Chapter 1
Introduction

1.0 Introduction

This Ecosystem Analysis at the Watershed Scale (EAWS) is a fine scale analysis designed to describe past and current conditions, and make management recommendations at the watershed scale. The watershed scale is generally defined as an area between 10,000 and 100,000 acres in size (see Table 1.10, item #5 below).

This ecosystem analysis was conducted at the watershed scale, and follows guidelines described in the *Federal Guide for Watershed Analysis - Ecosystem Analysis at the Watershed Scale* (USDA Forest Service Version 2.2, August 1995). Table 1.10 below provides perspective for the scale of this watershed analysis in relation to watershed hierarchy classifications.

Table 1.10 Scale Hierarchy

Scale Hierarchy	Scale Description	Example
1	Region	Pacific Northwest
2	Subregion	Upper Columbia Basin
3	River Basin	Salmon River
4	Subbasin	Lower Salmon
5 (EAWS)	Watershed	Slate Creek
6	Drainage	Van Buren Creek
7	Site	Road #221 stream crossing

The purposes for this analysis and information gathering process are as follows:

- Provide a means by which the watershed can be understood as an ecological system.
- Develop and document our understanding of the processes and interactions occurring within the watershed.
- Validate or refine findings made in larger scale assessments.
- Characterize the historic and existing conditions in the watershed in more detail than was presented in larger scale subbasin assessments, especially in relation to unique or rare elements outside the scope of large scale analyses.
- Site specifically identify resource conditions, states and/or situations which were discussed in a general sense in the larger scale subbasin and river basin assessments.
- Recommend management activities and possible projects which will address or respond to problem and opportunity areas.
- Identify opportunities for better integration and resolution of conflicting resource management themes, objectives or goals.

This watershed analysis is an intermediate analysis between land management planning and project planning. It is purely an analysis step and does not involve National Environmental Policy Act (NEPA) decisions.

The watershed analysis provides a means of refining the desired condition of the watershed. It also helps identify the purpose and need for management recommendations for implementation of the Forest Land and Resource Management Plan (Forest Plan), current policy, and other applicable State and Federal regulations.

The analysis focuses on *Issues* and *Key Questions* specifically identified for this watershed in Chapter 2.

The analysis concludes with the identification of management opportunities. These opportunities provide a background for the development of management decisions in the future.

1.1 What this Assessment will Comprise

The Slate Creek Watershed Analysis describes historic and existing conditions and makes recommendations for management of landscape structure and composition in the drainage. The assessment identifies opportunities for management and needs for restoration in the area. Issues and evaluation of conditions will also be carried forward into broader scale planning unit assessments that will form the basis for Forest Plan revision. This analysis builds on the context provided by broader scale assessments like the Interior Columbia River Basin Science Assessment.

This analysis addresses terrestrial and aquatic resources, and human uses. They encompass the areas of most concern and drove the analysis process. While direction in the Nez Perce Forest Plan was a consideration in the recommendations in this document, some of the recommendations vary from the Forest Plan direction and are identified as either considerations for site specific Forest Plan amendments, or for consideration during the Forest Plan Revision process.

Specific issues were addressed in this EAWS when they might potentially affect:

1) future project timing, location and priority in the watershed;

2) the resource outputs and values that would be provided as a consequence of project action or inaction; and

3) the condition of the lands and waters would result.

The Interdisciplinary Team (IDT) established objectives integrated across the social, aquatic, and terrestrial areas. Objectives are expressed in terms of vegetation structure and composition, aquatic condition and function, and providing for a variety of human uses and values. Throughout, the team focused on how a land manager would use this report in developing a management plan, prioritizing activities and balancing resource uses.

The EAWS consists of 7 chapters:

- Chapter 1 Introduces the EAWS process and the Slate Creek Area;
- Chapter 2 describes issues, key questions and indicators;
- Chapter 3 describes some important ecological concepts and classification regimes that helped the interdisciplinary team (IDT) interpret landscape change;
- Chapter 4 describes the watershed characterization;
- Chapter 5 describes historic and existing conditions in the watershed;
- Chapter 6 describes the functional resource findings and recommendations by subwatershed; and
- Chapter 7 describes the integration process and recommends integrated themes and possible projects. The integrated themes are presented for the entire drainage, as well as each of the 9 subwatersheds.

