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Clearwater Subbasin Plan Supplement and Response to Council Staff Subbasin Plan Amendment Recommendation

Introduction and Purpose

The purpose of this supplement is to provide a reorganized and condensed presentation of the construction of, and key issues within the Clearwater Subbasin Plan assessment, inventory, and management plan components. Specifically, this supplement seeks to draw from the three component elements of the plan and explain in a direct and summarized manner in a single document how the assessment component of the plan was developed, and how the key findings or conclusions made within the Clearwater assessment and inventory relate to the management strategies proposed in the management plan component. In addition to providing a compiled presentation of these key issues, this supplement presents the framework for the consideration and prioritization of those strategies in subsequent implementation processes. All information presented here is taken from the Draft Clearwater Subbasin Plan November 2003, and suggested refinements suggested by the Independent Scientific Review Panel (ISRP 2004-4).

I. Assessment Approach

This section summarizes the approach taken to complete the assessment for the Clearwater Plan. The themes used to build the habitat prioritization approach will be presented in the following order: assessment units, limiting factors, high priority limiting factors, Potential Management Units (PMUs), restoration issues, restoration issues prioritized by PMU, Clearwater drainages. A synthesis of the components is presented in tabular format to present the prioritization framework. The presentation concludes with a brief illustration of how the synthesis of this material relates to and augments Problems, Objectives, and Strategies presented in the Management Plan.

A. Data and Information Compilation

Data and information presented in the Clearwater Subbasin documents (Assessment, Inventory, and Plan) was gathered from a substantial variety of sources familiar with the ecological resources of the Clearwater subbasin. Initial data gathering was conducted through review of regional databases (i.e. ICBEMP, StreamNet, etc.) and through in-person, phone, and mail requests to the land and resource management agencies with responsibilities in the subbasin. In addition, representatives of those agencies were queried for other potentially relevant information sources. Subsequent data and information gathering was done through a chain referral type of process; as draft documents were presented for review and comment, all individuals involved in the review process were invited to supply additional information or relevant data not yet represented in the draft document(s). Since new information is constantly being collected and compiled, the data/information utilized in this series of documents cannot be considered truly "complete". However, the data and information used to develop the documents is believed to represent the most complete and up-to-date information available (relevant to the subbasin scale) at the time each of the documents was compiled. Appendix 1, attached hereto, includes a bibliography of sources used to develop the list of limiting factors.

The Clearwater Planners did not utilize assessment tools (EDT; QHA) for the reasons set forth in Appendix D of the Management Plan. Use of such tools will be considered in future iterations of

the Clearwater planning efforts. The assessment and the limiting factors identified are the represent the best professional judgment and best available scientific information developed by the contractor, technical subcommittee, and PAC. As evidenced in Appendix 1, extensive surveys and multiple assessments have been completed and published for the Clearwater subbasin and these were utilized in this planning process.

B. Assessment Units

The Clearwater system is large, diverse, and complex. In order to characterize the biological and environmental attributes of the Clearwater at anything other than the most general level, the Technical Team divided the subbasin into a set of smaller "Assessment Units." Definition of assessment units (AUs) was based on review of six landscape level characteristics known to influence ecosystem resources at broad landscape scales: lithology, precipitation, elevation, landforms, vegetation, and ownership patterns. These six characteristics have impacted both the historic and current status of resources within the subbasin due to their influence on broad-scale ecological function. The eight AUs defined for the Clearwater River subbasin are mosaics of 6th field Hydrologic Unit Codes (HUCs), the scale at which all data was assembled for the biophysical assessment of the subbasin. Assessment Units were developed for data and information gathering purposes in assessment development, and do not, by themselves, play a key function in defining the management responses presented in the Clearwater Management Plan.

C. Limiting Factors

Limiting factors are physical or biological conditions or processes, or effects of the same that impede the ability of species of management significance from expressing a more full realization of their historic productivity. The following limiting factors are compiled from the Clearwater Assessment. The compilation includes factors for subbasin-wide aquatic and terrestrial species. That is, the limiting factors listed below were deemed important in a significant area (or Assessment Unit) of the subbasin, but not necessarily in all areas. Therefore, these limiting factors are not listed in order of priority at the subbasin scale because their level of priority varies throughout the subbasin given its diversity. Additionally, because of data limitations, limiting factors could not generally at this time be defined by life-stage for the species of management focus. However, the best professional judgment of the technical teams was that given the diversity and complexity of the Clearwater subbasin, and attendant data limitations, further prioritization of limiting factors could be accomplished by at a finer geographic scale, particularly when management considerations such as implementation opportunity and response options were taken into account. This prioritization of limiting factors and linkage to management considerations is explained more fully in the "Potential Management Units" subsection below.

Limiting Factors in the Clearwater Subbasin

Vegetation (Assessment, Section 5.9)	Fish (Assessment, Section 8.3)
Physical (sun, temp, water)	Temperature
Biotic (herbivory, competition, disease)	Base flow
Human Cultural (land use)	Flow variation
	Sediment
Terrestrial (Assessment, Section 6.7)	Instream cover
	Watershed disturbances
Habitat loss, destruction, modification[1]	Habitat degradation
Human disturbance, presence, activities[2]	Exotics/Introgression
Herbicides, pesticides, chemicals	Harvest
Disease and parasite	Connectivity/Passage
Critical habitat	
Specialized reproductive capabilities	
Interspecies competition/selective predation	
Herbivory susceptibility	
Obligate relationships	
Natural disaster	
Sensitivities to climate/environmental changes	
Small endemic populations	
Global or regional limitations	

[1]grazing, agriculture, urban sprawl, construction, fire suppression, logging/fragmentation, mining, weeds
[2]scientific collection, recreation, vandalism, hunting/trapping/poaching

