaluate the potential risk each stream crossing poses during major storm events. Prioritize upgrades, closures, or obliterations according to the potential impact to riparian and aquatic resources, and based on the ecological value of the resources affected.

Standard Acc-S13

When a decision is made to eliminate a road, the roadbed shall usually be obliterated and the original contours of the land restored. If this is not feasible, the road shall be closed and all actions that would be expected to reduce road- and landing-relatedsediment delivery to aquatic systems shall be taken (such as culvert removal, waterbar construction, or seeding with native vegetation).

Standard Acc-S14

Existing spur tracks or roads that stem from road closures may be open to motor vehicle use up to 1/4 mile from the main road for the purpose of accessing dispersed campsites within 20 yards of the spur road. These tracks or roads will not be improved and will only be open if resource damage does not occur from motorized use.

Standard Acc-S15 Open roads on the Idaho side will include:

1. Windy Saddle Road (2 miles within the HCNRA), which runs to the east rim of the canyon on the edge of the Seven Devils Mountains. This road provides access to Seven Devils Campground, the Boise Trailhead and Heaven's Gate Lookout.

2. Pittsburg Landing Road (5 miles within the HCNRA), which runs from the east rim at Pittsburg Saddle to the Snake River. This road accesses the campground, boat launch facility and trailhead on the Snake River.

Additionally, Roads 420 and 672 on Nez Perce National Forest land traverse the east rim of Hells Canyon along the HCNRA boundary.

Standard Acc-S16

Specific road closures/removals on the Idaho side intended to restore backcountry and fish and wildlife habitat, and prevent erosion, creek sedimentation and other resource damage will include (see Access note 4):

1. Black Lake Road at the HCNRA boundary. The W-WNF shall work with the Payette NF to locate a trailhead on Payette NF land that will service hikers and equestrians seeking to travel to Black Lake.

2. The 2060 Road complex from Wickiup Butte, and Cold Springs Cow Camp

3. Kirkwood Road at Cow Creek Saddle

4. Dixon Corrals Road at Dixon Corrals

5. All unimproved spur roads off the Pittsburg Road from Pittsburg Saddle to the lower landing. Close the road from the main Pittsburg Road to the upriver trailhead; obliterate and rehabilitate to a natural setting the road that passes close to the petroglyph site. Relocate the road to its former location one-quarter mile east of the existing paved road, and maintain only for administrative purposes (e.g., to access the fuel tanks and Circle C ranch) and to drop off horses and equipment at the trailhead. The picnic and camp site at the upriver trailhead can be accessed by foot or boat from the lower Pittsburg Landing.

Standard Acc-S17

Open roads on the Oregon side will include:

1. Wellamotkin Road (14 miles within the HCNRA), traversing the north end of the HCNRA along the Snake River/Chesnimnus Creek Divide. It provides access to Dougherty and Buckhorn Springs Campgrounds.

2. Buckhorn Lookout Road (1 mile), which stems from the Wellamotkin Road, accessing Buckhorn Springs Campground and Buckhorn Lookout.

3. Cold Springs Ridge Road (13 miles within the HCNRA), going north toward the Washington State line from Wellamotkin Road and providing a link between the north end of the HCNRA and the Grande Ronde River.

4. Dug Bar Road (21 miles within the HCNRA; whose use will be analyzed in a separate EA), which runs from the town of Imnaha to the Snake River at the site of the Dug Bar Unit of the Nez Perce National Historic park.

5. Hat Point Road (22 miles, whose use will be analyzed in a separate EA), which runs from the town of Imnaha to the rims of both the Imnaha and Snake River canyons.

6. Imnaha River Road 948 miles) which accesses private land along the Imnaha River above the town of Imnaha and travels to the Eagle Cap Wilderness.

7. Freezeout Creek Road (3 miles) which stems from the Imnaha River Road.

8. Wallowa Mountain Loop Road (36 miles within the HCNRA) is a national scenic byway, and is the main summer/fall link between the town of Halfway and the Wallowa Valley.

9. McGraw Road (13 miles). Part of this road provides paved access to and along McGraw Creek Canyon near the west rim of Hells Canyon; it accesses Overlook I and McGraw Lookout and Drop Off View [?] and P.O. Saddle Campgrounds.

10. Dry Creek Road (6 miles) which runs down to the Wallowa Mountain Loop Road from the McGraw Road.

11. Duck Creek Road (9 miles) which stems from the Wallowa Mountain Loop Road. It is part of a loop road from halfway that connects with the Fish Lake Road.

12. Hells Canyon Creek Road (1 mile within the HCNRA) is accessed by the road to Hells Canyon Dam from Highway 71 at Oxbow. It provides access to the Hells Canyon Creek launch site below Hells Canyon Dam.

Additionally, roads bordering the HCNRA on adjoining ranger districts such as the Fish Lake Road and Jaynes Ridge Road will provide motorized access.

Standard Acc-S18

Specific road closures/removals on the Oregon side intended to restore backcountry and fish and wildlife habitat, and prevent erosion, creek sedimentation and other resource damage will include (see Access note 4):

1. Lord Flat Road at Old Memaloose Guard Station *[Note: Current trailhead at the Warnock Corral is in the Hells Canyon Wilderness]*

2. Road 3965 at Campground near P.O. Saddle

3. Tepee Butte Road

4. Wildhorse Spring Road

5. Jim Creek Road

6. Cache Creek Road

7. Deadhorse Ridge Road

8. Cherry Creek Road (except, on a case-by-case basis, for essential administrative or wildlife restoration purposes)

9. Cemetery Ridge Road

10. All spur roads stemming from Hat Point Road not necessary for private land access

11. All spur roads stemming from Dug Bar Road not necessary for private land access

12. All HCNRA spur roads off Wellamotkin Road, except Buckhorn Lookout Road and Cold Springs Ridge Road

13. All spur roads between McGraw Lookout Road and the junction of Road 3965 with Road 39, except Road 3962

14. The McGraw Lookout Road beyond McGraw Lookout

15. All spur roads stemming from the Lick Creek/Coverdale Road

16. All unimproved and/or spur roads stemming from the Wallowa Mountain Loop Road.

17. All spur roads stemming from the Duck Creek/Fish Lake Road

18. Little Fall Creek Road

19. Little Elk Creek Road

Standard Acc-S19

Initiate a study through an environmental assessment that will fully analyze the economic, social, and ecological effects of, and make specific recommendations for the Dug Bar Road from Cow Creek Bridge to Dug Bar, and the Hat Point Road and all its spurs from the town of Imnaha. Reasonable access to private lands beyond the closure points will be maintained regardless of what the recommendations of the study are. The study recommendations may include (but not be limited to) leaving all or part of these roads open, seasonal closures, special permits, or public transportation.

Standard Acc-S20

Roads closed but not obliterated may be used for firefighting when no alternative fire suppression activities will meet the firefighting objectives. Such roads will not be improved during the firefighting effort. In setting firefighting strategies considering use of closed roads, it will not be assumed that roads are necessary to fight wildlfires since aerial initial attack is the preferred and most effective method.

Standard Acc-S20

Where gates or tank traps are necessary to close a road, provide an interpretive sign at such a road closure explaining the type of usage allowed and the goals of the road closure.

Guideline Acc-Gu10

Roads that are closed but not removed or camouflaged will be posted with interpretive signs to explain the type of usage allowed and the goals of the road obliteration or closure.

Standard Acc-S21

No roads or motorized trails will be located in or allowed to adversely affect riparian and wetland areas.

Objective Acc-O6

Classify all open HCNRA roads into the following maintenance levels:

ML 5:

Wallowa Mountain Loop Road (#39, including Lick Creek-Coverdale section)

ML 4:

McGraw Road from Road 39 Junction to Overlook I (#3965)

Imnaha River Road from Indian Crossing Campground to Gumboot Creek (#3960)

Hells Canyon Creek Launch Site Road (#454)

ML 3:

Buckhorn Lookout Road (#780)

Freezeout Road from Road 3955 to Freezeout Trailhead (#4230)

Wellamotkin Road (#46)

Fish Lake/Duck Creek Road (#66)

North Fork Dry Creek Road (#3962)

Imnaha River Road from Gumboot Creek to National Forest boundary (#3955)

ML 2:

Dug Bar Road from National Forest boundary to Cow Creek Bridge (#4260)

Dug Bar Road from Cow Creek Bridge to Dug Bar (#4260 - unless EA alters use)

Hat Point Road (#4240 - unless EA alters use)

Cold Springs Ridge Road (#4680)

McGraw Road from Overlook I to Campground at P.O. Saddle (#3965)

Standard Acc-S22

No maintenance level roads created now by users will be recognized in the future.

Notes for Access and Facilities:

1. All attempts to increase ease of access will increase human impact and eventually weaken the health of the land.

Since non-Native-American presence in what is now the HCNRA, roads have been allowed to proliferate and have been constructed for specific human uses, e.g., for logging, moving livestock, firefighting, reaching homesteads, driving quickly to particular recreation spots. Many of these roads are unnecessary for the level of such activities that are compatible with HCNRA Act 7(1-6). This is particularly the case, given the shrinkage in the bioregion of roadless, wild areas. Many roads constructed for specific uses such as logging or reaching homesteads are no longer needed. As well, limiting human access via roads is an integral facet of resource protection and restoration, as well as a cost-cutting measure through reduced maintenance and enforcement costs.

2. Motorized access for physically-challenged people is currently available throughout the HCNRA, along roads, and at such points as Pittsburg Landing, Hells Canyon Creek, Overlook I, and Hat Point. These also include special accommodations at loading docks on the Wild and Scenic Snake River. However, numerous physically-challenged people appreciate the chance to escape the reach of motorized noise and activity and the opportunity to enjoy wild backcountry by non-motorized means.

3. "A road density of approximately 0.6 km/km^2 or 1.0 m/m^2 appears to be the maximum to have a naturally functioning landscape containing sustained populations of large mammals... This apparent threshold is a tentative conclusion or working guideline, since the number of studies available is limited." Forman, RTT, and AM Hersperger. 1996. Road ecology and road density in different landscapes, with international planning and mitigation solutions. In Evink, GL, P Garrent, D Ziegler, and J Berry, eds. Trends in Addressing Transportation Related Wildlife Mortality: Proceedings of the Transportation Related Wildlife Mortality Seminar. Tallahassee, FL: State of Florida Department of Transportation.

4. Roads that have traditionally provided the vast majority of use in the HCNRA will be open to unregulated use and maintained in their present condition. Spur roads stemming from these roads that access trailheads, developed campgrounds and other existing recreation facilities will remain open as will roads on or accessing private land.

All of the proposed closures will help reduce the critical shrinkage of roadless and wild areas in the bioregion, increase the opportunity to experience the HCNRA on its own terms; increase wildlife-viewing and hunting opportunities; eliminate significant roadless area/habitat intrusions; restore backcountry; eliminate wide-open motorized access to every corner of the NRA not Congressionally-designated as Wilderness; increase wildlife security; and reduce poaching and illegal woodcutting.

ATMOSPHERIC HABITAT

Something will have gone out of us as a people if we allow the remaining wilderness to be destroyed and push our roads into the last of the silence.

--Wallace Stegner

Goal Air-G1

The atmospheric habitat of the HCNRA will be maintained, to the greatest feasible extent, as clean air dominated by natural, non-motorized sounds, to the benefit of both humans and atmospheric-dependent wildlife.

Objective Air-O1

Reduce human-caused noise to the furthest extent possible (within the constraints of accommodating motorized access along particular routes), particularly motor-caused noise.

Standard Air-S1

Establish the monitoring parameters and a schedule for measurement of noise, toxics, and particulate pollution of the HCNRA.

Standard Air-S2

Establish decibel-level limits for motorized vehicles operating within the HCNRA based on needs of wildlife, human hearing, wilderness values, and effect of the canyon walls to amplify noise. Reduction of noise will receive priority consideration over speed, power, or numbers.

Objective Air-O2

Eliminate unnecessary, human-caused air pollution within the HCNRA.

Guideline Air-Gu1

When motorized noise or air pollution reach the HCNRA from sources outside the HCNRA, determine the sources and explore, with those causing the pollution or noise, potential alternatives for avoiding such noise and pollution.

Objective Air-O3

Establish a buffer around the Hells Canyon Wilderness such that motorized noises are minimized to avoid intrusion within the wilderness. This includes such measures as eliminating unnecessary motorized use on thewilderness boundary (see, e.g., access standards 16 and 18, which close black lake road at the hcnra boundary, and lord flat road at the memaloose guard station; and wild and scenic river standard 1 which avoids recreational motorized use of the wild snake river); and establishing edecibel and speed limits for motorized recreation (see air standard 2). ***Modified 4/20/99***

Standard Air-S3

For each alternative in proposals for human activities, indicate the estimated increase or decrease in human-caused noise in the project area, and potential effects on HCNRA wildlife (for example, salmon) and wilderness values.

BIOLOGICALLY UNIQUE HABITAT

The disappearance of plants and animal species without visible cause, despite efforts to protect them, and the irruption of others as pests despite efforts to control them, must, in the absence of simpler explanations, be regarded as symptoms of sickness in the land organism. Both are occurring too frequently to be dismissed as normal evolutionary events.

Aldo Leopold, *A Sand County Almanac* (1949)

HCNRA "special species" =

Native endangered, sensitive, threatened, indicator, rare, endemic, or declining species

Goal BUH-G1

The HCNRA as a whole will be recognized as biologically unique habitat, because so much native habitat has been left intact within the HCNRA, and because so much of its habitats have been lost in the bioregion. Its habitat components of native and ancient forests; native, bunchgrass, and perennial grasslands; native riparian habitat; beaches; alpine and steep canyon habitats; and biological corridors and connecting habitat for large and other native wildlife and fish are rare, critical, and/or dwindling within the Columbia River Basin and western Northern Rockies.

Within the HCNRA, particular ecological components comprise additional forms of biologically unique habitat:

1. Habitat for "special" plant and animal species: those native species that are endemic, sensitive, threatened, indicator, rare, endangered, or whose numbers have been in continuing decline within the HCNRA (i.e., "declining"). ***Modified 4/2/99***

2. Certain subpopulations of native species which may be abundant throughout the region, but which are adapted specifically to the HCNRA area (e.g., disjunct populations). ***Modified 4/2/99***

3. Certain high densities, sizes, or ages of specific native plants and animals that are otherwise not rare in the bioregion. ***Modified 4/2/99***

4. Habitat for species of plants and animals that form the basis of the traditional cultures of Tribes indigenous to the region.

The broad biological uniqueness of the HCNRA will serve as a reminder of the custodial, public trust role played by the HCNRA in maintaining crucial ecosystem structures, features, and functions and traditional cultural relationships within the Columbia River Basin and western Northern Rockies.

Specific, threatened biologically unique components of HCNRA habitat (e.g., habitat for endemic, sensitive, threatened, indicator, rare, endangered and declining species, referred to in the Native Ecosystem Alternative as "special species"; or certain ages, adaptations, or sizes of bioregionally abundant species) will serve as a reminder of the unintended adverse consequences that numerous human activities have had on the integrity of the bioregion's native and sensitive ecosystems, species, and populations of plants and animals.

Biologically unique HCNRA habitats and bioregional native ecosystem connectivity that are dwindling within the bioregion will be identified, acknowledged, protected and restored.

Management plans for biologically unique habitat and special species within the HCNRA will be based on habitat recovery and enhancement.

Objective BUH-O1

Identify biologically unique habitat components within the HCNRA.

Objective BUH-O2

Utilizing existing data and scientifically prioritized ground-truthing, prepare a GIS-mapped survey of:

(1) All known special species within the HCNRA, including maps and estimated population numbers; ***Modified 4/2/99***

(2) Adaptations, sizes, ages, or high densities that may be uncommon for a species within the bioregion; and ***Modified 4/2/99***

(3) Plant and wildlife habitats of particular importance to the traditional culture of Tribes indigenous to the bioregion.

Identify significant gaps in existing data and prioritize which information is most crucial and which is most feasible to gather to fill these gaps.

Standard BUH-S1

Prepare a draft inventory (even if only minimally ground-truthed) of all such special species within 2 years of the adoption of this CMP.

Standard BUH-S2

Identify habitat within the HCNRA that could play crucial or significant roles in the restoration of bioregionally-rare species, including, but not limited to wolves, wolverine, lynx, grizzly bears, woodland caribou, martens, peregrine falcons, bald eagles, amphibians, reptiles, salmonids and other fish species, and invertebrates.

Objective BUH-O3

Identify crucial biological connectivity which the HCNRA does or could provide for bioregionally-rare species.

Guideline BUH-Gu1

Prepare for the public a map of the HCNRA which illustrates its role within the bioregion as crucial or significant habitat for bioregionally-rare species. Insure that specific locations of rare plants or animals are not revealed if public knowledge of these locations could threaten the safety of the plants or animals. ***Modified 4/2/99***

Objective BUH-O4

Identify the barriers to and potential for protection and restoration of HCNRA special species and biologically unique habitat component. Identify essential functions and conditions of habitat of HCNRA special species and biologically unique habitat component; and HCNRA activities that may threaten each known HCNRA special species and biologically unique habitat component. Update as new information is gathered.

Standard BUH-S3

Prepare management guides (with goals, objectives, and standards and guidelines) for at least ten HCNRA special species or biologically unique habitat components each year. These guides may be revised at any time in light of new information. They will be renewed every five years.

Standard BUH-S4

Develop measurable indicators of (a) maintenance; (b) recovery; and (c) degradation of HCNRA special species and biologically unique habitat component so that monitoring results can be interpreted objectively. Indicate those features that identify a habitat as being source or sink for special species.