This analysis is based on existing information readily available to members of the public and Agency personnel. This analysis is an evolving, iterative process that allows for new information and changing conditions to be incorporated at any time. As new or changed information pertinent to Slate Creek becomes known, it will be added the this report.

This analysis identifies processes and conditions that are considered outside of the historic range of variation, and recommends and prioritizes activities and projects which would move Slate Creek towards a more ecologically sustainable condition. The document is essentially a National Forest Management Act (NFMA) analysis of the watershed. It is hoped that it will be used by District and Forest Staff in the development of projects in this drainage. The Bureau of Land Management (BLM) has reviewed this EAWS and has identified that it can be used for project planning and development occurring on BLM managed lands in the Lower and Main Slate Canyon subwatersheds.

The recommendations should help to frame multiple proposed actions for both Agencies to be evaluated through the NEPA process for implementation.

1.2 Key Issue Synopsis

Key issues were identified from public comments and Agency direction. The issues served as a focal point to guide the use of existing data, collection of new data, analysis of the data, and integration and synthesis of the resulting findings. The most frequently cited issues are listed below. A more detailed discussion of the issues in the Slate Creek drainage can be found in Chapter 2.

- Water Quality - Protect and maintain, and restore watershed conditions and fish habitat.
- Timber Supply - Provide for sustainable levels of timber harvest.
- Public Access - Minimize road and trail restrictions and closures, and reduce road and trail related, adverse effects to other resources.
- Vegetation - Maintain vegetation conditions within a range consistent with a sustainable ecosystem and long term disturbance processes.
- Human Uses - Protect traditional uses and special places.

1.3 Assumptions

The assumptions used to guide this analysis are shown below:

- Rely on existing data. Identify data gaps.
- Use Columbia River Basin Science Assessment findings where applicable.
- Use ecosystem management principles.
- Identify integrated treatment objectives for National Forest lands. Recommendations outside current Forest Plan direction are not only considered, but encouraged, because these recommendations will be evaluated during Forest Plan revision. Thus, the IDT used an assessment approach not constrained by current management area assignments.
- Focus on assessing landscape conditions. The assessment will not make resource decisions requiring analysis and disclosure procedures specified in the National Environmental Policy Act (NEPA).

1.4 Limitations

This analysis incorporates existing data. Several important issues were not addressed because the IDT lacked either expertise or adequate analysis time.

- If a subbasin assessment for the Lower Salmon River had been available, this watershed analysis would have spent far less time on establishing context and more time on synthesizing site specific information and developing more site specific proposals for restoration and treatment needs, and road management recommendations.
- The weakness of the local social and economic analysis is acknowledged. Analysis of these issues is perhaps better done at the subbasin scale or larger. However, the absence of this information limited our ability to

develop more fully integrated recommendations.

- The team lacked site specific data to identify the current conditions of the Riparian Habitat Conservation Areas (RHCAS) and to evaluate the achievement of Riparian Management Objectives (RMOs) in some areas.

1.5 Direction and Findings from other Sources

Additional direction and findings at various scales applicable to Slate Creek are contained in several previously published documents listed below. Some of the information applies at the broad, Salmon River basin scale. Other documents present information at the finer, Slate Creek watershed scale. Regardless of scale, this information all contributes to our scientific knowledge of the Slate Creek watershed.

1.5.1 Salmon River Prescribed Fire EIS

This Environmental Impact Statement proposes to use management ignited, low severity fire in Main Slate Canyon and Little Van Buren Creek on Forest Service managed lands below about 6000 feet, on the south side of Slate Creek (see Map 2-1 in Chapter 2 of the draft EIS). This could occur as soon as the year 2000. The purpose is to reduce fuel accumulations and risk to firefighters, natural resources, and private property. Water quality effects from this burning have been assessed as not detrimental (draft EIS, page 4-109).