D. High Priority Limiting Factors (Management Plan, Section 4.4, p82)
As noted above, not all of the limiting factors identified in the Clearwater Assessment and Plan are ubiquitous. Moreover, some of the limiting factors identified are related or similar in presumed effect on managed species. However, the Clearwater planners did review and synthesize limiting factors into five high priority factors that primarily limit aquatic and terrestrial species and habitats in the Clearwater River subbasin at the full subbasin scale (Management Plan, Section 4.4). The purpose of the synthesis is to provide an umbrella characterization of key limiting factors at the full subbasin scale to provide a guidepost for overall subbasin management response and the further development of a strategic adaptive management implementation design. The five high priority limiting factors are: *instream temperature; sedimentation; loss/disturbance of riparian habitats; change in vegetative structure; alteration of environmental process* (e.g. fire regimes).

E. Potential Management Units - Synthesis and Definition (Assessment, Section 9, p360)
Potential Management Units are a key feature of the Clearwater Assessment and Management Plan. PMU's "scale-down" the assessment information, especially limiting factors, and set the stage for strategic management response options at a finer geographic scale. PMUs are groups of 6th Field HUCs, contiguous or noncontiguous, intended to characterize areas with similar themes or attributes that will influence restoration and/or recovery planning.

The PMUs are differentiated based on 38 attributes considered for their individual and combined influence to potential future management scenarios (See Table 1 below). Review of the 38 attributes reveals direct and inferred correlations with limiting factors identified in the Assessment. For example, the PMU defining attributes of "road density" and "sediment regime" correlate to the "sediment" and "connectivity/passage" limiting factors for fish identified in Assessment section 8.3. The coincidence of key defining attributes of a PMU with limiting factors within a PMU presents a key "Restoration Issue" (see below) and sets the stage for a prioritized management response within that PMU. Full discussions and comparisons of each PMU are found in sections 9.1, 9.2, and 9.3 of the Assessment. These Section 9 presentations are built upon more detailed information found in Section 8.3 of the Assessment, which identifies information sources, scales, compilation methods, and potential weaknesses pertaining to each dataset.

Some PMUs have considerable overlap in their overall characteristics. However, they can typically be differentiated from one another based on either one, or a combination of "distinguishing" attributes or characteristics (See Assessment Section 9). PMUs were not delineated principally in a species-specific manner due to a lack of comprehensive distribution and status information for some species, the heavy reliance on landscape level characteristics used to define them, and the potential for altered species distributions in the future (via reintroductions or habitat improvement). However, where applicable, species presence/absence, utilization distribution and status of aquatic and terrestrial focal species are provided within the discussion of each PMU. The "primary distinguishing characteristics" of each PMU is directly identified in Section 9 of the Assessment.

In order to emphasize major differences in planning concerns and implementation response feasibility, after delineation by "primary characteristics", PMUs are stratified further based on ownership of land: within the subbasin: that dominated by private ownership (excluding corporate ownership), mixed ownership (including corporate ownership), or federal ownership. Within the Clearwater subbasin, land use and management strategies and opportunity differ substantially between these ownership areas, and will likely impact future planning strategies within and between them. Identifiers have been assigned to each PMU by prefix and a number. Prefix codes are used to identify the primary ownership area within each PMU. These include PR (private), MX (mixed), or FD (Federal). Number codes are assigned sequentially within each ownership area as a means to differentiate PMUs.

Applying a primary characteristics and land ownership stratification yields a total of 23 Potential Management Units (PMUs) throughout the subbasin. (See Assessment Section 9 and Tables 2 through 4 below).

Table 1 Attributes used to delineate PMUs throughout the Clearwater subbasin, including descriptions of categories used to summarize data (Assessment, Section9, pg362)

Attributes	Description and comments	# of Variables
Species Attributes		
Distribution and Status	Presence/absence, and relative status if known	1
Life History Types	A run steelhead, B run steelhead, spring chinook, fall chinook, fluvial/resident bull trout, fluvial/resident cutthroat trout	8
Hatchery Influence	Relates to same species influence	1
Exotic Species	Brook trout distribution and status	1
Landscape Level Attributes		
Accessibility	Differentiates areas known to be blocked to anadromous species	1
Existing Protection	Differentiate areas with high degree of protected status (>90% or >75%)	2
Land Use (Dominant and Subdominant)	Forested or Agriculture/Range. Dominant and Subdominant (>25%) classes were considered	2
Ownership (Dominant and Subdominant)	Dominant classes: Federal, State, Private Corporation, Other Private Subdominant (>25%) classes: Federal, State, Private Corp Other Private, Tribal	2
Habitat		
Habitat Quality	From NPPC database	1
Limiting Factors	From Table 62 and NPPC database	2
Water Quality	Relative amount and distribution of 303(d) listed stream segments	1
Temperature Modeling	As potential limiting factor to species distributions (not related to water quality)	1
Hydrology/Water Use	Runoff Pattern (Lipscomb 1998) and Water Use	2
Disturbances		
Vulnerability	Percent of HUC within PSSZ	1
Grazing Potential	Percent of HUC defined as grazable: >50 High ; 20-50 Moderate; <20 Low	1
Road Density	Used USFS designations and added class delineating “Very High” density: Very High >5 mi./sq. mi.; High >3 mi./sq. mi.; Moderate=1-3 mi./sq. mi.; Low <1 mi./sq. mi.	1
Road Density in PSSZ	Designations based on USFS streamside road density designations with added class delineating “Very High” density: Very High>4 mi./sq. mi.; High=2-4 mi./sq. mi.; Moderate=1-2 mi./sq. mi.; Low<1 mi./sq. mi.	1
Mine Hazard (mines)	Sum of “Ecological hazard ratings” delineated by ICBEMP: Very High>100; High=50-99; Moderate=25-49; Low=10-24; Very Low<10	1
Mine Hazard (claims)	Estimated number of claims: Very High >500; High=200-500; Moderate=100-200; Low=50-100; Very Low <50	1
Sediment Regime	Major source(s) - Mass wasting, surface erosion, or both	1
Landslide Hazard	Used % of land area defined as Moderate-High Hazard: Very High>20; High=10-20; Moderate=5-10; Low=2-5; Very Low <2	1
Surface Erosion Hazard	Based on relative ratings developed by ICBEMP. Values assigned as quartiles with 20% of HUCs in each category: Very High, High, Moderate, Low, Very Low	1
Hazard Combinations	Road Density/Landslide Hazard; PSSZ Road Density/Landslide Hazard; Grazing Potential/Surface Erosion Hazard; Landslide/Surface Erosion Hazard	4