Standard BUH-S5

Identify those uncommon or declining special native species within the HCNRA that could, with restoration of habitat, expand their population numbers, and indicate conditions and actions (or cessation of activities) that would allow this to happen. When proposing an activity (e.g., permit renewal, vegetation management), explicitly consider the potential for expanding the population numbers of any of these species potentially involved.

Standard BUH-S6

No proposed action that may adversely impact soil, water, vegetation, atmospheric habitat, or any other aspect of potential habitat of any HCNRA special species or biologically unique habitat component will be undertaken or permitted in the absence of at least a temporary species management guide for that species within the HCNRA as part of the larger bioregion. ***Modified 4/2/99***

Standard BUH-S7

A proposal to undertake or continue A recreational or commercial activity that has been identified as potentially threatening to biologically unique habitats may not take place if (a) the specified habitat monitoring schedule (e.g., annual or biennial monitoring) has been skipped for more than one reporting period; or b) monitoring results indicate the population or habitat of AN HCNRA special ---species is not being maintained or increased. ***Modified 4/2/99***

Guideline BUH-Gu2

Establish appropriate time intervals for monitoring of each special species and biologically unique habitat component.

Standard BUH-S8

Each alternative for a proposed human activity which could affect vegetation, soil, water, atmospheric habitat, and other wildlife resources will include a discussion of the potential of the activity for degradation, maintenance, or restoration of biologically unique habitat components, HCNRA special species, and bioregionally-rare species.

Guideline BUH-Gu3

Utilize the skills, resources, knowledge, and voluntary efforts of citizens and scientists in appropriate activities to identify, monitor, and protect unique habitat components within the HCNRA.

Guideline BUH-Gu4

Develop procedures for efficiently utilizing volunteers (including students, graduate students, hunters, community residents, retired and other scientists) to inventory and monitor special species and biologically unique habitat components.

Guideline BUH-Gu5

Prepare public education materials for HCNRA users, visitors, schools, and other public programs, which explain why particular HCNRA habitats are considered biologically unique and the potential for protection, restoration, or loss of such habitats and special species within the HCNRA and the bioregion.

Standard BUH-S9

Prepare a public, triennial report on the condition of biologically unique habitat components in the HCNRA, including discussion of degradation or restoration of special species' populations and habitat within the HCNRA. ***Modified 4/2/99***

Standard BUH-S10

Place higher priority on the recovery and enhancement of biologically unique and special species habitats than on specific, permitted commercial and recreational human activities (e.g., livestock grazing, motorized recreation) that may adversely affect such habitats, or which may prevent continuous recovery of the habitats.

Goal BUH-RNA-G1

Manage Research Natural Areas (RNAs) and proposed RNAs to preserve significant natural ecosystems for comparison with those influenced by humans; for provision of ecological and environmental studies, and for preservation of gene pools for declining native plants and animals.

Standard BUH-RNA-S1

Protect proposed RNAs from human-caused disturbance to those elements for which they were proposed. In keeping with the RNA Goal, the human influence of livestock grazing will not be present.

Standard BUH-RNA-S2

Recreation use will be analyzed and reduced as necessary to protect the RNAs in keeping with the RNA Goal.

Guideline BUH-RNA-Gu1

Evaluate the expansion of the research natural area system based on recommendations from establishment records, and/or proposals generated from scientific research, and/or proposals from the Forest RNA Coordinator. Continue the search to add new areas to the system for plant communities and riparian and wetland elements not currently in RNAs or proposed RNAs.

Notes for Biologically Unique Habitat

1. Currently, the U.S. Forest Service Pacific Northwest Research Station in La Grande does not routinely develop management prescriptions. However, a specific request from the HCNRA regarding the advice from biologists at the Experiment Station for management of specific aspects of wildlife habitat could generate useful suggestions from scientists familiar with the ecological conditions present in the HCNRA.

FIRE

Fire alone has rarely destroyed a landscape; evolutionary adaptations have seen to that. But fire and hoof, fire and ax, fire and plow, fire and sword--all magnify the effects by altering the timing of fire, its intensity, the fuels on which it feeds, or the biological potential for exploiting the aftermath of a burn.

-- Stephen Pyne, *Fire in America* (1982)

Our kind of people never used the plow...all they used to do was burn the brush at various places, so that some good things will grow up...they do not set fire for nothing, it is for something that they set fire for.

--Karok Indian woman, cited in Henry Lewis, *Patterns of Indian Burning in California: Ecology and Ethnohistory* (1973)

Goal Fire-G1

The HCNRA will be an ecosystem wherein fire assumes it ecological niche and fire suppression is unnecessary except to protect human life and private property.

Pre-contact frequencies of fires will be restored to the extent possible.

Recovery of degraded aspects of ecosystem health will be facilitated with careful use of prescribed fire: Fuel loads will be reduced, pest outbreaks may be reduced, germination sites for shade intolerant and fire tolerant species will be increased, nutrients will be released, native grassland species may be extended, and wildlife habitat will be created. Alternatives to the use of prescribed fire, such as scattering slash, regeneration of native grassland species, and biological control of non-native species, will also be utilized in ways that support natural ecosystem processes.

Objective Fire-O1

Reverse person-caused disruption of Native-American and natural fire regimes caused by wildland fire suppression, logging, and excessive livestock grazing, including the proliferation of non-native species and overabundance of certain native species.

Standard Fire-S1

Include in each alternative for any proposed action analysis of whether the alternative would promote conditions that would restore or continue to disrupt natural fire regimes and native ecosystem functioning. (Livestock grazing, for instance, can prevent the re-establishment of native grassland fire regimes through the elimination of fine fuels necessary to carry fire.)

Objective Fire-O2

Minimize wildland fire suppression.

Standard Fire-S2

Suppress wildland fires that imminently threaten human life, native ecosystem function, or private property.

Standard Fire-S3

Suppress all wildland fires definitely known to be caused by persons (e.g., from a campfire).

Objective Fire-O3

Minimize the effects of wildland fire suppression.

Standard Fire-S4

Use only minimum impact suppression tactics (MIST) on wildfires occurring within the Hells Canyon Wilderness, and use MIST as the predominant tactic in all other areas of the HCNRA.
Corrected per 5/11/99 e-mail message

Standard Fire-S5

Use only native plant species for post-fire site rehabilitation.

(A) Utilize native grass species, trees, and shrubs.

(B) Where native seed sources are presently inadequate, research how to secure or build upsuch sources.

Objective Fire-O4

Use prescribed fire only to restore pre-Contact settlement fire regimes and native ecosystem function, using the best available information and techniques.

Guideline Fire-Gu1

Consult, under contract, with the Nez Perce Tribe regarding traditional use of fire for the purpose of modifying forest and grassland seral composition (for traditional land uses) and restoring ecosystem function.

Standard Fire-S6

A prescribed fire will be undertaken for a stated, specific purpose. If it is to be used to reduce fuel load, a comparison with other methods (e.g., promoting decomposition by getting wood down on the ground) will be made.

Standard Fire-S7

Prescribed fire will be conducted in areas currently outside the historic range of variability for fire frequency (i.e., have missed more than one fire interval). Prescribed fire will not be used in fire regimes that have long fire return intervals (more than 100 years) and therefore have not experienced significant ecological change due to fire suppression (unless the fire regime has been disrupted due to other non-Native-American settlement activities such as domestic livestock grazing which might warrant restoration acts which use fire).

Standard Fire-S8

Prescribed fire will be used only for native ecosystem restoration and for creating vegetative composition and structure which mimics that created by traditional Native American fire use, with the following priorities:

A) Native grasslands that are likely to disappear without fire or whose exotic/noxious vegetation will be reduced through fire and whose native vegetation will be enhanced through fire.

B) To reduce fuel loading in low- or mid-elevation forest stands where low-intensity surface fires were/are the dominant natural fire regime, and the appropriate species exist on the site to support surface fires. Prescribed fires and the appropriate management response to naturally occurring wildland fires will be planned at the landscape scale. A stand-level approach to fire management will not significantly reduce the hazard of catastrophic fire.

Guideline Fire-Gu2

Avoid using prescribed fire to reduce excess slash material (See Fire note 1) Instead:

A) Allow for small hand-piled slash, which can be a good habitat component.

B) Lop-and-scatter slash.

C) Transport heavy loadings of slash to places where more debris is needed to mitigate erosion or for stream enhancement.

D) Place slash to hold moisture, for shade, and to discourage weed growth on areas being prepared for replanting.

Standard Fire-S9

Prescribed fire will be used within the following constraints:

A) In forests, only in areas where natural fuel breaks exist and where fires can reasonably be contained within a predetermined unit.

B) In grasslands, taking into account plant phenology. Prescribed fire operations would optimally occur during the period of plant dormancy which varies by species and microclimate conditions. Monitoring phenology will be coordinated between fire and ecology staff personnel.

C) In forest, grassland, and riparian ecosystems, under timing to coincide, as much as possible, with the time of year in which (as a function of fuel and weather conditions) wildland fires naturally occur.

D) Under timing to coincide, as much as possible, with unwanted insects' and diseases' lifecycle stages spent on the forest floor.

E) Only when prescribed fire would not imminently threaten human life, fish or wildlife habitat (including significant ground-nesting bird habitat), scarce habitat, or private property.

Standard Fire-S10

Coordinate prescribed fire projects with:

A) Guidelines related to airshed and air quality designations and objectives.

B) Other activities to reduce forest fuel loading.

C) Protection and recovery of riparian vegetation.

D) Efforts to limit/control the spread of exotic/noxious weeds.

Objective Fire-O5

Acknowledge the presence of exotic/noxious weed species in prescribed fire planning or selecting the appropriate management response for wildland fires.

Standard Fire-S11

Prepare geographic information system (GIS) maps which show the distribution of exotic/noxious plant species in the HCNRA.

Standard Fire-S12

Prioritize fire reintroduction into Hells Canyon Ecosystems (both prescribed and wildland) to restore ecosystem function and vegetative composition.

Guideline Fire-Gu3

Ascertain the effects of fire upon exotic/noxious species present in the HCNRA.

Standard Fire-S13

In choosing an appropriate management response for a wildland fire, include the ecologically deleterious effect of exotic/noxious species spread as a prescription parameter in managing the incident.

Objective Fire-O6

Manage recreation use to reduce the risk of human-caused fires, including firepan requirements and seasonal campfire prohibitions.

Standard Fire-S14

Prohibit backpacker open fires during July, August, and September unless otherwise directed.

Standard Fire-S15

Prohibit all open fires when the Action/Precaution Class is 4 or above.

Standard Fire-S16

Prohibit motor vehicle, and internal-combustion devices when the Action/Precaution Class is 4 or above (except in the case of an emergency).

Objective Fire-O7

Monitor adequacy of fire planning in meeting the goals of the HCNRA CMP.

Standard Fire-S17

Funding for monitoring long-term results of a prescribed fire must be obtained prior to undertaking the prescribed fire.

Guideline Fire-Gu4

Biennially review the HCNRA fire program's progress in restoring pre-non-Native-American settlement fire regimes and ecosystem function, taking into account natural range of variability, vegetative composition and structure, and annual weather/climate trends.

Assure that representative sampling plots of forest, grassland, and riparian zones, are quantitatively monitored on an annual basis, regardless of the presence of domestic livestock or the occurrence of a wildland fire. This monitoring will be coordinated between:

(A) Fire and Ecology staffs,

(B) Utilizing university faculty, students, and private organizations to assist with monitoring when feasible.

Guideline Fire-Gu5

Inventory fuel types and distribution within the HCNRA.

Notes for Fire

1. Both hand-piling small slash piles and lopping-and-scattering slash can promote decomposition and avoid extended uninterrupted fuel loads.

GEOLOGY

Goal Geo-G1

Maintain the natural, geologic features and evolutionary processes of this region.

Objective Geo-O1

Restrict human activities which will alter the natural formation of the land.

Standard Geo-S1

Rock formations will be kept intact. There will be no gravel pits. The necessity for gravel will be minimized and needed gravel will be transported in.

Standard Geo-S2

Stream channels and banks will not be hindered in development.

Standard Geo-S3

Each alternative to a vegetation management proposal will address its potential to protect geological stability.

Objective Geo-O2

Prepare public educational materials regarding the erosional processes that were central to the formation of Hells Canyon and the distinction between those processes and erosion (e.g., soil loss) that can be caused by human activities such as logging and livestock grazing.

LAND OWNERSHIP

The HCNRA is a local, bioregional, and national place and refuge for public values and native ecosystem conditions. The HCNRA plays a crucial role in the connectivity of ecological integrity within the Columbia River Basin and western Northern Rockies. Rural communities and land- and water-based economies exist within and adjacent to the HCNRA.

Private land borders public land within and adjacent to the HCNRA. Native fish, wildlife, and habitat within the HCNRA are affected by activities on private lands, and private land activities and domestic animals are affected by the structure and functions of native ecosystems and by native wildlife as well as by laws protecting and restoring such ecosystems and wildlife within the HCNRA.

Goal Lan-G1

The greatest possible respect will be afforded both private land and activities and public land ecosystems and values.

Objective Lan-O1

Identify key HCNRA watershed and wildlife areas and their location with respect to public and private lands within the HCNRA.

Objective Lan-O2

Prepare an inventory of key watershed and wildlife areas that exist on private lands within and adjacent to the HCNRA. Examine the comparative potential of both private and public ownership of these key areas to provide essential habitat conditions and biological connectivity for native fish and wildlife populations and species.

Guideline Lan-Gu1

Review and alter established criteria and ranking for priority of purchase of private land parcels in light of bioregional and ecological information obtained since designation of the HCNRA.

Standard Lan-S1

Give prompt and careful consideration to any offer from a willing seller.

Objective Lan-O3

Prepare an inventory of intermixed public/private landownership in order to identify potentials for consolidation of public ownership in key watershed and wildlife areas.

Standard Lan-S2

Purchase partial interests when private land is being used, or is threatened to be used, outside of the standards prescribed by the HCNRA Act and HCNRA private land use regulations.

Standard Lan-S3

Purchase wilderness lands in fee as the opportunity arises.

Objective Lan-O4

Prepare an inventory of public non-motorized access and private land barriers to such access to HCNRA public lands and trails in order to identify key needs for reasonable non-motorized access (see Landownership note 1).

Notes for Landownership

1. Numerous public-land trails and river canyons within the HCNRA must be accessed from HCNRA bottomlands through privately-owned land. The degree to which visitors are in practice prevented from accessing such lands and trails needs to be understood.

MINERALS

Goal Min-G1

Exploration for or extraction of minerals or mineral materials on the surface or underground will be undertaken only for enhancement of the native ecosystem.

Standard Min-S1

If surface or underground disturbance is proposed in any plan of operation on any mining claims within the HCNRA, a valid rights determination will be completed for the claim before the plan is processed.

Standard Min-S2

If the claim owner cannot prove that the claim had a discovery of a valuable mineral at the date of the HCNRA Act, the plan will not be accepted and the claim will be contested.

Standard Min-S3

All plans for surface or underground disturbance for the purpose of mining will be opposed as far as law permits.

Objective Min-O1

Minimize the use of HCNRA mineral materials for construction or maintenance of HCNRA facilities.

Standard Min-S4

Do not use mineral materials for construction or maintenance of HCNRA facilities for purposes other than minimization of motorized use and protection of the environment. Do not use mineral materials to facilitate speed of travel (by motorized or non-motorized means) or to provide for the aesthetics of people unfamiliar with natural surroundings.

Standard Min-S5

Include in all proposals for use of mineral materials for construction or maintenance of HCNRA facilities a range of alternatives that avoid the use of such mineral materials.

MONITORING

"This almost world-wide display of disorganization in the land seems to be similar to disease in an animal, except that it never culminates in complete disorganization or death. The land recovers, but at some reduced level of complexity, and with a reduced carrying capacity for people, plants, and animals."

--Aldo Leopold, *Sand County Almanac* (1949)

"The Regional Forester has emphasized that 'All programs and projects should contain appropriate levels of monitoring funds in their costs---or they should not be undertaken.'"

--U.S. Forest Service, Region 6. *Forest Monitoring & Evaluation Guide* (1993).

Goal Mon-G1

The beneficial and adverse effects of human activities within the HCNRA will be observed and studied to determine whether they are compatible with HCNRA Act and CMP goals, objectives, and standards and guidelines (see Monitoring note 1). Because Section 7 of the HCNRA Act mandates protection and enhancement of HCNRA unique, rare, endemic, and outstanding ecosystems, habitat, and species, this monitoring will emphasize measurement of preservation, recovery, and health of these elements in relation to stated goals of commercial and recreational human activities within the HCNRA. This is in distinct contrast to risk-based monitoring, which presumes human activities are compatible unless shown to be causing harm (See Monitoring note 2).

Monitoring will be linked inextricably with commercial and recreational human activities so as to meet the legal and management obligation to determine whether those activities are compatible with HCNRA Act Section 7(1-6) priorities and CMP goals, objectives, standards, and guidelines. It will be unacceptable to continue or permit activities that are not being monitored for their predicted beneficial and potential adverse impacts on the HCNRA ecosystems (see Monitoring note 3).

Objective Mon-O1

Monitor permitted commercial and recreational human activities with scrutiny that is comparable to their potential for incompatibility with HCNRA Act Section 7(1-6). For instance, a potentially highly impacting activity will be closely monitored; a more environmentally benign activity will be less closely monitored. ***Modified 4/2/99***

Standard Mon-S1

All permits for human activities will be accompanied by a finding of compatibility based on field measurements of key ecosystem indicators and stated goals. Such findings are to be renewed at least every two years.