1.5.2 Restoration Priorities from Forest Plan Biological Opinions for Listed Fish Species

There are two biological opinions (BOs) issued on the Nez Perce Forest Plan covering listed fish species; chinook salmon and steelhead in one, and bull trout in the second. As part of these BOs, an interagency implementation team (IIT) has been established to coordinate and direct the implementation of these Forest Plan BOs across the range of these listed species, the interior Columbia River Basin, including Western Montana. As part of this implementation package, the IIT has developed a set of interim aquatic restoration priorities, at the subbasin scale, to assist in focusing the aquatic restoration efforts across this area.

The restoration priority is based on biological integrity, watershed integrity, and watershed sensitivity or risk.

A high aquatic restoration priority has been recommended by the IIT restoration task team for the Lower Salmon subbasin.

The Slate Creek EAWS team considers the high priority for aquatic restoration particularly applicable to the Slate Creek watershed. However, it is generally felt that the aquatic restoration priority for the entire Lower Salmon subbasin is probably less than high. The upcoming Lower Salmon planning unit assessment (PUA) will assist in determining the appropriate level and focus of aquatic restoration priority across this subbasin.

1.5.3 Interim Northern Region Aquatic Restoration Priorities

The Northern Region of the USFS has developed an initial set of aquatic restoration priorities, principally to assist the Region in determining candidates for large scale watershed restoration focus at the National level. It is expected that these priorities will be superceded by the aquatic restoration priorities in the Northern Region Overview when complete. The interim aquatic restoration priority placed the subbasins in the Region into three categories

- existing strongholds ("last of the best"),
- high priority for restoration, and
- moderate-low priority for restoration.

It was recognized that there is restoration work to be completed to secure the existing strongholds, but the effort and funding needed to complete this should be minimal. The high priority subbasins were those

subbasins with the greatest aquatic value and restoration potential. The moderate to low subbasins had either less aquatic value or restoration potential.

The Lower Salmon subbasin has been identified as having a moderate to low restoration priority in this interim Northern Region aquatic restoration ranking.

The Slate Creek IDT feels that the moderate to low restoration priority for the Lower Salmon subbasin is appropriate. However, within the subbasin there are watersheds with higher aquatic value and restoration potential that should be considered as high aquatic restoration priority. Slate Creek is one of these high priority watersheds; perhaps the highest aquatic restoration priority watershed in the 300,000 acre Lower Salmon subbasin.

1.5.4 Northern Region Overview

The Northern Region Overview (October, 1998) explores the Region's situation with regard to ecosystem health and recreation. The overview is closely tied to the Forest Service Natural Resource Agenda for the 21st Century through its focus on ecosystem health and recreation. The Region has been loosely divided into six subregions. The subregions depict similarities in forest or rangeland patterns (and needs for restoration), similarities in the landscape patterns, and similarities in recreation, and social and economic situations. The Slate Creek watershed is found in the Wild River Zone, which includes all of the Nez Perce National Forest.

Recreation: Within the Wild River Zone, wilderness lands are extensive. There are high levels of semiprimitive and semiprimitive non-motorized opportunities, as well as fairly high roaded recreation opportunities. Off highway vehicle (OHV) use has increased in recent years. Fishing and hunting are both popular within the Zone. In places, there are conflicts with existing recreation investments in riparian zones and aquatic standards and objectives.

Aquatics: The aquatic portion of the Overview recognizes the unique aquatic values in the Wild River Zone, in particular the anadromous fish, along with the restoration needs associated with recovery of the at-risk species in this Zone. While the aquatic restoration priorities for the Overview have not been finalized, it is expected that given the anadromous component and the number of at-risk aquatic species, the Wild River Zone will be classified as a high restoration priority. The Lower Salmon subbasin is not expected to have a high priority in comparison to other subbasins in this zone, and will likely have a moderate overall priority.