F. Restoration Issues (Management Plan, Section 4.4, p82)

The technical subcommittee, to link limiting factors to the PMUs, identified nineteen restoration issues. Restoration issues represent the causative actions for liming factors (e.g. mining and grazing), or are expressions of causative actions (e.g., high water temperatures, loss of prairie grassland habitats), or represent characteristics reflecting the lack of degradation and need for protection (e.g. wilderness and roadless management), or conditions that reflect degradation of critical characteristics (e.g., loss of riparian/wetlands or loss of ponderosa pine stands). The logic is that by addressing the restoration issues where they are known to exist, limiting factors will be addressed. Restoration issues are the product of contractor, technical subcommittee, and PAC development, discussion, and agreement throughout the planning process. The nineteen restoration issues are summarized below.

General Issues

- Wilderness - Protected Areas; continued protection of wilderness is implied.
- Roadless - Protected Areas; continued protection of diverse communities and high quality habitats in roadless areas within the subbasin is high priority as part of this plan.
- Roads - High densities were used as an indicator of any of a multitude of issues including hydrology, habitat fragmentation, noxious weed distributions and more.
- Landslide Prone Roads - Address roads where they exist on areas of mod-high landslide hazard.
- Sediment - Address sediment production and sources through locally appropriate methods (BMPs, reduced activity, road system planning, etc.)
- Mining Impacts- Investigate and minimize impacts of current and/or historic mining activities including mines, glory holes, and instream workings.
- Grazing Impacts - Considers intensity/distribution and relation to riparian/wetland impacts and sedimentation concerns.
- Surface Erosion – Specifically indicates that inherent surface erosion risk is high; may relate to numerous other activities or cumulative impacts (grazing, roads, harvest, fire, etc.)
- Dworshak Impacts - Used to represent potential negative impacts of Dam/Reservoir operations on aquatic species above or below Dworshak Dam.
- Water Use - Intensive water use resulting in substantial reductions in habitat availability or condition; Pertains specifically to LOID water use within PMU PR-4.
- Hydrology - Flashy nature of flows impacts aquatic habitats, and situation is believed to be exaggerated by current land use practices with potential for restoration.

Terrestrial Issues

- Ponderosa Pine (P-Pine) – Protection and restoration of Ponderosa pine stands. Prioritized only for PMUs with at least 5% P-pine coverage; localized efforts may be important elsewhere.
- Grasses - Protection and restoration of Prairie Grassland habitats
- Structure - restoration of the range of vegetative successional stages (early, mid, late seral) where they have been altered. May involve harvests, reduced fire suppression efforts, intentional burning or other methods, independently or in concert.
- Habitat Fragmentation - Not directly stated in prioritization scheme; degree of habitat fragmentation is considered to be indexed using Roads theme described above

Aquatic Issues

- Water Temperature – High water temperatures inhibiting the distribution or survival of focal fish species; often related to watershed-scale disturbance or land uses, but may be due to natural factors in some areas.
- Instream - in channel habitat work/improvements; Priority may be listed as "Undefined" since the need for such work is generally site specific and not definable at broader scales
- Riparian/Wetland - Protection of existing resources is first priority. Restoration of additional riparian/wetland areas may improve fish habitat, hydrology/flows, wildlife habitats or other factors.

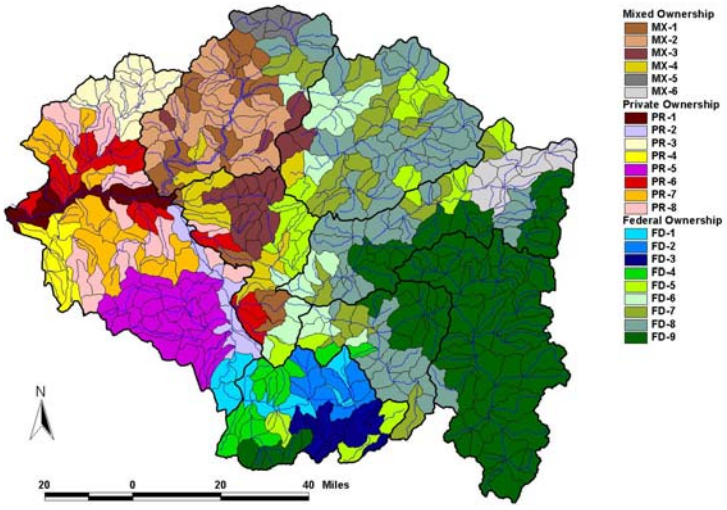
- Exotics - Competitive interactions of native and exotic species exist; appropriate actions may range from investigation of interactions to removal of exotics dependent on local situation and knowledge.