Standard Mon-S2

A monitoring report will be produced annually for public review.

Objective Mon-O2

Determine if goals, objectives, and standard and guidelines are being approached or met on schedule.

Standard Mon-S3

All goals, objectives, and standards and guidelines will be written in such a manner as to be measurable with concrete ecosystem indicators. Reliance on "professional judgment" without evidence will be minimized, so that conclusions and ecosystem conditions can be independently verified.

Monitoring methods and indicators will be:

Relevant: Evaluates conditions identified in G/O/SGs;
Sensitive: Quickly detects change, shows trends, identifies critical features;
Available:Inexpensive, easily applied;
Measurable:Accurately quantifiable with acceptable methods;
Defensible:Minimally subject to individual bias;
Verifiable:Allows others applying the same methods to achieve similar results; and
Inclusive:Avoids reductionism, where feasible.

Standard Mon-S4

Annually report whether goals, objectives, standards and guidelines are being met or not. For those that are not being met, indicate plans for meeting them or of eliminating the activity that is preventing their attainment.

Guideline Mon-Gu1

Reduce the costs of monitoring through selection of no-impact and least-impact alternatives for proposed human activities, wherever feasible. (In other words, acknowledge that monitoring of activities that are potentially ecologically damaging is necessarily more expensive than monitoring activities that are less or unlikely to be ecologically damaging.)

Standard Mon-S5

All proposals to permit or undertake an activity will include a description of the monitoring that will be necessary to (a) determine the compatibility of each alternative with Section 7(1-6) and specific CMP G/O/SGs and (b) revisit that finding every two years. Estimated costs of the differential monitoring that will be required to examine the compatibility of each alternative with HCNRA Section 7(1-6) will be included.

Standard Mon-S6

If the costs of biannual monitoring necessary to prepare findings of compatibility for alternatives that could cause adverse impacts will not be affordable within the HCNRA budget, the no-impact or (if no-impact is not possible) least-impact alternative will be selected.

Notes for Monitoring

1. This monitoring section is essential, in order to rectify the ongoing situation whereby recreational and commercial HCNRA human activities such as motorized recreation, livestock grazing, and logging (HCNRA Act Section 7(7)) are currently permitted, encouraged, undertaken, and continued in the absence of even minimal monitoring of the impacts of those activities on the native ecosystems and wildlife of the HCNRA. "We do what we get funded for" is neither a legally sufficient nor an ecologically responsible approach to the required, continuous, finding of compatibility of these activities with Section 7(1-6).

2. The weakening and degradation of ecosystems, populations, species, genetic variability, wilderness values, Native American sites, and other values for which the HCNRA was designated is not easily detected. Therefore, "units of measure" based on "risk of impacts" to resources are often incapable of tracking ecosystem decline. Instead, it is essential to measure whether positive goals for native ecosystem recovery, conservation, and integrity are being attained.

3. *There is an obvious, admitted, ongoing, and institutional failure to adequately monitor, survey, and document the impacts of human activities on habitats, native vegetation, and native wildlife within the HCNRA. Good intentions and CMP monitoring plans have been insufficient to direct sufficient funding, staff, or attention to allotment management plans, rare wildlife management plans, soil conditions, non-game wildlife, the functioning of HCNRA native grassland ecosystems, or riparian conditions, to name a few elements of HCNRA. It is essential that both the continuation and initiation of recreational and commercial human activities be dependent upon prior adequate monitoring for compatibility with the HCNRA Act 7(1)-(6). This monitoring needs to be documented so that it can be independently reviewed by non-Agency scientists, the scientifically literate public, and others who are concerned about the ecological health of the HCNRA.*

NATIVE AMERICAN SITES AND RESOURCES

Native American sites, places, and resources are not static pieces of the past, but are rather a living part of Native American tradition and culture. These sites hold different meanings for Native Americans than for many other Americans. In addition, the context of a site (e.g., remoteness, or where the sun rises on a particular date) may be very significant. Places that are spiritual places for Native American tribes in the bioregion exist within the HCNRA. As such, traditional Native American uses will be honored and protected.

Goal Nat-G1

Native American sites and resources will be identified within the HCNRA in a manner and to the degree that Native American religious meanings and uses are not compromised.

Native American cultural resources will be protected in their native, wild and natural settings. This includes protection of a site's visual, audible and atmospheric surrounding environment. This protection of Native American sites will take precedence over resource-consumptive activities, as mandated in the HCNRA Act.

Ongoing traditional Native American uses of Native American sites and cultural traditions will be accommodated.

Objective Nat-O1

Through contracted work with the Nez Perce Tribe, and other appropriate tribal representatives as recommended by the Nez Perce Tribe, prepare standards and guidelines for accommodations of traditional Native American uses of Native sites and cultural resources within the HCNRA. The public version of this report will omit any references to specific sites that would place such sites at risk of damage (see Native American note 1)

Objective Nat-O2

Complete the cultural resource inventory of HCNRA.

Guideline Nat-Gu1

Contract with Nez Perce Tribe for assistance in preparation of the cultural resource inventory of HCNRA.

Guideline Nat-Gu2

Determine, with Nez Perce contracted assistance, potential National Register sites. **Affirmed 4/2/99**

Objective Nat-O3

Write a new Cultural Resources Protection Plan based on desired future conditions, American Religious Protection Act and National Historic Preservation Act.

Standard Nat-S1

Contract with Nez Perce Tribe and other appropriate tribal representatives, as recommended by the Nez Perce Tribe, to co-write the Cultural Resources Protection Plan (see Native American note 2).

Standard Nat-S2

Each alternative prepared in proposals for human activities that may interfere with the native, wild, and natural setting of a Native American site or resource or result in degradation of such a site or resource will be accompanied by a finding of the alternative's potential to protect or degrade the Native American sites and to comply with provisions to the Cultural Resources Protection Plan.

Guideline Nat-Gu3

Alter practices under the Cultural Resources Protection Plan in response to the results of the annual survey of HCNRA users' awareness of their obligation to protect Native American sites and cultural resources.

Objective Nat-O4

The nature of visitation to Native American sites must first and foremost be geared to protection of the sites and the meaning of the sites to Native Americans rather than to convenience or perceptions of the visitors.

Standard Nat-S3

Do not direct people to Native American sites. Do not provide trails, roads, developments or on-site interpretive structures. Use natural barriers, such as native vegetation, for protection of sites. **Affirmed 4/2/99**

Standard Nat-S4

No new non-Indian overnight camping, day-use facilities, or other developments will be allowed within at least 100 yards of a Native American site. Recognizing that the setting of a site may be of particular significance to Native Americans, the Nez Perce will be consulted regarding the appropriate distance of any developments from a particular site. If research with traditional Native Americans is necessary to establish this distance, the Nez Perce will be contracted to undertake such research.

Standard Nat-S5

Limit alterations of surrounding environment/setting caused by livestock grazing and vegetation manipulation. Proposals for and monitoring of livestock grazing will address the degree to which potential and actual harm will be done to Native American sites.

Standard Nat-S6

No visual or audible elements that are out of character with the site or that alter its setting will be allowed. The Nez Perce Tribe will, through contracted work, provide guidance regarding what constitutes such alteration, based on traditional uses and relationships to such sites. Likewise, the Nez Perce will address the degree of significance of particular elements in the surrounding area of the site.

Standard Nat-S7

A Native American site will not be isolated from its surrounding environment. The Nez Perce Tribe, through contracted work, will provide guidance regarding what constitutes such isolation, based on traditional uses of and relationships to such sites.

Objective Nat-O5

Remove the road and parking lot to the Pittsburg petroglyphs; remove the developed trails within the petroglyph site (see Native American note 3)

Objective Nat-O6

Improve enforcement of protection and monitoring measures for Native American sites.

Standard Nat-S8

The obligation to protect cultural resources will be an explicit condition for obtaining and maintaining a commercial boat operator's license or a private boating permit on the Snake River. In addition to provision of brochures to private boaters, personal representation of this obligation will be made by the Forest Service and volunteers to all private boaters before they enter the river.

Standard Nat-S9

The obligation to protect cultural resources will be made explicit to all users of the HCNRA.

Guideline Nat-Gu4

Provide for off-site education of the public and Forest Service personnel concerning protection of Native American cultural resources. Through contract work with the Nez Perce Tribe, design and provide:

- A cultural resource protection informational session for all commercial boat operators and users.
- Native American resource awareness sessions for Forest Service employees
- Off-site public education regarding the significance of and protection of Native American cultural resources and sites.

· On-site interpretation if any, as compatible with longterm protection of Native American cultural resources and sites.

Objective Nat-O7
Enforce guidelines for protection of Native American sites and cultural resources.

Standard Nat-S10
Provide, as necessary and appropriate, seasonal patrol rangers to provide physical presence to deter vandalism.

Guideline Nat-Gu5
Implement the Native American Heritage Protection system through which volunteers aid in protection of heritage sites in HCNRA. Through contract work with the Nez Perce Tribe, develop guidelines for such protection.

Objective Nat-O8
Monitor attainment of goals, objectives, standards, and guidelines for Native American sites.

Standard Nat-S11
An annual report will be prepared regarding problems with and successes at providing protection for Native American sites and cultural resources. This report will be co-authored with contracted Nez Perce Tribal assistance. The public version of this report will omit references to location of specific sites where such references would endanger the site.

Standard Nat-S12
Each alternative prepared in proposals for human activities that may interfere with the native, wild, and natural setting of a Native American site or resource or result in degradation of such a site or resource will be accompanied by an estimate of the cost of monitoring that will be required to monitor whether degradation of such a site or resource will be occurring.

Guideline Nat-Gu6
Annually survey users of the HCNRA, determining the degree to which they are aware of their obligation to protect cultural resources within the HCNRA. Publish the results of this survey each year, along with plans to improve the degree of awareness. The methodology of this survey need not be extensive in order to serve the purposes of obtaining meaningful results. It is essential, however, to not assume current efforts at such education are successful.

Notes for Native American Sites

1. The HCNRA lies within the ceded lands of the Nez Perce Tribe. The Nez Perce may have particular knowledge of a site not held by a Forest Service archaeologist. Further, a Forest Service archaeologist may have particular allegiance to the Forest Service. Therefore, contracted work by the Nez Perce Tribe and other appropriate tribal representatives, as recommended by the Nez Perce Tribe, is important for corroborating and enhancing the work of the Forest Service archaeologist.

2. It is not reasonable to prepare a Cultural Resources Protection Plan on Nez Perce Tribe ceded lands without major, significant cooperation with the Nez Perce Tribe. However, it is also unreasonable to request that the Nez Perce Tribe research, review, comment on, or otherwise assist in the preparation of the Cultural Resources Protection Plan without contracting for Nez Perce tribal staff time to do so.

3. Directing people to this site has proven to be harmful to the petroglyphs. This is in clear violation of the National Historic Preservation Act.

NON-NATIVE AMERICAN SITES

Goal Non-Nat-G1

Significant non-Native American (e.g., European American, Asian American) historic sites will be protected and maintained in their historic settings for public education about human presence and impacts to the extent that education is consistent with protection.

Objective Non-Nat-O1

Determine which sites have historic significance based on the following:

1. The site is the only remaining representative of an era, activity or site type.

2. The site includes a variety of features

3. The site is representative of a significant era or activities within the HCNRA.

Standard Non-Nat-S1

Protect historically significant sites as mandated by law.

Objective Non-Nat-O2

Determine which sites are not historically significant based on the following:

1. Sites with substantial damage (50% or more disturbed).

2. Sites that are not representative of a significant era or activity (e.g., the Carter site).

3. Sites in fair condition where a better representative of an era, activity, or site exist.

Standard Non-Nat-S2

Allow non-significant sites to deteriorate naturally.

Guideline Non-Nat-Gu1

Undertake the minimal effort necessary to reduce unsafe conditions within deteriorating structures (e.g., downing a wall that threatens to topple).

Objective Non-Nat-O3

Retain the natural setting of non-Native American historic sites. ***Modified 4/2/99***

Standard Non-Nat-S3

***Standard eliminated 4/2/99 ***

Guideline Non-Nat-Gu2

Implement the Heritage Protection System whereby volunteers aid in protection of heritage sites in HCNRA.

Objective Non-Nat-O4

Provide for public education about the historic significance of significant sites to the extent that education is consistent with protection of the site and its natural setting.

Guideline Non-Nat-Gu3

Contract with the Nez Perce Tribe to work with the HCNRA to review all public educational materials regarding non-Native American sites within the HCNRA.

Guideline Non-Nat-Gu4

Staff certain sites with volunteers who can help educate the public about the historical presence of non-Native Americans in Hells Canyon. These will include consideration of impacts on Native Americans and native wildlife and ecosystems.

Objective Non-Nat-O5

Monitor attainment of goals, objectives, standards, and guidelines for non-Native American sites.

Standard Non-Nat-S4

Monitor significant sites for any cases of vandalism or for repair/maintenance work that needs to be done. Where feasible, involve volunteers in a Heritage Protection System in the monitoring and protection of significant sites.

RECREATION

Recreation is valuable in proportion to the intensity of its experiences, and to the degree to which it differs from and contrasts with workaday life. By these criteria, mechanized outings are at best a milk-and-water affair.

Mechanized recreation already [i.e., in the 1940s] has seized nine-tenths of the woods and mountains; a decent respect for minorities should dedicate the other tenth to wilderness.

Aldo Leopold, *A Sand County Almanac* (1949)

Goal Rec-G1

Because the HCNRA plays a critical role in the Columbia River Basin for freedom from motorized presence, motorized recreation that is present widely throughout the region will be minimized within the HCNRA.

The HCNRA will be minimally impacted by human recreation, with humans visiting the HCNRA on its rugged, wild, ecosystem, and wildlife terms. Access to all areas of the HCNRA does not require motors and human access cannot be equated with motorized access . Motorized presence in the HCNRA will be minimal (see Recreation note 1).

Recreation management will be based first on ecological requirements of the land within the HCNRA, and secondarily on the recreational desires of humans. Recreation will be compatible with the ecosystem, cultural resource, and wilderness values mandated by the HCNRA Act, the Wilderness Act, and the Wild and Scenic Rivers Act.

The HCNRA will be recognized as incapable of providing recreation for unlimited numbers of humans.

Recreation use will be managed to provide opportunities for diverse outdoor recreation experiences while protecting natural and ecological features and non-Native American and Native American sites; and while retaining and restoring the rustic character, challenging access, and backcountry atmosphere that have defined and protected the NRA prior to its designation.

Current recreational activities such as hiking, biking, regulated boating, equestrian activities, hunting, fishing, birdwatching, and camping will continue in the HCNRA, but all human activities will be conducted in such a manner as to not defeat the long-term goals of protection and eventual recovery of native ecosystems in the HCNRA.

Commercial outfitting and guiding will be managed to protect and restore the ecological integrity of the land and wilderness values. In the event of overcrowding or over- use, priority will be given to public, non-commercial recreational activities. ***Paragraph Added 4/20/99***

Objective Rec-O1

Prevent ecological, biological and aquatic damage to the native ecosystems of the HCNRA by preventing overuse and overcrowding of the HCNRA with humans.

Standard Rec-S1

Recreation will not be promoted, but allowed to propagate on its own. The HCNRA country's natural obstacles and rugged topography will be allowed to self-regulate recreational activities to the fullest extent possible.

Standard Rec-S2

All recreational activity priorities and decisionmaking will be guided by a philosophy of "least adverse impact" to the natural/ecosystem process.

Objective Rec-O2

Implement a monitoring scheme that will document compatibility of each major type of HCNRA human recreation with HCNRA 7(1-6).

Standard Rec-S3

Within one year of implementation of this CMP, develop a monitoring protocol that will be capable of documenting compatibility and incompatibility of each type of HCNRA human recreation activity with HCNRA Act 7(1-6), the Wilderness Act, and the Wild and Scenic Rivers Act, taking into account recent scientific literature on recreational impacts (see Recreation note 3). Indicate the costs of monitoring each type of recreation to investigate compatibility and incompatibility. Include these costs for each alternative considered in decisionmaking regarding recreational activities in the HCNRA.

Standard Rec-S4

Monitor each type of recreational activity for its potential key ecosystem impacts, in order to prepare an annual report on the major impacts observed of each type of recreational activity on HCNRA goals of ecosystem protection and recovery.

Standard Rec-S5

Review at least every five years the impacts of outfitter activities within the HCNRA to determine compatibility with native vegetation, wildlife habitat, and aquatic areas. If native vegetation or wildlife habitat are adversely affected, establish restoration goals and/or eliminate the impacting activity.

Objective Rec-O3

Eliminate recreation that is incompatible with protection and recovery of HCNRA native ecosystems.

Objective Rec-O4

Articulate the desirability of visiting the HCNRA on its own terms. Recognize that many people have come to reflexively equate recreation with motorized recreation, and that a Forest Service public education effort can effectively encourage people to regain a sense of connection with nature and wildness, see more wildlife, experience sounds and sights unavailable in the motorized world, and creatively overcome perceived constraints on visitation without motorization.

Standard Rec-S6

All use in HCNRA documents of the word "access" in relation to recreation must be preceded by either "non-motorized" or "motorized" as a modifier.

Objective Rec-O5

Minimize presence of aquatic and terrestrial motorized recreation in the HCNRA. Aquatic motorized recreation includes personal motorized watercraft and jet boats. Terrestrial motorized recreation includes, but is not limited to, all-terrain vehicles, off-road vehicles, motorbikes, 4x4s and snowmachines. Motorized recreation is any form of recreational activity which relies on personal recreational vehicles (as mentioned above) to recreate. Most HCNRA recreation involves motorized access (i.e., transportation to the recreational area), but all motorized access is not for recreation.