Wildlife: Habitat restoration is the primary management strategy for conserving a majority of the terrestrial vertebrate species at risk in the Northern Region's Wild River Zone. Species of concern include the white-headed woodpecker, mountain quail and others (flammulated owl) associated with fire dependent ecosystems. Elk will also benefit from the restoration of ponderosa pine and upland grasses and shrub communities, but are also on the decline and recreational hunting pressure is high.

Fire: Dry forest types are common and fire is an important disturbance process in the south part of the Wild Rivers Zone. The opportunity to use natural fire is high in this Zone because of the large blocks of wilderness or roadless lands. On nonwilderness lands in closer proximity to private lands, or roaded lands with high timber values, prescribed fire is an important tool. Natural and prescribed fire can be used with care to maintain terrestrial and aquatic processes in watersheds currently in good condition, and may be used with limitations in restoration of some watersheds in poorer condition. Potential conflicts with fire use include adverse watershed effects such as sediment production, the spread of noxious weeds, and smoke effects downwind in Montana and locally.

Vegetation: The Overview identified plant communities at risk. Those that occur in Slate Creek include native

bunchgrasses, ponderosa pine, whitebark pine, lodgepole pine and riparian shrub complexes. All of these are highly fire dependent.

This Zone was identified for its high susceptibility to invasion by certain noxious weeds. Slate Creek is one of the most vulnerable of the Forest watersheds, because of its connection to the low elevation Salmon River canyon, where weed invasion has been rapid as a result of disturbance and the dry climate.

1.5.5 Salmon River Biological Assessment

To complete the Endangered Species Act (ESA) Section 7 requirements for consultation on ongoing and proposed activities that may effect listed species, the Forest and BLM have completed Biological Assessments (BA) at the subbasin scale that address the projects, and effects, of activities on listed fish, wildlife, and plants. The most recent BA for the Lower Salmon was completed in May of 1999. In addition to the analysis of ongoing activities, this BA describes the current status of the listed species and developed recommendations related to species conservation and recovery.

For listed fish species, recommendations were developed at the subbasin (Lower Salmon) and the watershed (Slate Creek) scale. The recommendations from this BA for the Slate Creek watershed include; development of a travel management strategy, development of a watershed improvement strategy, and development of a management strategy for the 354 road.

The team feels that this EAWS has made a significant contribution to achievement of these recommendations.

1.5.6 Nez Perce Forest Aquatic Restoration Strategy

This strategy was adopted by the Forest Leadership Team in April, 1999. It states that the Forest is committed to maintaining high quality watersheds and restoring degraded watersheds. It sets up a system of restoration prioritization by 4th code subbasins and 5th code watersheds. It also specifies that six of about thirty 5th code watersheds on the Forest are the highest priority for aquatic restoration. Slate Creek is one of these six highest priority restoration watersheds.

1.5.7 Interior Columbia River Basin (ICRB) Science Assessment

The Scientific Assessment for the Interior Columbia River Basin (Quigley et al. 1996) evaluated the condition and trends for the 144 million acre area within the Interior Columbia drainage. Within that assessment area, Slate Creek lies in the Central Idaho Mountains Ecological Reporting Unit, the Lower Salmon River subbasin, Forest Cluster 3, and Range Cluster 3. Summary findings for those reporting units include the following:

- Forest integrity was rated as low for the Lower Salmon subbasin. This rating was based on: 1) consistency of tree stocking levels with long-term disturbances typical for the forest vegetation present; 2) the amount and distribution of exotic species; 3) the amount of snags and down woody material present; 4) disruptions to the hydrologic regime; 5) the absence or presence of wildfire and its effect on the composition and patterns of forest types; and 6) changes in fire severity and frequency from historical (early 1800's) to the present. Surrogate indicators of these conditions were used.

- The subbasin falls in Range Cluster 3, rated as typically among the most altered by livestock grazing, timber harvest practices, and exclusion of fire. The areas of dry-forest rangelands and bunchgrass are where these changes are most pronounced.