G. Prioritization of Restoration Issues by PMU

To focus future habitat work, a ranking of high, moderate, or low is assigned to each restoration issue within the PMUs. These rankings are relative and only important for the PMU were listed. Therefore, if listed under a given PMU, an issue ranked, as a low priority is important, but less critical than those defined as moderate or high. The Clearwater Subbasin Management Plan illustrates the prioritization of restoration issues, by PMU, in Tables 7-9 in Section 4.4: *Spatial Definition and Prioritization of Protection and Restoration Needs* on pages 82-96.

The Independent Science Review Panel in ISRP 2004-4, suggested modification of these tables to reflect more explicitly the restoration prioritizations by PMU. The summary statements for each land ownership type were also generated by the ISRP in its report. The ISRP summary provides a rough cut of factors that might limit fish and wildlife production in different habitat types throughout the Clearwater Subbasin. It is anticipated that during project development other aquatic and terrestrial population status data and/or analysis might be available at more project specific scales to strengthen the links between populations and habitat analysis and implementation actions. For example, surveys (fish, passage, habitat, etc.) conducted in Big Canyon Creek, Lapwai Creek, Potlatch River, and Red River will provide much finer scale data to prioritize implementation actions specific to those systems.

The Clearwater Subbasin planning teams concur with the ISRP's suggestions, table modifications, and summary statements as presented in Tables 2, 3, and 4, and through this supplement incorporate those into the Draft Clearwater Subbasin Plan without further modification.



Potential Management Units (PMUs) delineated in the Clearwater subbasin

Tables 7-9 in the Clearwater Subbasin Management Plan show restoration issues and priorities by PMU and land ownership. Colors shown in the following data matrices show the priority assigned to the restoration issue assigned by the management plan: yellow = highest, red = high, green = medium, and blue = low.

Federal Lands – Clearwater Subbasin

Table 2. Federal Land Ownership PMUs, restoration issues, and priorities by PMU from the Clearwater Subbasin Management Plan. ***Inferred Priority Ranking***: **yellow = highest, red = high, green = medium,** and **blue = low**.

	Federal Land Ownership – PMU's								
Restoration Issue	FD-1__	FD-2__	FD-3__	FD-4__	FD-5__	FD-6__	FD-7__	FD-8__	FD-9__
Wilderness_____				H+___					H+___
Roadless_____				H+___	H+___		H+___	H+___	
Road Density___	H____	H____	M____	H____	H____	H____			
Landslides						H____	H____		
Sediment						H____			
Mining	H-M__	H____	M____						
Grazing_____	H-M__	H____		H____	L_____	L_____			
Erosion	L_____				L_____				
Dworshak									
Water Use									
Hydrology									
Ponderosa Pine	H-M__					H-M__			
Prairie Grasses									
Vegetation Types	M____	H____	H____	H____	H____	H____	M____	M____	L_____
Habitat Fragment									
Water Temp____	L_____	M____	M____	M____	M____	M____	L_____	L_____	L_____
Instream Work		H____	H____			M____			
Riparian			H____						
Exotics Load____	L_____	M____	M____	M____	M____	L_____	M____	H____	H____

Federal Lands Prioritization Discussion

Based on a cursory evaluation of Table 1, the highest priority in the federal lands is for continued protection of wilderness and roadless areas. This is followed in priority order by addressing impacts on habitat from high road densities in FD-1 to FD-6, with the attendant landslides, sediment, and erosion related to high road density in steep forested lands. Another high priority issue is the lack of vegetation structural or successional diversity through most of the PMUs. Increased water temperatures and the presence of exotics occur throughout most of the federal PMUs and were judged to present moderate restoration problems. Certain PMUs had specific high priority restoration issues, such as mining impacts (FD-1, FD-2, and FD-3), grazing impacts (FD-1, FD-2, and FD-4), protection and restoration of Ponderosa Pine stands (FD-1 and FD-6), and the need for specific instream and riparian restoration projects (FD-2 and FD-3).

Mixed Ownership Lands – Clearwater Subbasin

Table 3. Mixed Land Ownership PMUs, restoration issues, and priorities by PMU from the Clearwater Subbasin Management Plan. ***Inferred Priority Ranking***: **yellow = highest, red = high, green = medium,** and **blue = low**.

	Mixed Land Ownership – PMU's					
Restoration Issue	**MX-1__**	**MX-2__**	**MX-3__**	**MX-4__**	**MX-5__**	**MX-6__**
Wilderness						
Roadless						
Road Density___	H-M__	L_____	M-L__	H____	M____	M____

Landslides	H	H				
Sediment	H	H			L	L
Mining						
Grazing	M	L	L	L		
Erosion				H		
Dworshak						
Water Use						
Hydrology						
Ponderosa Pine	H-M	H-M	H-M	H-M		
Prairie Grasses						
Vegetation Types	M	L	L	M	M	M
Habitat Fragment						
Water Temp	M	H	H-M	H-M	M	?
Instream Work	H	L		M		
Riparian						
Exotics Load	M	M	L	L	H	

Mixed Ownership Lands Prioritization Discussion

Based on a cursory evaluation of Table 2, in the mixed land ownership category, the highest priority is for protection and restoration of Ponderosa Pine stands and in dealing with widespread increased water temperatures. This is followed in priority order by addressing impacts on habitat from high road densities throughout the mixed ownership PMUs, with the attendant landslides, sediment, and erosion related to high road densities. These issues are particularly pertinent to the MX-1, MX-2, and MX-4 PMUs. Another widespread priority issue is the lack of vegetation structural or successional diversity through most of the PMUs. The presence of exotics is also a moderate priority concern throughout the mixed ownership PMUs. Grazing impacts occur throughout this ownership category, but appear to be of low priority concern.