Standard Rec-S7

Motorized recreational vehicle users will be required to obtain and carry a free permit (either HCNRA- or self-issued) so as to increase (a) Forest Service knowledge of the extent of motorized recreational use and (b) facilitate ease of enforcement of recreation policy and regulations.

Standard Rec-S8

All allowable motorized recreation will occur on open roads only (not off-road, and not on closed roads).

Standard Rec-S9

Significant recreation user conflicts will default to non-motorized priorities. Safety can be a factor in resolving conflict among non-motorized users.

Standard Rec-S10

Airplanes may use landing strips within the HCNRA for emergency and fire-fighting purposes, and, on a case by case basis, for wildlife monitoring, research, and other administrative purposes. Allow no scheduled commercial or regular outfitting landings.

Standard Rec-S11

Neither recreational developments nor technological improvements within the HCNRA will be justified on the basis of increasing the convenience or speed of motorized travel of visitors.

Objective Rec-O6

Allow snowmobile use by permit for a specifically limited number of snowmobiles, along specifically designated, easily-monitored roads, only if such use can be shown to not adversely impact winter wildlife and wilderness values and specific air quality standards in the immediate area of use (see Recreation note 2).

Standard Rec-S12

Snowmobiles will be allowed only on specifically designated, easily-monitored, major, paved roads within the HCNRA.

Standard Rec-S13

Each snowmobile must be equipped with a tread cleat that imprints the permit number of the snowmobile in the snow, in readable size.

Standard Rec-S14

One year after implementation of this CMP, snowmobile use will be allowed only following HCNRA public analysis of a thorough literature search of evidence that deer, elk, bighorn sheep, marten, wolverine, lynx, bears, subnivean (i.e., under the snow) animals, and other sensitive HCNRA wildlife will not be displaced or stressed during winter by the specifically designated routes, numbers, noise, and air pollution levels permitted.

Standard Rec-S15

Snowmobile use will be allowed only upon demonstration that wilderness values are not adversely affected for non-motorized users of the HCNRA during winter.

Standard Rec-S16

Snowmobile use will be re-permitted annually on the basis of a public report on the results and implications of (a) completed annual HCNRA monitoring as designated in the snowmobile plan; (b) evidence that monitoring and enforcement of snowmobile regulations have been feasible and effective; and (c) recent scientific literature regarding adverse effects on wildlife, air quality, and wilderness values. Each year, when setting limits on snowmobile use, the burden of evidence will be on why snowmobile use should not be reduced or eliminated from the HCNRA.

Standard Rec-S17

Recreation will be non-motorized within the Wild section of the Snake Wild and Scenic River, in keeping with the Wild and Scenic Rivers Act, which establishes Wild designations as "vestiges of primitive America." Research, monitoring, emergency, and other administrative uses of motorized watercraft in the Wild section will be allowed on a case-by-case basis (see Recreation note 4).

Standard Rec-S18

Motorized use of the Scenic section of the Snake River will be retained at 1975 levels of use, when the HCNRA was designated and control of motorized river use was mandated: Three launches per day each of private and commercial jet boats, with use constrained for protection and recovery of salmon, bald eagles, and other wildlife potentially harmed by jet boat use; and for retention of safety and recreational values of non-motorized visitors within and adjacent to the Scenic section of the Snake River.

Standard Rec-S19

No new special use permits to outfit and guide for upland users (e.g., pack and saddle, hunting, bicycle touring, bus tours, fishing, photography) will be issued for the first three years following plan implementation. Evaulate the need to reduce permittee numbers or consider new applications for outfitter and guide permits every three years, giving priority to ecological requirements of the land when considering changes in permits.

If conditions warrant alterations prior to the scheduled three year review, an interim review may be conducted. ***Standard Added 4/20/99***

Standard Rec-S20

An annual, cooperative site visitation by members of the interested public, permittees, and the W-WNF will be undertaken of (a) vegetation and riparian conditions and (b) areas in need of restoration, in at least three distinct areas frequently used by outfitters and guides. All major outfitting and guide areas will be reviewed cooperatively once every five years.

A draft and final report, including observations and recommendations for restoration and permittee practices, will be prepared by the W-WNF within four months of the on- site visitation. ***Standard Added 4/20/99***

Standard Rec-S21

Party size of outfitted or guided groups will be limited to numbers that provide for protection of native vegetation, recovery of threatened vegetation, wildlife habitat, and wilderness values, but with an upper limit of 8 people and 16 stock in the Hells Canyon Wilderness and Wild and Scenic River; and a limit of 18 stock in the remainder of the HCNRA. ***Standard Added 4/20/99***

Standard Rec-22

Outfitters will be required to obtain training in (a) heritage resource protection; (b) Native American cultural sensitivities regarding Native American sites; and (c) identification and ecology of invasive and noxious exotic species so that the outfitters and guides can inform customers/guests of the significance and sensitivity of heritage resources; the fact that Native Americans often regard sites quite differently than non-Native Americans; potential penalties for damaging, defacing, or removing heritage resources; and the importance of retaining native vegetation whenever possible.

Training will consist of either (1) an initial, introductory training (if this has not yet been completed); or (2) an annual update training. ***Standard Added 4/20/99***

Standard Rec-23

Outfitters and guides will be provided with simple noxious weed and invasive species identification handbooks and forms on which to report changes in the location or presence of noxious weeds and invasive species along their outfitting and guiding routes. As a condition of their permit, the permittee will complete and submit an HCNRA noxious weed form each month in which outfitting and guiding services are provided. ***Standard Added 4/20/99***

Guideline Rec-24

Noxious weed identification sheets/reporting forms will be offered to visitors in all visitor centers and trailheads. ***Standard Added 4/20/99***

Notes for Recreation

1. The HCNRA is not geographically capable of providing a high-quality mix of wild, primitive, semi-primitive, roaded, semi-roaded, unroaded, motorized, and non-motorized recreation to all potential users in all places.

The existence of accessible places free from the noise, exhausts, and tempo of motorized activities is rapidly diminishing in our bioregion, nation, and world.

Motorized recreation (i.e., as distinct from motorized transportation to recreational areas and in comparison to most non-motorized recreation) brings numerous adverse environmental impacts and enforcement

difficulties to the HCNRA. This reality places motorized recreation low among recreational priorities in the HCNRA according to the mandates of the HCNRA Act, Section 7(1-6).

Non-motorized activities within the HCNRA, on the other hand, are feasible for a full range of physical capabilities, ages, and outdoor skills and experience. Access to rivers, grasslands, meadows, forests, rivers, wildlife viewing, hunting, solitude, scenery, and silence within the HCNRA can be obtained with minimal dependence on motors, and indeed depends in many instances on absence of use of motorized transportation and motorized equipment.

2. Strict requirements for snowmobile use are essential due to (1) large recent increases of snowmobile use elsewhere in the Northwest (e.g., in Yellowstone National Park and the Grand Teton area); (2) intense snowmobile exhaust air pollution via nitrous oxides and hydrocarbons; (3) historic interference with non-motorized human uses of wilderness-value areas because of the intense noise, speed, and numbers of snowmobiles; (4) lack of necessity to displace any HCNRA wildlife or wilderness values with motorized recreation; (5) difficulties of effective monitoring and enforcement of use restrictions within backcountry areas; and (6) history of HCNRA failure to reduce any motorized use once it has become "established," regardless of how recently such use has been "established." In addition, snowmobiles are currently allowed elsewhere within the Wallowa-Whitman National Forest, rendering questionable the use of snowmobiles within the HCNRA if ecosystem or wilderness values are thereby not conserved.

3. Compatibility of recreation with HCNRA Act 7(1-6) must consider, among other elements, ecosystem and cultural resources protection, restoration of endemic, sensitive, threatened, indicator, rare, endangered, or declining (i.e., "special") species habitat within the HCNRA, and reintroduction of bioregionally-limited wildlife. Wildlife displacement, degradation of wilderness values for non-motorized users; air and noise pollution; effectiveness of monitoring and enforcement are also necessarily considered.

4. In Fall 1998, Wallowa-Whitman National Forest Supervisor Karyn Wood indicated that she will not, in this CMP, alter jetboat use allowed by the 1995 Snake Wild and Scenic River Recreation Management Plan. However, it is the understanding of many that such use does conflict with the legal description of Wild Rivers as "vestiges of primitive America;" eliminates solitude values within the immediately adjacent Hells Canyon Wilderness; and contradicts at least the spirit of the HCNRA Act, which provides for protection of "wilderness values" throughout the HCNRA, Sec. 7(2).

SCENERY

Goal Sce-G1

The natural scenic resources for which the HCNRA was created will be maintained and protected. Landscapes will be conserved consistent with the primitive nature that formed the basis for HCNRA designation.

Objective Sce-O1

Issue a call for public comments and suggestions regarding impairments to natural scenery that seem unnecessary and/or of significant concern. Prepare a public report on the impairments to natural scenery that seem most significant to HCNRA visitors. Discuss potential arrangements by which such impairments could be removed as well as potential legal, economic, or social barriers to removal of such scenery impairments.

Standard Sce-S1

Do not allow any new constructions, upgrades, or developments which impair the natural scenic resource.

Objective Sce-O2

Restore landscapes that are unnecessarily construction-impaired by removing such impairments and rehabilitating scars and impacts.

Guideline Sce-Gu1

Analyze with Idaho Power Company, through the relicensing process, the benefits of relocating the two sets of power transmission lines that cross the HCNRA: The lines from Oxbow Dam that run down the Imnaha River Valley and cross the Snake River into Idaho near China Bar, and the lines from Hells Canyon Dam that run over Saulsberry Saddle and exit the HCNRA near the Pallette Ranch.

SCIENCE/EDUCATION

The art of land doctoring is being practiced with vigor, but the science of land health is yet to be born.

A science of land health needs, first of all, a base datum of normality, a picture of how healthy land maintains itself as an organism.

In short all available wild areas, large or small, are likely to have value as norms for land science. Recreation is not their only, or even their principal, utility.

Aldo Leopold, *A Sand County Almanac* (1949)

Goal Sci-G1

Much of the HCNRA will serve as a control ecosystem for studying natural restoration from adverse impacts of past human activities. Other areas will serve as an "outdoor laboratory" for studying the consequences of ongoing, least-impact human activities.

All information relied upon by HCNRA staff as scientific will have been gathered and interpreted using appropriate scientific methodology.

The HCNRA will be widely recognized as a place where non-destructive research opportunities are provided; research relevant to HCNRA goals is encouraged; and relevant research is incorporated into planning and decisionmaking regarding human activities within the HCNRA.

Objective Sci-O1

Establish procedures for encouraging, supporting, and using scientific research relevant to HCNRA goals.

Guideline Sci-Gu1

Publish, each six months, a list of scientific research questions that would be appropriate for college students classes; graduate student classes theses, and dissertations; scientists; and scientifically-skilled citizens to undertake and which would significantly contribute to realization of HCNRA goals.

Such a list should include questions of:

- toxicology
- geography
- botany
- forestry
- genetics
- wildlife biology
- history
- Native American studies
- economics
- sociology
- journalism
- law
- sociology
- hydrology
- entomology
- political science
- environmental studies
- cartography
- fisheries
- civil engineering
- archaeology

Guideline Sci-Gu2

Prepare a semi-annual report for the scientific community and the public on scientific research and surveys that are being undertaken within the HCNRA, with a summary of each research project and its significance for HCNRA goals. Include information on granting sources to which scientists and students might apply for research support for non-invasive research within the HCNRA.

Guideline Sci-Gu3

Prepare materials which introduce prospective researchers to the HCNRA goals, and encourage them to undertake research relevant to understanding and allowing natural restoration processes, determining compatibility of human activities with HCNRA Act 7(1-6), documenting progress toward HCNRA goals and objectives, and documenting and providing ecosystem and fish and wildlife baseline and trend information.

Objective Sci-O2

Articulate principles for research on the HCNRA

Standard Sci-S1

Establish written principles for experiments in the HCNRA including provisions for peer review; avoidance of environmental disruption; accessibility of results to the public; and sound scientific methodology.

Objective Sci-O3

Minimize reliance on "professional judgment" for conclusions that can and should be backed by scientific information.

Standard Sci-S2

Insure the scientific integrity of discussions and analyses regarding ecosystem and wildlife impacts, conditions, and trends within the HCNRA.

Guideline Sci-Gu4

Whenever possible, identify methodologies used and scientific and other sources relied upon for conclusions.

Objective Sci-O4

Monitor all major human activities within the HCNRA (including activities undertaken as recovery or restoration) in conjunction with meaningful control areas free of such activities and no-impact or least-impact alternative activities, in order to determine (a) the compatibility of these human activities with the protection and recovery of native ecosystems, wildlife, and vegetation; and/or (b) the comparative movement toward recovery goals.

Objective Sci-O5

Develop and provide simple educational materials for users of the HCNRA regarding wildlife and ecosystems that will help the users understand and better protect the HCNRA (See Science note 1).

Guideline Sci-Gu5

Conduct simple surveys regarding HCNRA users' understanding of fundamental and elementary ecosystem concepts and develop a list of ten to fifteen of the most critical concepts which relate to protection and recovery of HCNRA habitat and ecosystems. Prepare simple, one-page sheets on each concept for display in visitor centers and availability to teachers.

Notes for Science

1. *The* "public" cannot be expected to participate in protection and the future of the HCNRA on an informed basis if they do not understand critical concepts regarding habitat loss and potential, native vegetation and non-native vegetation; how ecosystems can degrade gradually over time and how difficult or impossible recovery can be; the interrelationship of bioregional wildlife and habitat conditions and corridors within the HCNRA; the extent and nature of riparian habitat within the HCNRA; the potential consequences of various types of human activities; the history and conditions favoring noxious weed introduction, establishment, and spread; etc.

SOIL

Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soil, plants, and animals. Food chains are the living channel which conduct energy upward; death and decay return it to the soil. The circuit is not closed; some energy is dissipated in decay, some is added by absorption from the air, some is stored in soils, peats, and long-lived forests; but it is a sustained circuit, like a slowly augmented revolving fund of life.

Aldo Leopold, *A Sand County Almanac* (1949)

Goal Soi-G1

HCNRA soils will be biologically healthy and biologically diverse. The soils will support biological diversity and biological integrity appropriate to soil mineralogic, hydrologic, organic, and biologic characteristics, and soil type. HCNRA soils will exhibit and maintain complete horizons appropriate to the soil type. The soils will be uncompacted, permeable as appropriate to mineralogy and structure, and provide a reservoir of groundwater which is hydrologically connected to surface streams. The soils will contribute to water quality, quantity, and aquatic system water flows. The soils will contain organic content and nutrients that will support a healthy and diverse native vegetative cover. Bioturbation will be a significant component of soil structure, activity, and development. The rate of soil formation and maturation will be sufficient to replenish loss of soil to erosion for any one soil type at any locality. Soil erosion will be minimal, and restricted to natural geologic rates based upon erosion of healthy, native-vegetated soils during storm and other natural events. Soil temperatures will be moderated by vegetative cover and hydrologic characteristics. ***Affirmed 4/2/99***

Management of human activities in the HCNRA will recognize not only the central importance of soils, but also their vulnerability to degradation and, depending on the intensity of disturbance, the often very long times required to recover soil function and integrity. Management of human activities will incorporate the reality that even subtle degradation of soil qualities can reduce resiliency, reduce the ability of the soil to hold nutrients, and leave soils more vulnerable to further insult. Management-induced erosion, nutrient losses, and mass wasting will be avoided. Management of human activities will avoid the historical failure to meet existing soil standards, failure to respond adaptively to results of monitoring, inadequate inventory of conditions prior to activities, and failure to establish adequate reference or control areas.

Objective Soi-O1

Complete a soil survey of HCNRA, using existing data where possible, with 20% groundtruthing. New information will be entered on a continuous basis.

Standard Soi-S1

Establish reference or control areas representative of excellent soil conditions of all major types within the HCNRA.

Guideline Soi-Gu1

Initiate research partnerships to define parameters of biologically healthy soil in the HCNRA.

Objective Soi-O2

Establish soil restoration priorities based on the inherent productive potential of soils and the degree of degradation, with heavily-impacted, highly productive soils as the highest priority. Establish such priorities in the context of watershed-level restoration plans (see section on "Wildlife Habitat: Riparian").

Standard Soi-S2

Soils on sites affected by fire will not be disturbed by human activities (except for revegetation with native plants, if necessary) until revegetated by natural processes, and a minimum of five years has passed.

Standard Soi-S3

Management activities to stabilize soils on previously disturbed sites or on management sites will utilize only native vegetation wherever feasible, and will not be revegetated if this alternative is feasible. Natural revegetation of disturbed sites is preferred. If non-native vegetation is used, only those species demonstrated to not persist and spread will be allowed.

Standard Soi-S4

Use of fertilizers to accelerate tree growth will not be appropriate, although they may have limited use in restoration of heavily degraded soils or to establish vegetation on highly disturbed sites such as road cuts (See Soil note 1). Measures necessary to keep fertilizers out of streams must be stated and followed.

Objective Soi-O3

Where human management activities cause soil compaction, minimize compaction, enhance soil permeability, and restore or maintain soil structure.

Standard Soi-S5

Soil compaction shall not exceed a 10% increase in bulk density nor more than 10% of an activity area. The limit of 10% by area shall include allocations to permanently non-productive uses such as roads, developed recreation sites and trails, which should not exceed 5%. The limit of no more than 10% increase in bulk density applies to all HCNRA lands.