- Hydrologic integrity was rated as low for the subbasin. This rating was based on: 1) disturbance to water flow; 2) bare soil and disturbances to soil structure; 3) riparian vegetation; 4) sensitivity of stream banks and fillslopes to disturbance; 5) cycling of nutrients, energy, and chemicals; 6)

surface and sub-surface flows; 7) stream morphology; and 8) recovery potential following disturbance. Indicators of human disturbance used in the analysis were road density, mines, dams, and agricultural conversion.

- Aquatic integrity was rated as moderate for the subbasin. This rating was based on whether the subbasin contains the full complement of native fish and other aquatic species, well-distributed in high-quality, well-connected habitats.

- Terrestrial wildlife habitat ratings were based on the degree of departure from historic occurrence. Slate Creek falls in Forest Cluster 3. It showed departures of 16 to 85 percent from historic. Departures generally included increases in mid seral community types and losses of early seral and late seral in montane types and increases in early seral and losses of mid and late seral in subalpine types. This and moderate to high road densities have decreased available habitat for wildlife vulnerable to human disturbances, especially those relying on late or early seral forest structure and those species using small non-forest openings or canopy gaps.

- Composite ecological integrity was rated as moderate for the subbasin.

- Economic resiliency for Idaho County was rated as moderate, but when combined with social factors including population density and life-style diversity, overall socioeconomic resiliency was rated as low. This infers that communities in Idaho County may have difficulty adapting to changing economic or social environments.

- Reliance on Forest Service/ BLM timber harvest for Idaho County was rated as high.

- Reliance on Forest Service/ BLM forage for Idaho County was rated as low.

1.5.8 Interior Columbia Basin (ICRB) Supplemental DEIS Draft Restoration Priorities

The Interior Columbia Basin Supplemental DEIS was released in late March, 2000. Because of the short time period between the release of the Supplemental DEIS and the final printing if the Slate Creek EAWS, the IDT has not had sufficient time to consider the information in detail. At a later date, pertinent information and direction will be incorporated into this document.

1.5.9 Proposed National Road Management Policy

In January 1998, the Forest Service announced that it would begin development of a road management policy. The draft of this proposed policy was released for a 60 day public comment period in early March, 2000, with a final policy expected September 1, 2000. The proposed policy:

- requires the use of a scientific roads analysis procedure that incorporates local public involvement to assist land managers in making better decisions about roads;

- requires that decisions to construct new roads be made only upon completion of a science based road analysis;

- emphasizes decommissioning or converting unneeded roads to other uses, and upgrading and maintaining roads needed for forest management and/ or public access;

- requires managers to consider the availability of maintenance funding when assessing new road construction;

- incorporates a transition process for forests to update their Forest Plans using the science-based road analysis; and

- requires extensive public involvement in local transportation planning decisions.

In August, 1999 the Agency published "Roads Analysis: Informing Decisions About

Managing the National Forest Transportation System". This assessment uses methodologies and techniques described in this science based roads analysis.

1.5.10 Aquatic Management Direction

Legal direction and agency policy for aquatic resource management are derived primarily from three national laws. These are the Clean Water Act (CWA), Endangered Species Act (ESA), and National Forest Management Act (NFMA). This section introduces that direction in order that historic and current aquatic conditions can be compared to social and agency objectives.

Clean Water Act and State Water Quality Standards

The CWA stipulates that states are to adopt water quality standards. Included in these standards are provisions for identifying beneficial uses, establishing the status of beneficial uses, setting water quality criteria, and establishing best management practices (BMPs) to control nonpoint sources of pollution. Although there are currently no designated beneficial uses for Slate Creek, existing beneficial uses include cold water biota, salmonid spawning, primary contact recreation, domestic water supply, and agricultural water supply.