Private Land Ownership – Clearwater Subbasin

Table 4. Private Land Ownership PMUs, restoration issues, and priorities by PMU from the Clearwater Subbasin Management Plan. ***Inferred Priority Ranking***: **yellow = highest, red = high, green = medium,** and **blue = low**.

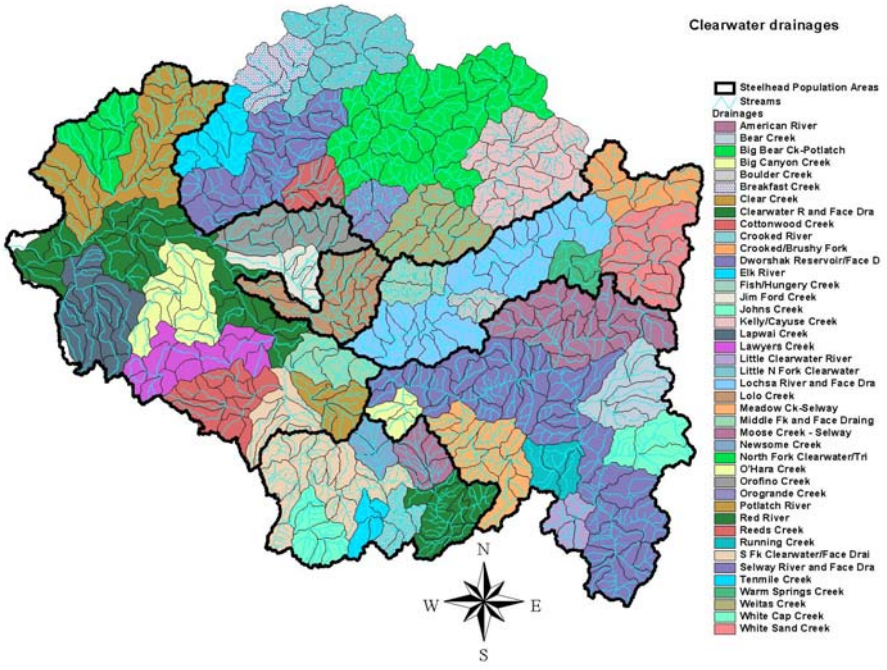
	Private Land Ownership – PMU's							
Restoration Issue	PR-1__	PR-2__	PR-3__	PR-4__	PR-5__	PR-6__	PR-7__	PR-8__
Wilderness								
Roadless								
Road Density			H					
Landslides	L	M				M-L		
Sediment	L	L	H			H		
Mining								
Grazing	L	L	H	M	M	M	L	L
Erosion				H	H		H	H
Dworshak	H							
Water Use				H				
Hydrology					L			
Ponderosa Pine	H-M	H-M		H-M	H-M	H-M		H-M
Prairie Grasses	H	H		H	H	H	H	H
Vegetation Types			M					
Habitat Fragment								
Water Temp	H	L	H	M	M	H	H	H
Instream Work			L	L	L	L	L	L
Riparian				M	H	?	?	?
Exotics Load						L		

Private Lands Prioritization Discussion

Based on a cursory evaluation of Table 3, in the private land ownership category, the highest priority is for protection and restoration of Ponderosa Pine stands, Prairie Grassland habitats, and in dealing with the widespread risks of erosion and increased water temperatures. The risk of surface erosion is a high priority concern in a number of PMUs, coupled with apparent impacts from grazing, landslides, and sediment load throughout all or most of the PMUs. Certain PMUs had specific high priority restoration issues, such high road densities (MX-3), grazing impacts (MX-3), impacts from Dworshak Dam (MX-1), and impacts from water use (abstractions) (MX-4). The need for riparian protection and instream habitat work appears common to many of the private land ownership PMUs, but of lower priority.

H. Drainages in the Clearwater River Subbasin

The Clearwater Plan augments the PMU tables above by explaining where PMU's are found by "drainage". Drainages delineated in the Clearwater River subbasin and are defined as commonly recognized watershed areas made up of three or more 6th field HUCs (Figure 2 below). There are 42 drainages in the Clearwater River Subbasin. Narrative summaries of the 42 drainages are presented in Section 6.1 of the Inventory. These drainage summaries identify the PMU types present; identify the limiting factors, existing focal species, restoration issues, and existing projects RME actions. The summaries conclude with a generalized discussion of present and anticipated management approaches. The existing projects inventory (Assessment, Appendix B) is an expansive spreadsheet that organizes information on several geographic scales including drainage.



Drainages defined to aid in utilization of PMUs for project planning and review

The following excerpt is a drainage summary example from the Inventory Section 6.1, p37.

> **American River (South Fork Clearwater AU)**
> PMU: FD-1, 2. These HUCs are highly impacted by roads, grazing, and mining. All Temperature, sediment, instream cover, watershed disturbances, and habitat degradation limit aquatic focal species, and moderate connectivity/passage issues for bull trout and westslope cutthroat. Ponderosa pine inventory need is a high priority. Steelhead habitat quality rated fair and along with mainstem is rated lowest in South Fork Clearwater. Projects: Little and Big Creeks to Elk Creek are on the Idaho 303(d) list and were part of the general South Fork Clearwater TMDL recently completed and submitted to EPA for review. RME: Chinook, steelhead, bull trout redd surveys conducted by IDFG and the NPNF; American River is an IDFG supplementation study treatment stream. Discussion: Significant data gaps exist for population status and habitat conditions, which need to be addressed so that a restoration strategy can be identified.