Standard Soi-S6

Subsoiling may be carefully used to attempt to rehabilitate previously compacted areas but shall not be prescribed as mitigation to offset compaction from planned management activities. Ripping is not an appropriate method of treating compacted soils.

Objective Soi-O4

Except where unavoidable,soils will not erode except at geologic rates, and erosion will not exceed local rate of soil production on any one site or soil type unless it can be demonstrated that excess erosion is an entirely geological process. ***Modified 4/2/99***

Objective Soi-O5

Soil aquifer and hydrologic characteristics will be maintained.

Standard Soi-S7

The connection of soil to streams will be monitored, including the function and biota of the hyporheic zone adjacent to streams.

Objective Soi-O6

Maintain woody debris and other organic debris, including grass and forb stems, which are vital to soil health. Adequate cover and supply of dead and decaying organic material will be maintained to insure soil health.

Standard Soi-S8

On all human-management activities, a predetermined percent of ground cover after such activities will be large woody debris of a predetermined minimum diameter, or other organic debris (in non-forested locations) left to decay into organic material for soil nutrient replenishment (See Soil note 2). The percentage and size of woody or other organic debris will be pre-determined based on scientific evidence of sufficiency to allow protection and recovery of soil health.

Standard Soi-S9

Restore and protect soil organic matter (i.e., carbon source) based on levels of organic matter found on equivalent soil types in reference areas considered to have excellent soil organic conditions. ***Modified 4/2/99***

Objective Soi-O7

Minimize soil disturbance.

Objective Soi-O8

Implement appropriate education about the importance of soil and the connectedness of soil and the ecosystem for the public and all members of the HCNRA staff; importance and connectedness and care of soils for commercial operators on the HCNRA; and measurement and recognition of soil health and damage for HCNRA staff and commercial operators.

Standard Soi-S10

Soil conditions will be monitored for maintenance or recovery of biotic health before, during, and every two years after a given recreational or commercial human activity is permitted. If the activity is not monitored for key indicators of soil health every two years, the permit will be revoked and the activity halted.

Standard Soi-S11

Incorporate in all alternatives within proposals for commercial and recreational human activities within the HCNRA a discussion of the nature, schedule, and costs of monitoring that will be required to comply with soil goals/objectives/standards and guidelines. The nature, schedule, and costs of monitoring will vary among the alternatives.

Standard Soi-S12

Permit-holders are responsible for documenting protection or recovery of soil biotic health in a measurable, reproducible manner every two years.

Notes for Soil

1. Weeds are generally favored over native, non-weedy vegetation on artificially-fertilized sites.

2. Large woody debris, especially large logs, are essential to retain soil moisture and moderate soil temperatures.

VEGETATION

The earth's vegetation is part of a web of life in which there are intimate and essential relations between plants and the earth, between plants and other plants, between plants and animals. Sometimes we have no choice but to disturb these relationships, but we should do so thoughtfully, with full awareness that what we do may have consequences remote in time and place.

Rachel Carson, *Silent Spring* (1962)

Goal Veg-G1

Native vegetation will be present in stages of succession and in proportions of such stages as are necessary to sustain longterm native vegetation composition and processes.

Recovery of native vegetation from human-related disturbances will, whenever possible, occur through natural processes of thinning, replacement, and succession.

Native species that have been extirpated from the HCNRA will be restored, whenever possible. Non-native plant species currently in the HCNRA will be present in the HCNRA only at levels that do not interfere with native plant protection and restoration. Non-native plant species will not be introduced into the HCNRA. Cultivated fields will be converted, where feasible, to native bunchgrass ecosystem species suitable for use as seed sources for native bunchgrass restoration elsewhere in the HCNRA region. ***Modified 4/20/99***

Objective Veg-O1

Map vegetative groundcover components, and forest overstory of plant communities for the whole of the HCNRA in an iterative process, beginning with existing data (i.e., some areas of the HCNRA will be much less detailed than other areas at first). Update the mapping annually with information that has been gathered during the year.

Guideline Veg-Gu1

Use existing data wherever possible, and determine which data are most in need of groundtruthing. Determine major gaps in data, and implement cost-effective, but sufficient, methods to fill these major gaps.

Standard Veg-S1

Establish permanent plots and transects, where not yet established, to cover the range of diversity, including plots in disturbed areas of all major vegetation types.

Guideline Veg-Gu2

Gather and compile data with communication in mind: With existing GIS data bases, commonly used software, non-Agency scientists, students, scientific and citizen organizations, and the public.

Standard Veg-S2

Prepare a report on the presence and degradation of microbiotic crusts in various areas within the HCNRA (See Vegetation note 1).

Objective Veg-O2

Prepare and implement a recovery plan for damaged microbiotic crusts within the HCNRA.

Standard Veg-S3

Establish monitoring plots for condition of microbiotic crusts in grassland and ponderosa pine areas which have experienced various degrees of livestock and other disturbances, and in areas slated for recovery efforts.

Objective Veg-O3

Reverse trends of declining native plant species in the HCNRA via a "Declining Native Plants" management plan. ***Modified 4/2/99***

Standard Veg-S4

The "Declining Native Plants" management plan should include the following direction:

1. Estimate the relative population decline of all native plant species in the HCNRA. ***Modified 4/2/99***
2. Establish protection and enhancement priorities for declining native plant species.
3. Establish interpretive opportunities and priorities.
4. Develop research design and establish research priorities for Understanding the decline of particular declining native plant species. ***Modified 4/2/99***
5. Develop a protection and restoration plan for declining native plant species. ***Modified 4/2/99***
6. Establish monitoring priorities and develop a monitoring plan and monitoring schedule.
7. Develop/establish inventory priorities for uninventoried portions of the HCNRA.

Standard Veg-S5

In all revegetation efforts, use, if at all possible, native seed and seedlings that have been grown from seeds of plants closest to the habitat being revegetated.

Objective Veg-O4

Determine the feasibility of providing habitat that has been extirpated or nearly extirpated for native plant species in HCNRA.***Modified 4/2/99***

Standard Veg-S6

Prepare a public report on reintroduction potentials, including foreseeable human activities or developments that would foreclose options for such reintroductions.

Standard Veg-S7

In all proposals for human activities, include a discussion of each alternative's potential for allowing, encouraging, retarding, or foreclosing reintroduction of native plant species.

Objective Veg-O5

Determine the extent of presence of native and non-native vegetation within the HCNRA and the conditions that favor and prevent the presence, increases, or introduction of non-native vegetation.

Standard Veg-S8

Using existing data initially, prepare a map of presence of non-native vegetation in the HCNRA and condition of native vegetation habitats in the HCNRA. Identify and prioritize through existing data all significant information gaps. Improve and update the map every two years.

Objective Veg-O6

Prepare an analysis of the conditions and activities that prevent, minimize, or reverse (as well as facilitate) the introduction, establishment, spread, and reinvasion of specific non-native plant species (e.g., cheatgrass, ventanata, starthistle) in the HCNRA. Incorporate findings of the analysis in all activity planning, including livestock grazing permits and annual operating plans.

Standard Veg-S9

If an area is reseeded following fire or other disturbance, native species will be used whenever possible. When reseeding with non-native species, certification will have to be provided that only species that have been documented as non-persistent are present in the seeding mixture.

Objective Veg-O7

Adhere to all provisions within the U.S. Forest Service Pacific Northwest Region Vegetation Management EIS and Mediated Agreement for managing unwanted vegetation in order to document that prevention is the primary mode of approach to controlling noxious weeds within the HCNRA, and that non-chemical methods of treatment are given preference over chemical methods, whenever feasible.

Standard Veg-S10

Only non-persistent, non-bioaccumulative herbicide formulations for which all ingredients within the formulation are identified will be considered for use.

Standard Veg-S11

An approximate equal proportion of effort and commitments (e.g., funding, staff time) will be expended for (1) prevention of conditions that favor unwanted vegetation; (2) control of unwanted vegetation; and (3) restoration of sites that have been treated for unwanted vegetation.

Objective Veg-O8

Develop, with the input of knowledgeable scientists and citizens, a long term (e.g., 100-year) plan for prevention and minimization of unwanted vegetation within the HCNRA.

Guideline Veg-Gu3

Offer simple noxious weed identification/reporting forms to all visitors at HCNRA visitor centers, in order to encourage the reporting of locations in which particular noxious weeds are present. ***Guideline Added 4/20/99***

Objective Veg-O9

Ensure that all gathering of non-timber forest products (e.g., mushrooms, ferns, bear grass, huckleberries) in the HCNRA is on an ecologically sound and random, rather than thorough manner.

Standard Veg-S12

Prepare science-based protocols that must be signed by a person as a necessary part of receiving a permit to gather specific vegetation in the HCNRA for commercial purposes. The protocol will require:

(a) leaving sufficient amounts to ensure healthy populations; and

(b) using ecologically-sound methods of harvest.

Standard Veg-S13

If a permit condition is violated, enforcement that obviates profits will be pursued.

Guideline Veg-Gu4

Prepare science-based protocols that must be observed by visitors gathering vegetation for recreational or personal purposes. Distribute a copy of this protocol to all visitors requesting information on such activities, and to visitors observed gathering non-timber forest products. ***Renumbered 4/20/99***

Objective Veg-O10

Use or develop survey and management protocols for uncommon plant species. Particular attention will be directed at survey and management protocols for lichens, fungi, and vascular and non-vascular plants.

Standard Veg-S14

Incorporate habitat redundancy (i.e., surplus habitat, and large habitat areas and populations distributed across the landscape similar to its historical distribution) to anticipate natural variability, the potential for habitat loss, and human ignorance of habitat needs.

Notes for Vegetation

1. *These crusts of lower plants and cyanobacteria cover soil surfaces in healthy arid grasslands and dry ponderosa pine woodlands. They fix nitrogen, increase soil fertility, improve water infiltration, stabilize soils, and enhance the establishment of vascular plants. They are particularly susceptible to damage from physical disturbance.*

WILD AND SCENIC RIVERS

But we who seek wilderness travel for sport are foiled when we are forced to compete with mechanized substitutes.

Aldo Leopold, *Sand County Almanac* (1949)

Goal WSR-G1

Wild and Scenic Rivers (Snake, Imnaha, and Rapid Rivers) within the HCNRA will receive holistic protection as rare combinations of aquatic, terrestrial, and atmospheric habitats; rare combinations of outstanding and diverse ecosystems and parts of ecosystems (see Biologically Unique Habitat); and riparian habitat affected by entire watersheds (see Wildlife Habitat: Riparian). Recreational use of the Wild and Scenic Rivers will be primarily non-motorized (see Access and Facilities and Recreation) and the mix of uses of the river corridor will be compatible with wilderness values. Human recreational uses of the Wild and Scenic Rivers will be managed so as to allow all users opportunities for solitude, wildlife viewing, and awareness of the connection of the river to wildlife.

The Snake Wild and Scenic Snake River corridor between Hells Canyon dam and Willow Creek will serve as a connector corridor for wildlife between designated Wilderness on the Idaho and Oregon side. South of Hells Canyon dam and north of Willow Creek, the River will serve as a buffer for the Hells Canyon Wilderness, with users' influence (e.g., unnecessary noise) modulated so as to avoid intrusion upon the Wilderness.

Recreational and commercial uses of all HCNRA Wild and Scenic Rivers will be permitted only as compatible with the wilderness values of the HCNRA. The outstanding qualities that caused these rivers to be included in the public sanctuary system of Wild and Scenic Rivers will be protected consciously against over-use by the public.

Objective WSR-O2

Recognizing that a designated river can be "loved to death," limit human use within the Wild and Scenic River corridors as necessary to protect all outstanding and remarkable values for which the Wild and Scenic River designations were obtained.

Standard WSR-S1

Emergency, essential administrative, and research use of motorized watercraft will be allowed in the Wild and Scenic sections of the Snake River; and recreational use of eligible motorized boats will be allowed in the Scenic section of the Snake River at levels existing at the time of Congressional designation of the Snake Wild and Scenic River (when regulation of numbers was mandated) and to operation of non-motorized river craft, compatible with the Snake River outstanding values (see Wild and Scenic Rivers note 1).

Standard WSR-S2

Establish speed, noise, and no-wake rules on all HCNRA Wild and Scenic rivers commensurate with wilderness values of the HCNRA.

Standard WSR-S3

Facilitate public monitoring of use of rivercraft by requiring all rivercraft to display a large permit number on the bow and stern.

Notes for Wild and Scenic Rivers

1. The proposal for no motorized use of the Wild section of the Snake River acknowledges that the 1995 Snake Wild and Scenic River Management Plan allows recreational motorized watercraft within the Wild portion of the Snake River and that Karyn Wood indicated in the fall of 1998 that she will not alter the Plan's provisions for recreational jetboat use of the Wild section of the Snake River. However, it is the understanding of many citizens that such use does conflict with the legal description of Wild Rivers as "vestiges of primitive America;" eliminates solitude values within the immediately adjacent Hells Canyon Wilderness; and contradicts at least the spirit of the HCNRA Act, which provides for protection of "wilderness values" throughout the HCNRA, Sec. 7(2). Therefore the Native Ecosystem Alternative proposes that motorized watercraft be eliminated from the Wild section of the Snake River.

WILDERNESS

Wilderness is a resource which can shrink but not grow.

Aldo Leopold, *A Sand County Almanac* (1949)

Man [sic] is rich in proportion to the number of things which he can afford to let alone.

Henry David Thoreau

The HCNRA was designated for its wilderness values as well as its biologically unique native ecosystems. Therefore, "wilderness values" refer to the entire HCNRA, not just Congressionally-designated Wilderness within the HCNRA. It is legally required and responsible to protect wilderness values throughout the HCNRA.

Goal Wil-G1

The area within the HCNRA that is Congressionally designated as Wilderness will be truly wild, with least possible human impact. The Wild and Scenic Snake River corridor and other HCNRA lands and access areas surrounding the Wilderness will serve as a buffer for the Wilderness, with humans' influence reduced so as to avoid intrusion upon the Wilderness, rather than areas within the Wilderness boundaries serving as a buffer for intruding human impacts, such as unnecessary motorized noise. Access points will be present as adequate. Humans who enter the Wilderness area will find a primitive and powerful experience, and will leave civilization behind to meet the wilderness on its own terms. Risk will be present in this wilderness. Natural processes and ecosystem function will be paramount in the wilderness area. Natural processes will operate freely.

Landscapes and views within the Wilderness will be conserved as completely natural, including only native biological objects and Native American sites.

Wilderness values of remoteness, ruggedness, solitude, and natural ecosystem processes are rapidly disappearing within the Intermountain West and the Columbia River bioregion. The HCNRA will, to the extent feasible, contribute to the retention and recovery of such values throughout the HCNRA. Human visitation to the HCNRA on its own wilderness terms will be retained and recovered as feasible throughout the entire HCNRA.

Human solitude and close contact with natural systems will be provided and restored as feasible throughout the HCNRA, while the Congressionally designated Wilderness is an area maximally free from human impacts. Risk will be a part of this wilderness experience. The Wilderness will be virtually unmanaged, and risk to humans from natural forces and causes (including predators, climate/storms, unmanaged trails, and geologic forces) will be treasured.

Objective Wil-O1

Examine the potential to reverse degradation of wilderness values within the HCNRA through key road closures, de-emphasis on motorized recreation, recovery and enhancement of native ecosystems, reintroduction of extirpated wildlife, and encouragement of human slowness rather than speed throughout the HCNRA.

Guideline Wil-Gu1

Prepare a report on the potential recovery of wilderness values within the HCNRA for the purposes of public discussion, preparation of alternatives within project proposals, and longterm planning options for the HCNRA.

Objective Wil-O2

Articulate and protect the potential for human solitude within the Wilderness. **Modified 4/2/99**

Standard Wil-S1

Retain the number of current trails and access points as adequate.

Standard Wil-S2

Provide no developed camping areas.

Standard Wil-S3

Access will be only by foot or horseback.

Standard Wil-S4

Articulate to the public the challenge of physical access as part of the meaning of Hells Canyon wilderness.

Standard Wil-S5

In the case of overcrowding or overuse of the Wilderness, the HCNRA will give priority to maximizing wilderness values throughout the entire HCNRA (e.g., minimizing motorized use) in preference to restricting numbers of humans accessing the limited area currently designated as Wilderness. Permitting will be used as a last resort to protect the Wilderness from overcrowding.

Objective Wil-O3

The Wilderness will be free of motorized traffic and mechanized equipment, except in the case of emergencies regarding human life, and, on a case-by-case basis, reintroduction of native wildlife species or minimum-tool protection from fire of historically significant structures (see non-nat-o1; see Wilderness note 1). **Modified 4/2/99**

Standard Wil-S6

The Forest Service will pursue a memorandum of understanding with the Federal Aviation Administration so that aircraft will remain 2000 feet above the canyon rim except in case of medical, fire-fighting, or other emergencies; or, on a case-by-case basis with the Forest Service, for wildlife monitoring, research, or essential administrative purposes.

Standard Wil-S7

The Wilderness will be free of non-motorized and motorized vehicles, and motorized watercraft.

Standard Wil-S8

Tools and equipment used within the Wilderness will be non-motorized.

Objective Wil-O4

Provide a transition in the river corridor and lands surrounding the Wilderness from management and minimal motorization to the unmanaged, non-motorized, Wilderness, thus providing a buffer around the Wilderness from human activities that would otherwise intrude upon and further limit the Wilderness.

Standard Wil-S9

There will be no construction of paved parking lots, interpretive centers, or other developed facilities alongside the wilderness boundary and access points. **Modified 4/2/99**

Objective Wil-O5

Paragliding, hang-gliding, glide planes and other aerial sports are considered overflights below the canyon rim, and are prohibited.