Slate, Little Slate, Little Boulder, Van Buren, and Turnbull Creeks were listed as Water Quality Limited Streams (WQLS) on the 1994, 1996, and 1998 303(d) lists (see Map 8). Data available to the Environmental Protection Agency (EPA) at the time of initial listing suggested that beneficial uses were not fully supported in these streams. Sediment was the listed pollutant of concern. Subsequent surveillance has been conducted by the Idaho Division of Environmental Quality (DEQ) under the Beneficial Use Reconnaissance Program (BURP). Due to pending changes in the assessment protocol, these data have not yet been analyzed. Until such time as streams are delisted or total maximum daily loads (TMDLs) are developed for pollutants, State Water Quality Standards require that "no further impairment" of beneficial uses occur in these WQLSs. The TMDL process for the lower Salmon subbasin is scheduled for completion in 2004.

A number of narrative and numeric water quality criteria apply to Slate Creek and its tributaries. Among these are narrative criteria for sediment and numeric criteria for fecal coliform bacteria, water temperature, and turbidity. Approved BMPs that apply to activities in Slate Creek include the Idaho Forest Practices Rules and the Idaho Rules and Minimum Standards for Stream Channel Alteration.

Endangered Species Act

The ESA requires listing of species which are threatened or endangered with extinction, agency consultation on activities affecting these species, and the development of recovery plans. For listed fish species, these missions are the responsibility of the National Marine Fisheries Service for anadromous species and the US Fish and Wildlife Service for resident species. The listed aquatic species found in Slate Creek are steelhead trout, spring/summer chinook salmon (both anadromous) and bull trout (resident). Slate Creek has been identified as a Priority Watershed for spring chinook and steelhead trout, and a Special Emphasis Area for bull trout. These management designations include specific guidelines for management, along with an increased emphasis on aquatic restoration.

1.5.11 Nez Perce Forest Plan Direction

The NFMA mandated the development of forest plans to set management direction and resource objectives for each National Forest. The Nez Perce National Forest Plan was completed in October, 1987.

Management Areas

The National Forest land administered by the Nez Perce National Forest has been divided into 26 management areas, each with different management goals, resource potentials, and limitations.

Two types of management areas are identified in the Forest Plan. The first group of management areas includes unique sites or units of land with one primary management emphasis with similar management goals and management direction. These include management areas for special administrative areas such as administrative sites, cultural resource sites, active mining operations, research natural areas, and developed campgrounds, as well as Congressionally established areas such as Wild and Scenic River corridors and wildernesses. The boundaries for these management areas are either legally established boundaries or are well-defined. These include Management Areas 2 though 9, 11, 22, 23, and some lands assigned to Management Area 1.

The second group of management areas consists of capability areas that, for mapping purposes, are assigned to one management area based on the predominant management emphasis assigned to the capability area. For this second group of management areas, the management area boundaries are not firm lines and do not always follow easily found topographic features such as major ridges. The boundaries represent a transition from one set of opportunities and constraints to another, with management direction established for each.

Eight primary management areas are found in the Slate Creek drainage. They are listed below in descending order of occurrence. Specific direction, standards and guides for each of these MAs can be found in Chapter III of the Nez Perce Forest Plan.

MA-12...Manage for timber production and other multiple uses on a sustained yield basis.

MA-9.2..Manage the wilderness values as specified by the Wilderness Preservation Act of 1964.

MA-20...Manage for old-growth habitat for dependent species.

MA-15...Manage for timber production and other multiple uses on a sustained yield basis, while improving the quality of the deer and elk winter range.

MA-16...Manage to increase usable forage for elk and deer on potential winter range.

MA-10...Manage to protect or enhance riparian-dependent resources.

MA-19...Manage for livestock forage production and other multiple uses on a sustained yield basis.

MA-13...Manage for timber production and other multiple uses on a sustained yield basis, while meeting visual quality objectives of retention or partial retention.

Wild and Scenic Rivers Direction

The Forest Plan states that no developments or activities within the Slate Creek River Wild and Scenic River Corridor will alter the potential classification of the river into the National Wild & Scenic Rivers System prior to a suitability study. It is well understood that activities which alter the scenic values within the 1/ 2 mile corridor can not occur. But opinions vary on managing visuals outside of the corridor but which can still be observed from the corridor.