I. Component Synthesis for Management and Prioritization in the Clearwater Subbasin

Habitat restoration prioritization is driven by subbasin-wide limiting factors, which are defined relative to the focal aquatic and terrestrial species used in the planning process. PMUs are then defined by consideration of 38 key characteristics. With PMUs so defined, the limiting factors are evaluated relative to the key characteristics of the PMU, enabling a ranking of the key restoration issues for the PMU in Tables 2, 3, and 4. Finally, drainages and their component PMUs are described with specific restoration needs, focal species, limiting factors, and proposed management response presented

It is anticipated that during project development other aquatic and terrestrial population status data and/or analysis might be available at more project specific scales to strengthen the links between populations and habitat analysis and implementation actions. For example, surveys (fish, passage, habitat, etc.) conducted in Big Canyon Creek, Lapwai Creek, Potlatch River, and Red River will provide much finer scale data to prioritize implementation actions specific to those systems. Obvious prioritization themes will include those restoration issues prioritized at the PMU level.

J. General Summary of Management Approach—Protection/Restoration

While the component synthesis presented above is critical in understanding the linkage between key assessment finding and the prioritization of management responses at the PMU and drainage scale, it is also noteworthy that the Clearwater planners identified management priority by management "theme". Section 6.2 of the Inventory provides general conclusions for the management response in the Clearwater Subbasin by PMU and with reference, where applicable to drainages. These conclusions are presented by protection, enhancement, and restoration themes. Section 6.2, in combination with the restoration theme synthesis provided results in the following:

Priority #1 - Protection: Continue protection of PMUs FD-8, 9, which have the highest level of existing management protection and represent 47% of the entire subbasin. Drainages comprising a combination of FD-8, 9 and other PMUs should be prioritized in the context of the entire drainage. FD-8, 9 PMUs include: Fish/Hungary Creek, Johns Creek – upper, Kelly/Cayuse

Creek, Little Clearwater River, Little North Fork Clearwater – some HUCs, portions of the Lochsa River/Face Drainages, Meadow Creek–Selway, Moose Creek-Selway, Ohara Creek-upper HUC, Selway River/Face drainages-most HUCs, Tenmile Creek-upper HUC, Warm Springs Creek, Weitas Creek-some portions, White Cap Creek, White Sand Creek.

Protect high quality habitat in other PMUs with intact temperature and sediment regimes, and riparian characteristics.

Priority #2 - Enhancement and Restoration: Efforts should be prioritized where work will benefit habitat used by anadromous fish species, to include drainages below Dworshak Dam or natural passage barriers (e.g., Orofino Creek, Jim Ford Creek). New project starts should be reviewed to evaluate drainage specific species data to distinguish between proposals.

Priority #3 – Blocked Drainages: Including drainages above Dworshak Dam and other natural passage barriers (e.g., Orofino Creek, Jim Ford Creek)

Furthermore, the Clearwater planners formalized the roles of the Clearwater Focus Program and the Clearwater Policy Advisory Committee in Section 2.1 of the Inventory to enhance their management priority by theme concept. Those roles are as follow:

The Clearwater Focus Program will continue under the 2000 Columbia Basin Fish and Wildlife Program and the subbasin plan to enhance and restore aquatic and terrestrial habitats to meet the goals of the Council's program. Requests for program funding will be made during provincial reviews. The Focus Program co-coordinators will prepare an annual report on activities in the subbasin including a summary analysis of the efficacy of each habitat project and presented findings at the winter quarter Clearwater Policy Advisory Committee (PAC) meeting. Provincial reviews and scheduled reviews and amendment to the Clearwater Subbasin Plan will be coordinated through the Focus Program. The Clearwater Subbasin Plan will be reviewed and amended as necessary beginning in 2008 and every three years thereafter. The Focus Program co-coordinators will present a schedule for the Clearwater Subbasin Plan review and amendment to the PAC at the winter quarter meeting of the review year.

The Focus Program co-coordinators will provide the PAC with administrative and management support and maintain records of activities; the Nez Perce Tribe Focus Program co-coordinator will be a designated alternate PAC member. The PAC will operate under their January 2000 Charter, which will be amended to include a review and recommendation function for project proposals submitted through the Council's program for Bonneville funding.

K. Application of Assessment/PMU Synthesis to Management Plan Problems/Objectives/Strategies

Having clarified how limiting factors and restoration issues are synthesized and presented by PMU and drainage, it is useful to review how they relate and add to definition to the Problem Statements, Objectives, and Strategies set forth in 4.2.2 of the Management Plan. For example, Problem 2 of the Management Plan states:

> "Anadromous fish production is limited by habitat quantity, quality and connectivity in portions of the subbasin."

The Objective listed for that Problem 2 states:

> "Increase anadromous fish productivity and production, and life-stage specific survival through habitat improvement."

Seven individual Strategies, and a discussion follow that Problem statement and Objective, all relating to applying habitat treatments, prioritizing them or developing data and information that is currently lacking. As habitat treatments or data gathering activities are considered (both in terms of type and location) under these strategies in following implementation processes, the information and prioritization presented within the PMU Tables 2 though 4 and drainage delineations summarized in Tables 2 through 4 above and the drainage specific descriptions in Section 6 of the Inventory will guide the implementation of the Objective and Strategies for Problem 2. This is but one example of how the PMU and drainage synthesis augment the Objectives and Strategies in the Management Plan. Similar Objectives and Strategies are presented for resident aquatic species and terrestrial species.

II. New Information Developed in the Planning Process

Although this series of plan documents relied primarily on existing data sources, in a limited number of instances, it was practical and/or necessary to develop new information to aid in the subbasin assessment and planning process. Most commonly, development of new information involved basic modeling or synthesis of existing data to provide a useful tool for current and future planning efforts (e.g. uniform prediction of landslide hazard ratings across the subbasin). For cases when new information was developed, specific methods used to do so are described in the corresponding sections of this assessment. Table 5 provides an overview of new information developed for use in this assessment, including relevant section and figure numbers where readers can find additional details on the methods used for development of each item.