Objective Wil-O6

Only non-motorized watercraft will be present in the Wild section of the Snake River, which is adjacent to the wilderness.

Objective Wil-O7

Remove structures or features that impinge upon native, natural vistas.

Objective Wil-O8

Introduced non-native vegetation represent a threat to the native ecosystem, and will be controlled or eliminated as feasible, using ecosystem recovery, whenever feasible. Least-intensive management will be used to restore native vegetation.

Standard Wil-S10

Mechanical and biological control measures are to be used unless the non-native plant has been present for only a few years, and the feasibility of elimination through a single application of a non-persistent, non-bioaccumulative herbicide formulation, the inert ingredients of which are known, has been demonstrated.

Objective Wil-O9

Examine potential for use of foot/packing trails to degrade ecosystem function.

Standard Wil-S11

When use of trails causes ecosystem degradation, consider (a) reduction of use of trails through permitting; and (b) reduction of motorized access to the trailhead.

Guideline Wil-Gu2

Provide the public with adequate information about no-trace camping.

Standard Wil-S12

Monitor for impacts of human use within the Wilderness, and prepare an annual report of these impacts, as well as the strategy and commitments to avoid and eliminate such impacts.

Objective Wil-O10

Allow natural conditions, including tree blowdowns, earth movements, and fire scars to remain except to open and maintain trails in conditions that meet only minimum standards. User maintenance will be emphasized.

Objective Wil-O11

Human management activities intended to benefit the ecosystem (livestock grazing is considered a use, not beneficial management) will be absent except to reintroduce historic native species, minimize human impacts, control human-caused fire, maintain certain trails to minimum standards, and monitor human impacts on the Wilderness. On a case-by-case basis, treatment of noxious weeds combined with restoration of treated sites to native vegetation may be permitted. ***Modified 4/2/99***

Objective Wil-O12

Allow fire to resume its role in the ecosystem.

Standard Wil-S13

Naturally set fires will generally be uncontrolled; suppression efforts will generally not be undertaken before a fire leaves the wilderness (see Wilderness note 2). ***Modified 4/2/99***

Standard Wil-S14

Fires will be controlled if they are shown prior to dispatch of fire fighters to have originated by human cause.

Standard Wil-S15

Structures within the Wilderness will not be saved from fire, unless they have been designated as historically significant and can be saved with minimal adverse impact on the natural ecosystem. ***Modified 4/2/99***

Standard Wil-S16Areas will recover from fire naturally, without human intervention.

Notes for Wilderness:

1. Fire suppression activities within the Hells Canyon Wilderness should make use of the least damaging equipment and methods. For instance, hand-built fire lines and backfires are preferred; use of chainsaws and axes should be minimized; and aircraft water drops are preferable to chemical fire retardants. To the maximum

*extent possible, the use of motorized earth-moving equipment such as bulldozers and fire plows should be confined to areas outside Hells Canyon Wilderness. **Added 4/2/99***

*2. Natural fuel breaks where fires can be suppressed with little evidence, such as rivers, streams, rocky ridges, and other non-vegetated areas can be identified in advance. Artificial fire breaks can be constructed outside the Wilderness boundaries, and planned-ignition fires within the Wilderness can be contain a fire in the Wilderness or reduce its intensity. **Added 4/2/99***

WILDLIFE HABITAT

The National Parks do not suffice as a means of perpetuating the larger carnivores; witness the precarious status of the grizzly bear, and the fact that the park system is already wolfless. Neither do they suffice for mountain sheep; most sheep herds are shrinking.

The reasons for this are clear in some cases and obscure in others. The parks are certainly too small for such a far-ranging species as the wolf. Many animal species, for reasons unknown, do not seem to thrive as detached islands of population.

The most feasible way to enlarge the area available for wilderness fauna is for the wilder parts of the National Forests...to function as parks in respect of threatened species. That they have not so functioned is tragically illustrated in the case of the grizzly bear.

Aldo Leopold, *A Sand County Almanac* (1949)

Goal Wld-G1

Indigenous wild species will be present in the HCNRA at functionally significant or large population sizes rather than minimum viable population sizes.

Native wildlife that have been extirpated from the HCNRA will be restored, whenever possible. Non-native wildlife currently in the HCNRA will be present in the HCNRA only at levels that do not interfere with native wildlife protection and restoration. Non-native wildlife will not be introduced into the HCNRA.

The distribution and diversity of genetically vigorous populations of indigenous wild species will be protected as integral with ecosystem integrity and rehabilitation, recognizing the importance of Hells Canyon's unique capabilities within the Columbia River Basin and the western Northern Rockies. Three management areas within the HCNRA focus on the habitat for most HCNRA wildlife species: Forest, Grassland, and Riparian.

Objective Wld-O1

Gather data on current native wildlife use and populations, correlating with the vegetation and soils mapping (See Vegetation and Soils).

Guideline Wld-Gu1

Use existing data wherever possible, and determine which data are most in need of field confirmation. Determine major gaps in data, and present cost-effective, but sufficient, methods of filling these major gaps.

Guideline Wld-Gu2

Gather and compile data with communication in mind: With existing data bases, commonly used software, non-Agency scientists, students, scientific and citizen organizations, and the public.

Objective Wld-O2

Identify and characterize areas and species in need of recovery (rehabilitation), explicitly including consideration of connecting habitat within the bioregion, environmental threats (human and natural), habitat quality, unequal abundances in similar habitat types. (Coarse filter habitat relationship models fail to consider these elements which are crucial for uncommon species.)

Objective Wld-O3

Reverse the decline of native wildlife species in the HCNRA via the development of a "Declining Native Wildlife" management plan.

Standard Wld-S1

The "Declining Native Wildlife" management plan should include the following direction:

1. Estimate the relative significance of decline of all native wildlife species in the HCNRA.
2. Establish protection and enhancement priorities for declining native wildlife species.
3. Establish interpretive opportunities and priorities.
4. Develop research design and establish research priorities for declining native wildlife species.
5. Develop a protection and enhancement plan for declining native wildlife species.
6. Establish monitoring priorities and develop a monitoring plan and monitoring schedule.
7. Develop/establish inventory priorities for uninventoried portions of the HCNRA.

Objective Wld-O4

Determine the feasibility of reintroducing, and providing connecting habitat for extirpated wildlife species such as the wolf, grizzly bear, wolverine, lynx, and Columbia sharptail grouse.

Objective Wld-O5

Prepare a public report on reintroduction potentials, including foreseeable human activities or developments that would foreclose options for such reintroductions.

Objective Wld-O6

Develop survey and management protocols for uncommon species (i.e., rare, threatened, sensitive, or declining) that have average home range sizes smaller than five acres (e.g., amphibians), similar to those adopted for federal lands within the range of the Northern Spotted Owl. Particular attention will be directed at developing survey and management protocols for amphibians, mollusks, arthropods, and non-flying mammals.

Objective Wld-O7

Develop species conservation plans for long-distance migratory species (e.g., neotropical migratory birds) and uncommon mobile species (i.e., average home range five acres or larger). The species conservation plans will include a discussion of major threats to viability, mitigation measures that address these threats, and requirements for habitat protection (including minimum size, distribution, and connectivity of required habitat patches) needed to ensure that viable, well-distributed populations exist for species with identified concerns.

When data are lacking to prepare quantitative viability analyses, species viability will be qualitatively assessed. Qualitative species viability assessments will estimate current status as one of at least four potential conditions:

1) Well-distributed across its range within eastern Oregon and Washington and western Idaho;

2) locally restricted;

3) restricted to refugia;

4) at risk of extirpation.

Standard Wld-S2

Priority species for in-depth assessment and development of management and conservation plans include:

a) Extinction-prone species;

b) Keystone species: Species which influence the occurrence or abundance of other organisms or play an important role in maintaining biological process;

c) Indicator species: Species whose occurrence or abundance indicate changes in habitat or human activities;
d) Mobile-link species: Species which play a critical role in more than one food chain, plant-animal association, or ecosystem.

Standard Wld-S3

The following guidelines will be applied in the development of species conservation plans and management scenarios (see Wildlife note 1):

a) Maintain connectivity for all species requiring dispersal and migration habitat either by maintaining/restoring discrete habitat corridors, or by implementing management guidelines that will assure sufficient habitat conditions across the majority of the landscape for dispersal, migration, and recolonization between subpopulations.

b) Incorporate habitat redundancy (i.e., surplus habitat, and large habitat areas and populations distributed across the landscape similar to its historical distribution) to anticipate natural variability, the potential for habitat loss, and human ignorance of habitat needs.

Standard Wld-S4

Establish monitoring protocols and schedules that are sufficient to detect positive and negative population trends. Build such monitoring into permits for human uses of the HCNRA, projects, and volunteer programs within the HCNRA (e.g., organized volunteer projects, research by independent scientists and students).

Standard Wld-S5

For each alternative in a proposal for human activities within the HCNRA, indicate the expected cost of monitoring for compatibility of the activities proposed in that alternative with HCNRA Section 7(1-6) and for trends in population size of species which may be affected by the activities. Those alternatives which propose activities with no or least impact will be less expensive in terms of monitoring than those activities that are more destructive of the environment and human health.

Notes for Wildlife

1. Currently, biologists at the U.S. Forest Service Pacific Northwest Research Station in La Grande, Oregon do not routinely develop management prescriptions. However, a specific request from the HCNRA regarding the advice from biologists at the Experiment Station for management of specific aspects of wildlife habitat could generate useful suggestions from scientists familiar with the ecological conditions present in the HCNRA.

WILDLIFE HABITAT: FORESTS

Health is the capacity of the land for self-renewal.

Aldo Leopold, *Sand County Almanac* (1949)

We have forgotten the option of restraint.

Terry Tempest Williams, "To Be Taken" (1998)

Goal For-G1

Approximately 20 percent of the HCNRA exists in forest cover. Native forest habitat, structure, function, and a diversity of forest conditions (e.g., burned areas, diseased areas, old growth, diverse forest plant communities, successional stages later than grass, seedlings) will be protected and restored as possible through natural forest processes reflected in the natural capability of the land. Native fauna as well as the forest habitat upon which it is dependent will be maximized. ***Corrected per 5/11/99 e-mail message***

Native forest habitat on the HCNRA will be maximized rather than creating or duplicating habitat conditions which exist in abundance on non-forested areas of the HCNRA (e.g., grasslands, meadows, openings, edges).

Native forest structure and functions will be protected and restored with least-intensive management whose objective is ecological, not commercial. Vegetation activities that may reduce the protection and recovery of native forest ecosystem and wildlife habitat will be minimized to the extent possible.

Objective For-O1

Identify existing forest vegetative structures, habitat types, and conditions throughout the NRA for use as a baseline in planning and decisionmaking.

Objective For-O2

Analyze the forested landscape of HCNRA, utilizing existing data (e.g., GIS, TRI, stand analyses, landsat data). The smallest analysis area is 15,000 acres. Groundtruth 20% of every condition type in the HCNRA to verify the data and data interpretation within the analysis.

Standard For-S1

Landscape analysis will be completed within five years of adoption of this plan. This HCNRA-wide analysis will be verified through 20% groundtruthing of each habitat type. (The Forest Service should encourage the use of volunteers and volunteer groups for groundtruthing.) All data from this analysis will be entered into a database. As conditions change through effects of fire, insects, disease and human activities, the database will be updated. These updates will occur annually. Groundtruthing of 20% of the updates and 5% of the HCNRA-wide analysis will occur annually.

Objective For-O3

Identify all existing old growth within the HCNRA. This will become Designated Old Growth, and will be protected from any and all logging activities.

Guideline For-Gu1

Create a new and updated definition of old growth (in accordance with scientific research and specialists in old growth) to reflect not only specific components of habitat, such as snags and down woody material,

but also (a) the characteristics of advanced successional stages and plant communities; and (b) different northeastern Oregon climax types related to site.

Standard For-S2

Coniferous old growth will be defined as coniferous forests with at least one overstory tree more than 150 years old or greater than 21 inches in diameter. One such tree would be surrounded by a minimum one-half (0.5) acre of designated old growth site if some other features of an old growth ecosystem are present, or the site has potential for restoration of old growth characteristics. Dead standing and fallen trees are usually present on every acre of old growth sites. Size **or** age suffice to characterize trees in coniferous old growth forests.

[Note: Only old growth sites ten acres or larger bring a 500-acre protection designation, see Standard For-S4.] ***Modified 4/2/99***

Standard For-S3

Designated old growth areas will have buffer zones (250' corridor surrounding the old growth area) to maintain feeding and nesting areas for old growth-dependent species. Only compatible activities will be allowed in buffer areas. Prohibit within the buffer zone any practice that limits the feeding and nesting use of the designated old growth area. (For example, many old growth areas are smaller than the nesting territories of pileated woodpeckers. Improving the down woody material and shade in the buffer zone will add to their food supply of ants. Prohibit removal of such material or shade.) ***Modified 4/20/99***

Standard For-S4

All old growth areas will be protected from logging. Any designated old growth site ten acres or larger will be protected to a minimum area of 500 acres. Within those 500 acres, non-old growth habitat will be allowed to naturally proceed toward late-successional old growth conditions.
Modified 4/20/99

Standard For-S5

Within five years, a minimum of 10% of the forested land of the HCNRA will be designated old growth or additional protected areas (i.e., the 500-acre minimum areas, buffer zones).

Objective For-O4

Allow fires, native insects and native pathogens to influence forest structure and function through endemic (and epidemic) population levels. Evaluate the role of non-native insects and pathogens on a case-by-case basis for their potential to mimic the roles of native insects and pathogens. Don't try to improve things where nature is already working to fix itself.

Guideline For-Gu2

Support beneficial impacts of pests on the ecosystem by maintaining a variety of species, successional stages, and conditions throughout the forest, avoiding monocultures and limiting stressful growing conditions.

Standard For-S6

If non-native insects or pathogens are damaging the function or succession of forests, suppression activities may be undertaken only if such activities do not cause additional stresses (e.g., introduction of toxic chemicals) to the system.

Objective For-O5

Allow sites disturbed by fire, insects, pathogens, wind or other "pests" to recover naturally.

Standard For-S7

Exclude salvage and sanitation harvests from the HCNRA.

Objective For-O6

Maintain native understory grass swards in sufficient diversity, density, and cover to carry cool fires and control tree seedling establishment.

Standard For-S8

All proposals to permit or undertake livestock grazing will include an estimate of each alternative's comparative potential to protect, restore, degrade, or enhance the understory grass sward beneath forests.

Standard For-S9

Any decision to permit livestock grazing within a forested allotment will include establishment of adjacent, paired exclosures of sufficient size to establish documentation of consequences of the livestock grazing for tree seedling establishment, soil infiltration rate, grassland cover, soil litter, soil compaction, and runoff and erosion. Exclosures will be paired to match distinctive and significant soil and vegetation types of the forested allotment. at least one ecologically meaningful exclosure for each forest type that is being grazed by livestock in the hcnra will be established and referenced. ***Modified 4/2/99***

Objective For-O7

Undertake vegetative management only to maintain or rehabilitate structure and function within the ecosystem (e.g., to favor the growth of some individual trees or to favor species other than lodgepole that will grow to old growth size).

Guideline For-Gu3

Avoid duplicating conditions that already exist in non-forested habitat. For example, it is unnecessary to create openings in forested areas when openings already exist in nearby or adjacent nonforested areas.

Standard For-S10

To accomplish any necessary vegetative management, use the least mechanical/intensive methods to minimize impacts and maximize potential local employment.

Standard For-S11

All commercial vegetation management will be dependent on ecological need as determined by ecological analysis [see Figure 1. Forest Health Compatibility and Decision-Making in Hells Canyon NRA (Walder 1995), Forest note 1] and such management will be limited to specific stands with density or species composition problems. When ecological and commercial considerations diverge, ecological considerations will be utilized.

Standard For-S12

All thinning that takes place will remove only small diameter trees (i.e., less than 20 inches diameter at breast height (DBH), or even less, considering recruitment needs, hiding cover for game, etc.) thus enhancing stand structure and reducing fire risks.

Guideline For-Gu4

Excess material and fuel loading can be reduced through lop-and-scatter techniques. Under certain conditions (see Fire section), prescribed fire may be desirable to recreate the effects of a natural surface fire.

Standard For-S13

No new roads will be built for vegetative manipulation.

Standard For-S14

A finding that insects, pathogens, or other non-management processes are not sufficient to move the forests toward ecological health must precede any proposal for vegetation management.

Standard For-S15

Establish key indicators that management activities are moving the forest to the stated ecologically-improved condition, and monitor all vegetation management areas with scientifically appropriate control areas. Absent monitoring of the consequences of similar vegetation management activities within the previous year, additional vegetation management projects may not proceed.

Objective For-O8

Limit hazard tree removals to conditions that have been demonstrated to be hazardous, and only to such hazard trees directly adjacent to roads or within campgrounds.

Standard For-S16

Wildlife snags will be maintained, and hazard trees which are felled will be left on the site to decompose naturally and enhance soil conditions. (If fire risks are already too high on specific sites due to an overabundance of downed woody material, the felled trees will be transported to a more appropriate location in order to decompose naturally and enhance soil conditions.)

Standard For-S17

Any proposal to remove hazard trees adjacent to a road of Maintenance Level 1-3 will be preceded by an Environmental Assessment or Environmental Impact Statement which explicitly considers the benefits and drawbacks of road closure.

Objective For-O9

Maintain connectivity between different habitat types within forested habitat by protecting and enhancing travel corridors for wildlife.