In 1988 a Forest Plan Amendment (Amendment #1) which changed Forestwide standards for protecting streams eligible for inclusion in the Wild & Scenic River System was issued.

In 1989 Amendment #1 was appealed by Associated Loggers Inc on the grounds that language permitting expansion of river corridors beyond 1/ 4 mile from either bank of a stream was arbitrary and vague. The Forest conducted negotiations with the appelent and with American Rivers Inc., at whose request the amendment was made. All parties agreed that the following sentence about streamside corridors would be deleted from Standard Number 3 in the amendment:

> "Boundaries may include adjacent areas needed to protect the resources or

facilitate management of the river Corridor".

In 1991 a Decision Memo to revise amendment #1 was approved. The revision was exactly the same as the original amendment except that the above language was removed.

There are eight Outstanding Features that are used to determine Wild and Scenic River eligibility in the suitability studies (see Nez Perce Forest Plan, page P-1). The Forest Plan indicated that the five Outstanding Features were present in the Slate Creek drainage: cultural, fisheries, scenic, geological, and recreational.

Research Natural Areas
The No Business Research Natural Area was established partly in response to the presence of the rare Maiden Hair fern. Subsequently, activities which may affect these values should be deferred until the suitibility study is complete.

Fish/Water Quality Objectives
Appendix A of the Forest Plan established fish/water quality objectives and entry frequency guidelines by 6th code subwatersheds (also referred to as prescription watersheds). Associated with these objectives were sediment yield guidelines and desired future conditions (DFCs) for aquatic habitat. Through the forest plan amendment process, this appendix has been updated several times as new information became available. These are documented in Appendix A of the Forest Plan and displayed in Table 1.11 below (also see Map 8).

Forest Plan fish/water quality objectives are assigned to prescription watersheds to identify a numeric value for objectives and existing conditions. Objectives were assigned based on beneficial uses, usually the key fish species supported by that system. Objectives are expressed in terms of habitat potential. Watersheds that support chinook salmon were generally assigned a 90% objective. Watersheds supporting steelhead or westslope cutthroat trout were generally assigned an 80% objective. Watersheds with other resident trout only or non-fish-bearing were generally assigned a 70% objective.

The 1995 Forest Plan Amendment #20 (Pacfish) established additional protection for at-risk aquatic species. It substantially changed aquatic management direction through establishment of Riparian Habitat Conservation Areas (RHCAs) and Riparian Management Objectives (RMOs) and adoption of additional standards and guidelines (see Map 13).

Table 1.11 - Forest Plan Fish/Water Quality Objectives

6th Coded Subwatershed Name	6th Code Subwatershed Number	Fish/WQ Objective (% of potential)	Sediment Yield Guideline (% over base)	Entry Frequency Guideline (# per decade)
North Fork Slate	17060209-02-01	80	45	2
Waterspout	-02	70	60	3
Upper Main Slate	-03	90	30	1
Big Boulder	-04	80	45	2
Lower Little Slate	-05	90	30	1
Mid Little Slate	-06	90	30	1
Upper Little Slate	-07	90	30	1
Turnbull	-08	80	40	2
Van Buren	-09	90	30	1
Deadhorse	-10	70	60	3
Little Van Buren	-11	70	40	3

Bear Gulch	-12	70	60	3
No Business	-13	70	60	3
Willow	-17	70	70	3
Trough	-18	70	70	3
Hurley	-19	70	70	3
Slide	-20	70	70	3
Rubie	-21	80	40	2
Lower Main Slate	-22	90	30	1
Lowest Main Slate	-25	NA	NA	NA

Note: Sediment yield is estimated using NEZSED, the Forest's adaptation of the R1/ R4 Sediment Yield Guide (USDA Forest Service, 1981). This model estimates natural or base sediment yield from landtype-derived mass erosion ratings. It estimates surface erosion only from roads, timber harvest, and fires.