Table 5. Overview of new information developed during the Clearwater subbasin planning and assessment process. (Clearwater Assessment, Section 3, p27 – figure references are to Assessment document)

Assessment Section	General Topic	New Information	Relevant Figures	Overview
4.6	Sedimentation	Potential Sediment Source Zone (PSSZ)	"Figure 14,15"	Variable width buffer around streams, based on topography. Subbasin wide surrogate for sediment transport efficiency.
4.6	Sedimentation	Landslide Hazard	"Figure 13"	Uniform application of an existing landslide hazard model across the subbasin.
4.8	Water Use	Max. Allowable Water Use	"Figure 19,20"	Defines maximum allowable potential use of groundwater or surface water by land section; derived from existing water rights and adjudication claims databases.

4.10.7	Land Uses	Index of Grazeable Lands	"Figure 37"	Uniform overview of the distribution of probable grazing activities for each 6th field HUC within the subbasin.
7.2	Aquatic Productivity	Modeled results– Aquatic Production Potential.	"Figure 98,99"	Applies an experimental approach to estimate relative production potential (productivity) by 5th field HUC across the subbasin.
8.3.5	Aquatic Limiting Factors	Road Culvert Index	"Figure 10"	Index of road culvert abundance, by 6th field HUC, across the subbasin.
8.3.6	Aquatic Limiting Factors	Mean Weekly Maximum Temperature (MWMT)	"Figure 111,112"	Uniform application of an existing water temperature model across the subbasin. Results are compared to requirements of focal aquatic species.
Chapter 9	Resource Synthesis	Potential Management Units (PMUs)	"Figure 113,114,115,116",	PMUs are derived to assist in data synthesis and interpretation, spatial prioritization of protection and/or restoration, and identification and prioritization of primary issues to be addressed to restore fish and wildlife resources.

III. Discussion of relationship between artificial production activities and current and proposed habitat protection and restoration activities.

The Clearwater Management Plan includes specific adult return objectives for anadromous species (See Table 3, Clearwater Management Plan, p. 16). These objectives aim to meet mitigation, restoration, harvest and recovery goals. These anadromous species objectives require a combined application of habitat protection and restoration strategies and artificial production strategies, and mitigation of deleterious out-of-subbasin effects.

There are multiple artificial production programs being conducted in the Clearwater subbasin by the U.S. Fish and Wildlife Service, Nez Perce Tribe, and Idaho Department of Fish and Game. Each serves a variety of program purposes. Appendix 2 contains two tables that present compiled artificial production facilities information. All of the artificial production programs in the Clearwater were operating or in advanced stages of planning before Focus Program habitat restoration projects were started in 1997. All of the Focus Program habitat restoration projects are in drainages (watersheds) where hatchery releases occur. There are no hatchery releases in FD-8 and 9 PMUs, for which protection status is recommended (Clearwater Inventory, Section 6.2). The Clearwater River subbasin managers contend that use of a mix of hatchery and natural

production strategies will be needed in order to meet mitigation, restoration, harvest, and recovery goals. Strategies to do so are given in Problem 3, Objectives C and D (Management Plan, p13).

Problem 3 in the Draft Clearwater Management Plan states: "Management of hatchery and natural production are not adequately integrated to meet mitigation, restoration, harvest, and recovery goals. The Management Plan proposes a response in Objective C: "Develop an integrated management plan to optimize the use of hatchery fish to meet recovery and harvest objectives" (Management Plan, page19). It is the intention of subbasin managers to address this problem by organizing a subbasin hatchery production committee, develop stock specific knowledge of interactions between hatchery and wild fish, and increase hatchery effectiveness by developing hatchery fish stocking and marking guidelines for all life stages.

Further, the Clearwater Management Plan acknowledges that it will be necessary to further the "knowledge of specific hatchery stocks and their potential interactions with wild fish". (Management Plan, Section 4.2.2, Problem 3, p20). Problem 3, Objective D (Management Plan, pg 21) addresses the use of hatchery and natural production strategies to achieve subbasin recovery goals given in Table 3 (Management Plan p16).

The Clearwater Management Plan acknowledges that the work being done by the Council's Artificial Review and Production Evaluation (APRE) initiative and the development of Hatchery and Genetic Management Plans (HGMPs) will complement and inform the integrated management plan called for in Problem 3, Objective C. These initiatives are a work in progress and will be important in reviewing and refining artificial production strategies and their relationship to other management actions in future iterations of the Clearwater Plan.

IV. Further Development of the Research, Monitoring and Evaluation of the Clearwater Plan.

The Clearwater Management Plan included a comprehensive proposal for research, monitoring, and evaluation activities. The ISRP review stated that this component of the Clearwater Plan should be more specifically focused. Subsequent to that ISRP review, the Council adopted a policy that, for this iteration of subbasin plans, additional development of these components should be postponed pending work being conducted at a regional scale on these issues. In accord with that decision of the Council, the Clearwater planners and resource managers will wait to see how their participation is sought in those efforts and what guidance those regional initiatives provide before it considers revisions to this area of the plan. In the meantime, the Clearwater planners and resource managers believe that adequate research; monitoring and evaluation are in place to inform near-term adaptive management. For example, for activities funded by Bonneville, proposals are reviewed by the ISRP to ensure that provisions for monitoring and evaluation at the project scale are in place.