Standard For-S18

Corridors will be at least 1/8 mile wide (660') in dense forest or 1/4 mile wide (1,320') in open forest conditions. ***Modified 4/2/99***

Standard For-S19

Riparian corridors will be maintained in addition to non-riparian travel corridors. The highest protection PACFISH standards will be used, until new standards are developed which offer greater protection to riparian areas.

Objective For-O10

Any area that may receive vegetative treatment or manipulation will first be analyzed for necessary snag retention based on needs of snag-dependent wildlife. Beneficial snag trees that meet, at minimum, these guidelines, will be marked for retention.

Firewood permits may be issued for specific areas to reduce fuel loads by down trees.

Standard For-S19

Firewood cutters who fell marked wildlife trees will be fined so as to eliminate any profit, and permits will be revoked permanently on the HCNRA. Fines will be used to help fund enforcement of firewood cutting regulations.

Standard For-S20

No firewood sale will be allowed prior to marking of wildlife trees.

Standard For-S21

Each year 25% of all firewood sales will be examined after firewood removal for documentation of percent retention of wildlife trees. Marking of wildlife trees for retention will be increased the following year in order to (a) compensate for unanticipated illegal losses in the previous year; and (b) a buffer of equal number to anticipate repeated failure to adequately protect wildlife-marked trees.

WILDLIFE HABITAT: GRASSLANDS

Goal Gra-G1

The grassland habitat of the HCNRA will be dominated by native vegetation and native animals, as native grassland is a biologically rare assemblage and critical wildlife habitat in the bioregion. Because of the profound alteration by humans of native bunchgrass lands throughout the bioregion, HCNRA grasslands management goals are therefore based primarily on protection and recovery.

Native grassland habitat within the HCNRA requires management that provides for:

1. Minimized disturbance of native grassland composition, structure, and functions (e.g., the ability to support cool fires; limit establishment of tree seedlings; provide soil permeability; avoid runoff and erosion; retain soil litter and microbiotic crusts; provide nutrients for native vegetation; and provide cover, forage, and nesting habitat for game and non-game grassland-dependent wildlife and invertebrates).

2. Restoration of native grassland structure and function through excellent riparian conditions and protection of soil from human-related disturbances.

3. Near-natural rates of recovery of all degraded riparian features. Livestock grazing will not be allowed to measurably slow or retard recovery of degraded riparian features.

4. Protection of all springs, seeps, intermittent and ephemeral streams, and all other wetlands located within the grasslands.

5. Promotion of open, healthy forests and competition with tree seedlings through a healthy understory of native grasses.

6. Reduction of non-native grassland vegetation, where possible, by provision for native grassland recovery and avoidance of activities that promote the spread of non-native and noxious plants.

7. Retention of livestock grazing only as is documented to be compatible with the protection and maintenance or restoration of fish and wildlife habitat, conservation of wilderness values, preservation of rare combinations of aquatic and terrestrial habitat (including forests through maintenance of an adequate native grass understory), and preservation of rare combinations of diverse ecosystems and parts of such ecosystems. Financial accounting for the costs associated with livestock grazing will be utilized in determining the compatibility of livestock grazing with these habitats, ecosystems, and values.

8. Revocation of specific livestock grazing permits if schedules for monitoring and reviewing compatibility of livestock grazing with mandated HCNRA ecosystem values are not met.

9. Retention of approximately half of the HCNRA as livestock-free native grassland through closure of all ten allotments which currently do not have livestock grazing. These allotments are invaluable as (a) areas in which to study the nature and rate of native HCNRA ecosystem recovery in the longterm absence of livestock grazing; (b) reference plots for estimating compatibility of livestock grazing with ecosystem protection; and (c) remnants of native grasslands in the bioregion, given the reality that native herbaceous species in the Interior Columbia River Basin did not evolve under intense grazing from large mammalian herbivores and are not adapted to tolerate this disturbance. ***Modified 4/2/99***

Objective Gra-O1

Compare proposed economic (e.g., livestock) and recreational human activities in the HCNRA to absence of such human activities regarding the degree to which such activities affect the ability of HCNRA riparian habitat to support native grassland-related wildlife and HCNRA forests to benefit from a dense native

grass sward understory both in the short-term (e.g., within five years) and the longterm (e.g., ten to twenty years).

Standard Gra-S1

Estimate the potential role of HCNRA wetlands, stream systems, and springs, if undisturbed by human activities, to support grassland ecosystem native species, within the context of the bioregion. Map all wetlands, permanent and impermanent streams, and springs within the HCNRA.

Standard Gra-S2

Estimate the near natural rate of recovery of degraded riparian features in various settings within the HCNRA, utilizing best available scientific and HCNRA site-specific information, including information available within the various-aged allotments with no livestock and exclosures. ***Modified 4/2/99***

Standard Gra-S3

Estimate the potential role of the native grass sward understory of HCNRA forests, if undisturbed by livestock grazing and other human-related activities, to support cool fires, limit establishment of tree seedlings, increase soil permeability, reduce runoff and erosion, and increase soil litter.

Standard Gra-S4

Fully examine and consider a no-livestock grazing alternative in all planning documents regarding livestock grazing.

Objective Gra-O2

Base planning for human-related activities in the HCNRA on explicit consideration of their beneficial and detrimental effects on (a) native grassland structure and functions; (b) forest structure and functions that are associated with the condition of the grassland understory; and (c) re-establishment of natural fire frequencies.

Standard Gra-S5

All proposals to permit or undertake an activity will include an estimate of each alternative's comparative potential to protect, restore, retard recovery of, or degrade native grassland habitat, wildlife, and functions; associated forest structure and functions; and fire frequencies.

Objective Gra-O3

Establish a protocol for determining that livestock grazing within a given allotment is compatible with maintaining or allowing significant recovery toward healthy communities of (a) native grassland plant species; (b) uncommon native wildlife that are dependent in part or wholly on native grasslands; and (c) forest understory native grasses and forbs.

Objective Gra-O4

Prepare draft goals for HCNRA grasslands, including concrete, measurable goals for:

(a) Presence and condition of native grassland plant species historically present in the HCNRA;

(b) Presence and population structure of native wildlife species historically present in and dependent in part or wholly on HCNRA native grasslands;

(c) Native grassland riparian habitat;

(d) Native forest understory grass swards;

(e) Microbiotic crusts; and

(f) Soil conditions.

Within a year of public issuance of the draft goals, prepare a final goals document for HCNRA grassland habitat.

Standard Gra-S6

Prepare and field-test methods by which the Forest Service, a permittee, or ecologically informed member of the public can estimate, with good inter-rater agreement, whether a given allotment is moving toward the HCNRA grasslands habitat goals (see Grasslands note 1).

Objective Gra-O5

Beginning June 2002, issue permits for livestock grazing only upon preparation of a draft and final measurable goals statement for that allotment based on the potential of that site to move toward the HCNRA grassland habitat goals (see Grasslands note 2).

Standard Gra-S7

A finding of compatibility of a given permit for livestock grazing will include provisions that will:

(a) provide for measurable movement toward HCNRA grassland habitat goals;

(b) provide for near natural rate of recovery of degraded riparian features (see Grassland note 3);

(c) prevent degradation of riparian systems, regardless of whether particular streams, wetlands, or springs currently are in excellent condition; and

(d)prevent the introduction or exacerbation of invasion of non-native grassland species.

Standard Gra-S8

When preparing an individual allotment's goals statement, identify and describe "hot spots" of damage or degradation within an allotment rather than "averaging" grassland conditions within the allotment. Provide for altered management within the next Annual Operating Permit and the next Allotment Management Plan for all hot spots. If such hot spots do not measurably and significantly improve within four years, place the entire allotment in "hot spot" status, and provide for altered management in each Annual Operating Permit that cannot fail to improve the hot spots, until the hot spots have been improved. If this management is unable to improve the hot spots within two more years, the permit must be canceled (see Grassland note 4).

Standard Gra-S9

When preparing an individual allotment's goals statement, provide separate analysis for riparian habitat within the allotment, as livestock grazing damage is often especially severe within riparian habitat. If noted problems in riparian habitat conditions do not recover at near natural rates of recovery for two years in a row (which requires annual monitoring), place the entire allotment in "riparian problem" status, and provide for altered management in each Annual Operating Permit that cannot fail to improve the riparian habitat, until the riparian habitat has been improved. If this management is unable to significantly improve the riparian habitat within two more years, the permit must be canceled (see Grassland note 3).

Standard Gra-S10

Annually, the permittee will prepare a publicly reviewable draft finding of allotment conditions and movement toward the allotment goals, and the HCNRA will issue a final finding, responsive to reasonable comments of the public, the permittee, and Forest Service scientists.

After 2002, no multi-year permit will be issued without a finding of ecosystem compatibility, and no annual operating permit will be issued if more than one year has passed without filing a finding of compatibility that is responsive to reasonable comments of the public, the permittee, and Forest Service and other scientists (see Grassland note 5). ***Modified 4/2/99***

Objective Gra-O6

Prohibit livestock grazing in degraded riparian areas (including all riparian habitat noted as problematic in any livestock allotment) until improvement in riparian area conditions have been documented for two years in a row.

Standard Gra-S11

When preparing all allotment management plans and annual operating plans, explicitly incorporate the rapidly-accruing scientific information regarding impacts of livestock grazing on riparian areas.

Guideline Gra-Gu1

Fencing is the only alternative to full-time riders or livestock exclusion in order to protect riparian areas. A mix of fencing and riders (to check on condition and effectiveness of fencing) is best. Place fences at upland edges in order to encompass the entire riparian area.

Standard Gra-S12

Prohibit confined feeding operations within riparian habitat. ***Modified 4/2/99***

Objective Gra-O7

Identify at least one scientifically adequate control area (i.e., currently free of livestock grazing) that is comparable with each livestock grazing allotment in terms of diversity in soil, elevation, slope, and proximity to water.

Standard Gra-S13

Do not reintroduce livestock (i.e., cattle, horses, or domestic sheep) into allotments that are not grazed by domestic livestock as of december 1998 (see Grassland note 5). ***Modified 4/2/99***

Standard Gra-S14

Match plots on allotments with no livestock with comparable plots on livestock grazing allotments as controls to study the effects of livestock grazing and absence of livestock grazing on native grassland and forest processes, annual production, species composition, and recovery.

Provide fenced wildlife exclosures within these no-livestock allotment plots. These exclosures must be of sufficient size and structure so as to provide controls on the effects that wildlife grazing (as opposed to livestock grazing) has on the native grasslands. ***Modified 4/2/99***

Standard Gra-S15

Post allotments with no livestock with signs so that HCNRA visitors will more readily report the presence of any trespass livestock. ***Modified 4/2/99***

Standard Gra-S16

No allotment permit may be renewed without a new Allotment Management Plan; each allotment permit must be renewed every ten years.

Standard Gra-S17

Vegetation manipulation for the primary purpose of benefitting livestock or lethal control of indigenous predators of livestock and competing indigenous herbivores, such as rodents and grasshoppers, is prohibited.

Objective Gra-O8

Livestock grazing shall not prevent the maintenance of well-distributed, viable populations of indigenous wildlife, or present a significant risk of disease transmission to indigenous wildlife, or alter habitat to such an extent that the geographic range of a wildlife species is reduced. Livestock grazing shall also not be allowed to adversely affect normal relationships between predators and prey, parasites and hosts (such as cowbirds and neotropical migratory songbirds), specific pollinators and dependent plants, or specific dispersal mechanisms and dependent indigenous organisms.

Standard Gra-S18

Domestic sheep shall not graze within the HCNRA, since domestic sheep pose the risk of *Pasteurella* transmission and bighorn sheep death.

Objective Gra-O9

Account for and explain HCNRA costs and receipts associated with livestock grazing.

Standard Gra-S19

Prepare an annual financial report on livestock grazing within the HCNRA as distinct from other areas of the Wallowa-Whitman National Forest. All livestock grazing-related expenses and income will be reported separately, including:

·Preparation of Allotment Management Plans and Annual Operating Permits (Note: A figure needs to be prepared for both actual expenditures and estimated expenditures if AMPs were prepared for all allotments, as required by law);
·Monitoring for compatibility with HCNRA Act 7(1-6);
·Range improvements;
·Costs of noxious weed surveys, reduction, and eradication attributable to livestock grazing;
·Attributable costs of protection and restoration of special (i.e., endangered, sensitive, threatened, indicator, rare, endemic, or declining) plant and animal species affected by livestock grazing;
·Attributable costs of riparian habitat monitoring, protection and restoration;
·Enforcement of livestock grazing regulations;
·Income from livestock grazing permits;
·All other sources of income for livestock grazing-related activities.

Standard Gra-S20

Permit fees will include costs of preparation of a botanic survey for extent and successional stages of native and non-native plants within the allotment every five years.

Standard Gra-S21

Prepare a similar annual financial report on HCNRA allotments which do not have livestock as distinct from other areas of the Wallowa-Whitman National Forest. All expenses will be reported, including activities to which the costs appear attributable (e.g., noxious weed control due to spreading of noxious weeds by motorized vehicles, non-motorized recreation; or protection of special species that are rare because the area was formerly grazed by livestock): ***Modified 4/2/99***

·Costs of noxious weed surveys, reduction, and eradication;
·Costs of protection and restoration of special plant and animal species; and
·Costs of riparian habitat monitoring, protection and restoration.

Objective Gra-O10 ***Corrected per 5/11/99 e-mail message***

Cheatgrass (*Bromus tectorum*) will not be protected within the HCNRA, and conditions favoring natural re-establishment of native grasses and forbs within cheatgrass invasions will be supported (see Grassland note 7).

Standard Gra-S22

Prepare an analysis of conditions and activities that facilitate the presence and spread of cheatgrass and *Ventanata dubia* within the HCNRA and options for reduction and elimination of cheatgrass within the HCNRA. This analysis, where appropriate, should draw on extensive documentation of conditions that favor cheatgrass, and on the more meager data on successful containment and reduction of cheatgrass invasions in the Intermountain West.

Objective Gra-O11 ***Corrected per 5/11/99 e-mail message***

Prepare and implement grassland drought procedures and implementation triggers, whereby grazing periods are restricted or livestock are vacated from the allotment during drought conditions, prior to drought-exacerbated plant grazing damage.

Objective Gra-O3

Identify key HCNRA grassland research and monitoring needs.

Water Use and Management of Irrigated Lands

This Section Added 4/20/99

Goal Wat-G1

Existing water rights will be maintained and water will be used in a manner compatible with the protection and restoration of aquatic habitat and native vegetation.

Objective Wat-O1

Maintain existing water rights for future management opportunities on applicable sites. Use appropriate planning processes (e.g., Forest Plan and Allotment Management Plan processes) to make long-term determinations of use, need, or abandonment.

Standard Wat-S1

Use water for the purposes described in existing water rights at least one year in a five-year period to avoid forfeiture by nonuse until determinations are made through site planning.

Standard Wat-S2

Consider, on a site-by-site basis, and through such planning processes as the Forest Plan and Allotment Management Planning, the feasibility of (1) lease agreements for converting water rights to instream water rights for specified time periods; and (2) use of water to irrigate fields for growing native plants from local seed for use in restoration projects.

Guideline Wat-Gu1

Plan, where feasible, for use and transfer of water rights in order to restore native plants to flat fields at Dug Bar Ranch, Cache Creek, Circle C Ranch, Temperance Creek, and Pittsburg Administrative Site. Local seed would be collected for growing native species, in order to provide seed for use in restoration projects.

Standard Wat-S3

Minimize use of water rights for irrigating livestock pasture (e.g., at Thorn Creek Guard Station and Kirkwood Ranch) or exotic lawns (e.g., at Kirkwood Ranch and Pittsburg Administrative Site) to that needed for resource protection; maximize use for restoring native plant species and aquatic habitat in the HCNRA.

Notes for Grasslands

1. "Effective monitoring using specific measurement approaches, as well as administration are essential." (Emphasis added; USDA Forest Service, Pacific Northwest Region, and USDI Bureau of Land Management, Oregon and Washington. 1997. Eastside Draft Environmental Impact Statement. Walla Walla, WA. Appendix 3-2, Attachment 1, p. 13.

1. "Guidelines for developing allotment specific prescriptions can be identified at the programmatic level. However, in general, the prescriptions themselves must be developed to fit 'on-the-ground' conditions within the context of those guidelines." USDA Forest Service, Pacific Northwest Region, and USDI Bureau of Land Management, Oregon and Washington. 1997. Eastside Draft Environmental Impact Statement. Walla Walla, WA. Appendix 3-2, Attachment 1, p. 13.

2. As the Forest Service and Bureau of Land Management write in "Recommended Livestock Grazing Guidelines" for implementation of PACFISH, "Any effect that carrys [sic] over to the next years is likely to result in cumulative negative effects, and measurably slow recovery of degraded riparian features." USDA Forest Service, Pacific Northwest Region, and USDI Bureau of Land Management, Oregon and Washington. 1997. Eastside Draft Environmental Impact Statement. Walla Walla, WA. Appendix 3-2, Attachment 1, page 17.

3. "In some definable cases, avoiding adverse affects [sic] can only be accomplished by suspending livestock grazing." USDA Forest Service, Pacific Northwest Region, and USDI Bureau of Land Management,

Oregon and Washington. 1997. Eastside Draft Environmental Impact Statement. Walla Walla, WA. Appendix 3-2, Attachment 1, page 13.

4. The burden of proof of recovery in grazing allotments should be on the grazing permittee, not on federal agencies or outside public-interest groups. This burden of proof involves the permittee as an active participant in grassland recovery.