Appendix 1. Sources Used to Delineate Limiting Factors in the Clearwater Subbasin from Draft Clearwater Assessment 2003, Sections 5.9, 6.7, 8.3, and Appendix G

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Appendix 2 Description of artificial production programs in the Clearwater River subbasin

Stock	Initial Broodstock	Operating Broodstock	Adult Collection/Holding	Central Facility (Incubation/rearing)	Acclimation and release sites	Funding Source
Chinook –S	Little White, Leavenworth, Rapid River	Dworshak	Dworshak	Dworshak NFH/ Kooskia NFH	Dworshak N.F. Clearwater	LSRCP
Chinook –S	Rapid R., Crooked R., Red R., Powell., Kooskia	Rapid R, Crooked R, Red R, Powell, Kooskia	Red R, Crooked R., Powell, Kooskia	Clearwater Hatchery, Kooskia NFH	Upper Red, Crooked, Clear Cr., Pete King, Fishing (Squaw), Bear (Papoose), Colt Killed, Big Flat Cr	LSRCP
Chinook –S	Rapid River	Rapid River Dworshak	Yoosa, Newsome, Mill	Nez Perce Tribal Hatchery	Yoosa, Newsome, Mill , Meadow, Boulder, Warm Springs Creeks	BPA
Chinook –S	Carson/ Rapid River	Kooskia	Kooskia/Dworshak	Dworshak, Kooskia NFH	Kooskia at Clear Creek	USFWS
Chinook –F	Snake R. @ Hells Canyon Dam	Lyons Ferry	Lyons Ferry	Lyons Ferry; FCAP Project	Big Canyon Creek	BPA, LSRCP
Chinook –F	Lyons Ferry	Local	N. Lapwai, Lukes Gulch	Sweetwater Springs and NPTH	Cedar Flats (Selway), mainstem Clearwater, Lapwai, Lukes Gulch (S. Fork)	BPA
Steelhead	Dworshak – North Fk. Clearwater B-run	Dworshak	Dworshak	Dworshak NFH	Clearwater, South Fork, and Middle Fork	USACE
Steelhead	Dworshak – North Fk. Clearwater B-run	Dworshak	Dworshak	Clearwater Hatchery	South Fork and Middle Fork Clearwater,	LSRCP
Steelhead	Dworshak – North Fk. Clearwater B-run	Dworshak	Dworshak	Clearwater Hatchery, Dworshak and Hagerman NFHs	Lolo, Mill, Newsome, Meadow, American, Red Crooked R, N. Fork	LSRCP, USACE
Coho	Eagle Creek, Bonneville,	Creating Broodstock w/ Adult Returns	Kooskia, Dworshak, Potlatch , Lapwai,	Dworshak, Clearwater, NPTH	Sweetwater Springs, Kooskia, Potlatch , Meadow, Lolo, Lapwai	BPA

Modified from Table 56 Draft Clearwater Subbasin Assessment November 2003

Appendix 2 Hatchery releases in the Clearwater Subbasin

Stream	Drainage	Chinook S[1] Clearwater	Chinook S[2] Dworshak	Chinook S[3] Kooskia	Chinook S[4] NPT	Chinook F[5] Cherry Lane	Chinook F[6] Big Canyon	SH-B[7] Clearwater	SH-B[8] Dworshak	Coho[9]	Watershed Projects	
Operator		IDFG	USFWS	USFWS	NPT	NPT	NPT	IDFG	USFWS	NPT		**PRODUCTION PURPOSE**
Colt Killed	White Sand Creek	300,000 f									yes	[1]harvest, conservation/recovery, research and/or education
Pete King	Lochsa and Face	13,000 f									yes	[2]harvest
Fishing (Squaw)	Lochsa and Face	12,000 f									yes	[3]harvest, conservation/recovery, research and/or education
Boulder	Boulder Creek	84,888 f 84,000 y									yes	[4]conservation/recovery, education
Warm Springs	Warm Springs	20,000 f 20,000 y									no	[5]harvest, conservation/recovery, research and/or education
Bear (Papoose)	Lochsa and Face	50,000 y									yes	[6]harvest, conservation/recovery, research and/or education
Powell Satellite	Crooked/Brushy Fork	335,000 y									yes	[7]harvest, conservation/recovery
Red River	Red River	415,000 y						250000 y	366,666 y		yes	[8]harvest, conservation/recovery
Newsome	Newsome Creek	75,000 y			115,000 y			100000 y	100,000 y		yes	[9]conservation/recovery
Mill	S Fk and Face	40,000 y									yes	
Meadow (SF)	S Fk and Face	300,000 y							550 - 2,200a	100,000 f	yes	
S Fork mainstem	S Fk and Face		766,666 y					190000 y			no	**LIFE STAGE AT RELEASE**
Crooked River	Crooked River	228,000 y						250000 y	366,666 y		no	a - adult
American River	American River							100,000 y	100,000 y		no	f - fingerling
Lukes Gulch	S Fk and Face					200,000 f					no	y - yearling
Meadow (Sel)	Meadow Creek				416,000 f					200,000 f	no	X - number unknown
Cedar Flats	Selway and Face					200,000 f					no	
Big Canyon	Big Canyon						150,000 y 800,000 f				yes	
Lolo	Lolo Creek	150,000 y			110,000 y			50,000 y			yes	**PROJECT OBJECTIVES (from Management Plan)**
Eldorado	Lolo Creek									90,000 f	yes	
Lapwai	Lapwai Creek					500,000 f				25,000 fry 275,000 y	yes	Watershed projects address the following objectives: O, P, Q,

Mission	Lapwai Creek						X fry	yes
Orofino	Orofino Creek						X fry	no
Potlatch	Big Bear/Potlatch						275,000 y	yes
Clearwater Main				500,000 f				no
North Fork (hatch)			766,666 y			1.2 mil y		no

S, U, EE, JJ, LL and some of: Z, AA , BB, DD, FF. All have M/E

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