5. HCNRA areas that have received substantial (e.g., five, or ten years') rest from previous livestock grazing regimes contain biological material, physical processes, and other information on ecosystem functioning and recovery that will be crucial for later restoration of other areas.

6. Cheatgrass has been shown to inhibit restoration of native grassland species, including bunchgrasses; facilitate invasion of noxious weeds such as medusahead and starthistle; and degrade native grassland wildlife habitat. In habitats with sufficient rainfall, native grasses can sometimes re-establish within cheatgrass invasions if exotic disturbances are eliminated and native species are allowed to regain their vigor.

WILDLIFE HABITAT: RIPARIAN AND AQUATIC

Streams collect all of our past deeds and values and then deliver them back to us.

Scott Stouder, "Water," *Corvallis Gazette-Times*

Note: The former CMP category, "Fish Habitat," is inadequate to address the reality that (1) such habitat is properly the habitat of all riparian-associated vegetation and wildlife, not merely fish; (2) such habitat is fundamentally affected by terrestrial activities far removed from "fish habitat;" and (3) riparian and aquatic habitats are critical for more than fish. Therefore, the Native Ecosystem Alternative replaces "Fish Habitat" with "Wildlife Habitat: Riparian and Aquatic."

Goal Rip/Aqu-G1

HCNRA goals for riparian and aquatic habitat are based on recognition of the profound and cumulative degradation of riparian and aquatic habitat throughout most of the West, the Intermountain Region, and the Interior Columbia River Basin. Goals are therefore based primarily on recovery of the potential natural community (see Riparian/Aquatic note 1), through protection of healthy riparian and aquatic habitat, restoration of stream channels and function, and recovery of degraded vegetation, rather than on risk, i.e., the amount of additional human activities to be allowed within riparian habitat.

Aquatic conservation goals throughout the HCNRA include:

1. The distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which native species, populations and communities are uniquely adapted.

2. Spatial and temporal connectivity between watersheds.

3. The physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

4. Water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.

5. The sediment regime under which aquatic ecosystems evolved.

6. Instream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient and wood routing.

7. The natural timing and variability of water table elevations in meadows and wetlands.

8. Species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

9. Habitat to support well-distributed populations of native plants, invertebrates, and vertebrate riparian-associated species.

Unless contradicted by on-site information, *riparian habitat* is 300 feet on each side of perennial streams and 150 feet surrounding all other riparian areas (impermanent streams, springs, seeps, and wetlands). Site-specific information regarding the functional extent of the specific riparian area based upon the existence of

riparian vegetation, riparian-associated terrestrial vertebrate and invertebrate species, or hydrological connectivity might necessitate enlargement or allow reduction of the area identified as riparian habitat on specific sites.

Recognizing that the HCNRA currently and in perpetuity provides critical habitat for threatened, endangered, and sensitive fish species within the Snake and Columbia River aquatic ecosystem, particular locations, watersheds, and connecting corridors within the HCNRA will be protected and maintained as Aquatic Diversity Areas:

1. Locations where aquatic species are at risk of extinction or vulnerable to future disturbance.

2. Whole watersheds representing the best remaining examples of native aquatic ecosystems and their associated biological assemblages.

3. Connecting corridors linking habitats essential to support native aquatic populations.

Critical Refuges (CRs) generally do not have a high likelihood on their own of sustaining ecological function through time, but typically harbor an important population of an imperiled taxa, an important community complex, or an important habitat type that may be crucial to ultimate recovery.

Oregon Aquatic Diversity Areas (ADAs) recognized within the HCNRA by the Oregon Chapter of the American Fisheries Society[1] include:

Upper Imnaha River
Imnaha River
Lower Imnaha River complex
Cook-Cherry Creek
Lick Creek
Deep Creek
Upper Cottonwood Creek

Idaho ADAs and Critical Refuges (CRs) recognized by leading Idaho fisheries biologists (in workshops convened by Pacific Rivers Council) include:

Hells Canyon below Hells Canyon Dam (ADA)
Granite Creek (CR)
Sheep Creek (CR)

The above three areas are important for steelhead and chinook and may also be important for bull trout and westslope cutthroat trout.

Getta Creek (ADA)

The Getta Creek area is important spatially for chinook and steelhead and may also be for bull trout.

These ADAs and CRs will receive priority attention in terms of recovery efforts, monitoring, and research.

Although PACFISH will provide useful guidance for particular aspects of riparian habitat protection within the HCNRA, these aquatic conservation goals recognize that PACFISH is inadequate as a comprehensive HCNRA aquatic conservation plan because:

(a) PACFISH focuses on anadromous fish rather than all riparian-associated species in the HCNRA;

(b) PACFISH does not acknowledge the contribution of upland areas to riparian habitat quality;

(c) PACFISH inadequately addresses protection of intermittent streams;

1 See Eastside Forests Scientific Society Panel. August 1994. *Interim Protection for Late-Successional Forests, Fisheries, and Watersheds*. Technical Review #94-2. The Wildlife Society, p. 39.

(d) PACFISH avoids restricting livestock grazing in riparian and other areas affecting water quality within watersheds; and
(e) PACFISH inadequately addresses protection of riparian habitat.

Objective Rip/Aqu-O1

Develop protection plans for HCNRA Aquatic Diversity Areas (ADAs) with measurable desirable future conditions (DFCs); activities and restraint from activities that will contribute significantly to maintenance or attainment of the DFCs; key monitoring elements that will track maintenance or movement toward the DFCs; and timelines for actions, monitoring, and attainment of specific DFCs.

Standard Rip/Aqu-S1

Feedlots will be prohibited within ADAs.

Objective Rip/Aqu-O2

Address conditions in uplands in terms of aquatic conservation.

The following improvements in upland hydrologic processes will aid aquatic conservation:

a. Reduced overland flow;
b. reduced surface erosion;
c. improved infiltration; and
d. increased seeps/springs.

Indicators of upland recovery that will aid aquatic conservation include:

a. Return of native vegetation communities, decreases in exotic plant species, and increases in number of native species;
b. diversified age class distribution of plants;
c. reduced soil compaction;
d. increased plant vigor;
e. increased availability of seed sources;
f. recovery of microbiotic crusts; and
g. return of natural fire regimes (noting that livestock grazing reduces fine fuels essential for ignition of grassland fires).

Objective Rip/Aqu-O3

Prepare HCNRA riparian map and conditions report, identifying (1) current stream type condition and (2) current riparian vegetation type and condition. Prepare a publicly accessible map and overview of all HCNRA aquatic systems (rivers, streams, wetlands, springs, wet meadows; and hydrological connections, where known) and conditions within the HCNRA, identifying which riparian sites are healthiest, which are moderately disturbed, and which are currently most diverted from healthy, native conditions. Include all stockwater developments on the map (see Riparian/Aquatic note 2).

Standard Rip/Aqu-S2

Establish appropriate permanent transects for stream condition and riparian vegetation to enable reproducible, longterm data-gathering.

Guideline Rip/Aqu-Gu1

Identify current stream type using the Rosgen stream classification, using measurements and permanent transects (see Riparian/Aquatic note 3). Considered will be bankfull channel width, width to depth ratio, channel sinuosity, entrenchment, pool dimensions and frequency, and amount of raw stream bank. Bankfull width is defined as the wetted channel width under conditions of bankfull discharge.

Standard Rip/Aqu-S3

In describing particular HCNRA riparian sites as being in "healthiest" condition, utilize standards recognized widely by the scientific community (e.g., aquatic biologists, conservation biologists, hydrologists, and geomorphologists). These standards will be specific and subject to independent verifiability. The January 1992, *Upper Grande Ronde River Anadromous Fish Habitat Protection,*

Restoration and Monitoring Plan and Beaverhead National Forest riparian guidelines provide examples of such standards. Riparian health will be determined based on ecological distance from potential.

Guideline Rip/Aqu-Gu2

Examine and discuss the relationship of HCNRA stockwater developments to alteration of natural hydrologic cycles and functioning in the HCNRA, e.g., as a result of soil compaction around these developments (see Riparian/Aquatic note 4).

Standard Rip/Aqu-S4

Biennially update the map and conditions of HCNRA riparian habitat areas to display areas which have been brought into compliance with established goals.

Objective Rip/Aqu-O4

Identify and disseminate throughout the bioregion a list of key riparian studies and research which would significantly contribute to wildlife riparian habitat goals and which could variously be undertaken as college- and graduate-level class projects, theses, and dissertations; and/or by other scientists and scientifically-skilled citizens.

Objective Rip/Aqu-O5

Prepare HCNRA riparian-associated wildlife status and threats report. Utilizing existing data, prepare a publicly accessible description of native HCNRA riparian-associated species that have historically been present in the HCNRA; their particular habitat needs; activities or specific conditions that threaten their functioning, reproduction, recovery, or health; and their current population status. Identify major gaps in the database, and establish priorities for filling of those gaps based on greatest need and feasibility.

This report will be updated continuously as new information is accrued; a publicly accessible version will be updated every two years.

Objective Rip/Aqu-O6

Identify key riparian habitat areas and sections of stream channels in need of restoration, and develop restoration plans for each.

Standard Rip/Aqu-S5

Begin recovery of riparian areas at healthy "core" areas, working downstream and outward to reconnect habitats and to promote recolonization of nearby streams and watersheds.

Guideline Rip/Aqu-Gu3

Prioritize recovery plans on the basis of:

(a) The ecological importance of the habitat;

(b) the presence and condition of at-risk salmonid and other fish stocks or riparian-associated species;

(c) the restoration potential of the habitat;

(d) the resources necessary to execute the restoration plan; and

(e) the likelihood of rapid initiation of a downward trend as a result of bank failure or stream channel straightening.

Standard Rip/Aqu-S6

Develop recovery plans based on measurable desirable future conditions (DFCs), activities to attain those conditions, and monitoring that will track whether those activities are resulting in movement toward the DFCs. Activities must not be goals in and of themselves, and all desirable future conditions, activities, and monitoring must be capable of independent verification by interested scientists and scientifically literate citizens and organizations.

Guideline Rip/Aqu-Gu4

Recovery will involve stabilization of point bars, lateral bars, and mid-channel bars with vegetation. This is required for stream channels to begin narrowing and for the sediment load to decrease.

Standard Rip/Aqu-S7

Instream structures other than addition of woody debris will not be used as a means of restoring stream function (see Riparian/Aquatic note 5). If large woody debris is added, it should provide natural amounts, types, sizes, and spatial distributions of wood both in and along stream channels. The addition of woody debris should be considered only in conjunction with recovery of off-channel habitat and cessation of off-channel activities that have led to a deficiency of in-channel woody debris.

Guideline Rip/Aqu-Gu5

Replanting may be necessary on some scale, but natural recovery will be allowed to take place wherever possible, primarily through rest from livestock grazing or destabilizing recreational activities.

Guideline Rip/Aqu-Gu6

As riparian vegetation recovery may be delayed by browsing wild ungulates, plan projects to compensate for wild ungulates.

Guideline Rip/Aqu-Gu7

Because some streams have become destabilized, acknowledge that stream channels may continue to widen for a period of time until the stream banks revegetate with deeply-rooted and dense vegetation (see Riparian/Aquatic note 6).

Guideline Rip/Aqu-Gu8

Acknowledge that streams with high banks may continue to be unstable as long as the rooting depths of the riparian vegetation are less than the bank height.

Guideline Rip/Aqu-Gu9

Acknowledge that stream banks with different types of bank compositions (clay, silt, sand, gravel, or cobbles) and with different bank stratigraphies (e.g., composite versus homogeneous) will respond differently to rest and will have different time scales required for vegetation establishment and bank stabilization).

Standard Rip/Aqu-S8

Identify key riparian research and monitoring desirable for HCNRA.

Standard Rip/Aqu-S9

Identify the feasibility of reintroduction of riparian and aquatic species which have been extirpated from the HCNRA. Establish priorities for reintroduction of native species.

Standard Rip/Aqu-S10

Any human interventions intended to aid recovery of riparian habitat will be done as experiments and monitoring will include non-Forest Service reviewers. Recovery of large systems is necessary in order to have an intact system with which to experiment. The rationale for human interventions must be explicitly identified. Human interventions must be viewed only as a "temporary bridge" to a condition in which natural recovery can take place.

Standard Rip/Aqu-S11

If grazing is permitted within a recovery plan, monitoring will include a permanent livestock exclosure (or exclosures) of adequate size to serve as study areas within each allotment. Such areas will provide reference sites where key quantifiable ecological indicators can be measured.

Guideline Rip/Aqu-Gu10

Use the following riparian indicators, as relevant, to measure recovery of riparian wildlife habitat:

a. Riparian vegetation: Improved densities, composition, and structure of native vegetation. Point, mid, and lateral bars will be stabilized with dense vegetation.

b. Riparian-associated vertebrate and invertebrate animal species: Increase in number of native species and the health (e.g., desirable structure, size) of their populations.

c. Channel substrate: Sorting of bed material substrates, including decreased fine sediment among coarser material.

d. Channel morphology: Channel narrowing and resulting turbulence; point bars; increased sinuosity and channel complexity; increased numbers of riffles; increased pool volume.

e. Water quality: Stream temperature moderation; return of cold-water fauna; absence of anthropogenic-associated pollutants.

f. Water quantity and timing: Increased soil water holding capacity and flow moderation; reappearances of streams; decreased soil temperatures; moderated high flows and enhanced or prolonged base flows; evidence of functional interaction between surface flows and increased groundwater storage.

g. Hydrological functioning: Connection of streams with their floodplains, adequate groundwater storage, functioning hyporheic (i.e., stream-adjacent groundwater) zones.

h. Infiltration: Improved infiltration of precipitation and flood waters into the valley sediments.

Objective Rip/Aqu-O7

Maintain degraded riparian areas as livestock-free until restoration has been accomplished. Proceed on the presumption (as evidenced in numerous scientific studies) that livestock grazing will degrade riparian conditions.

Guideline Rip/Aqu-Gu11

When preparing all riparian habitat recovery plans, incorporate the rapidly-accruing scientific information regarding both impacts of livestock grazing on riparian areas and evidence of recovery of riparian habitat and riparian-associated wildlife when livestock grazing is excluded.

Standard Rip/Aqu-S12

Prohibit feedlots in riparian areas.

Objective Rip/Aqu-O8

Where livestock are permitted to continue grazing, utilize an HCNRA adaptation of the Beaverhead National Forest Riparian Guidelines, which determine acceptable use levels for the following parameters: Browse levels on riparian shrubs, stubble height, streambank alteration, and forage utilization. The use levels are arrived at by setting desired future condition (DFC),and assessing the potential sensitivity, and inherent stability of the riparian area (both stream and vegetative components).

Objective Rip/Aqu-O9

Incorporate in all alternatives within proposals for optional human activities within the HCNRA a discussion of the potentials of each alternative to maintain, restore, or degrade HCNRA native and healthy riparian habitat conditions, explicitly considering cumulative impacts of other past, present and foreseeable human activities within the area of concern.

Guideline Rip/Aqu/Gu12

Consider, during appropriate planning processes (e.g., Forest Plan and Allotment Management Plan processes), the use of water rights for instream water rights, where it will help restore aquatic functioning. ***Guideline Added 4/20/99***

Notes for Wildlife Habitat: Riparian and Aquatic

1. "...[G]oals of restoration are to return a riparian system to a 'potential natural community' whereby the ecosystem is naturally functioning in a manner as closely as possible to that in which it evolved." Kauffman, Boone, Robert Beschta, Nick Otting, and Danna Lytjen. 1997. An ecological perspective of riparian and stream restoration in the western United States. Fisheries 22(5):1-24.

2. This assessment will be iterative, beginning with existing data and the professional judgment of aquatic biologists and other appropriate scientists and specialists regarding the highest standards of riparian health. Identify major gaps in the database, and establish priorities for filling of those gaps based on greatest need and feasibility.

3. Ocular estimates are not reproducible. The Rosgen classification involves the gathering of data that are reproducible. Training involved in gathering measurements on the permanent transects is minor, but results in the gathering of data that can be relied upon over time.

On the other hand, evaluations of stream condition based on "Proper Functioning Condition" are not reproducible. The use of the Proper Functioning Condition method involves no measurements, and no permanent cross-sections, and has shown very little inter-evaluator reliability.

See Rosgen, DL. 1996. Applied River Morphology. Pagosa Springs, CO: Wildland Hydrology. Also, Rosgen, DL. 1994. A classification of natural rivers. Catena 22:169-199.

4. While compaction of soil in the area of stockwater developments must be examined, compaction of the soil by livestock throughout the watershed can greatly increase runoff and decrease infiltration.

5. Studies show that instream structures are generally at best ineffective and commonly counter-productive. They variously lead to stream scouring, routing around the structures, and stream widening. See, e.g., Beschta, RL, WS Platts, and JB Kauffman. 1991. Field review of fish habitat improvement projects in the Grande Ronde and John Day River Basins of eastern Oregon. U.S. Department of Energy, Bonneville Power Administration, Division of Fish and Wildlife, DOE/BP-21493-1. Portland, OR. Also, Kauffman, JB, RL Beschta, and WS Platts. 1993. Fish habitat improvement projects in the Fifteenmile Creek and Trout Creek basins of central Oregon: Field review and management recommendations. U.S. Department of Energy, Bonneville Power Administration, DOE/BP-18955-1.

6. If a stream has become destabilized through disturbance that resulted in high banks or loss of vegetation, current disturbance may now be secondary to stream discharge effects. If the stream is relieved of the disturbance pressures, it may continue to widen during floods until vegetation and banks stabilize.

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