

# **WRIA 21**

## **Queets/Quinault**

# **Salmon Habitat Recovery Strategy**

January 2010



## 1.0 Introduction

Watershed Resource Inventory Area (WRIA) 21 (Figure 1) encompasses an area of 755,674 acres along the Pacific coast of the Olympic Peninsula from Kalaloch Creek in the north to Connor Creek in the south, and includes the watersheds of the Queets/Clearwater, Quinault, Moclips, Raft, and Copalis Rivers, plus several small streams that flow directly into the Pacific Ocean. Also included are marine shorelines encompassing approximately 65 miles. This WRIA contains some of the last remaining free-flowing large rivers in the lower 48 states, and contains a large contiguous area of undisturbed habitat in the Olympic National Park (ONP). As such the aquatic and riparian habitats in WRIA 21 include areas that are relatively pristine as well as areas that have been greatly affected by logging and other land-use activities over the last century.

Significant acreage is owned by various governments and large forest landowners which have natural resource management responsibilities. These include the Quinault Indian Nation, Olympic National Park, Olympic National Forest, Department of Natural Resources, and private forest landowners. In addition, there are other federal, state, and county governments with management authority. The entire WRIA constitutes a portion of the QIN Usual and Accustomed Fishing and Hunting Area.

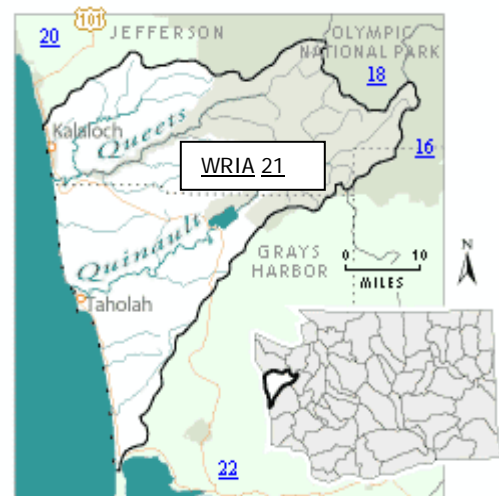


Figure 1. WRIA 21

The following sections describe elements of an overall strategy for salmon habitat restoration in WRIA 21. Application of this overall strategy is expected to gradually restore salmon populations and the integrity of natural processes upon which they rely. However, salmon restoration in WRIA 21 will not be complete until our vision is achieved (Section 2.0.)

## 2.0 Vision Statement

*All of the watersheds in WRIA 21 contain healthy, diverse populations of salmon sustained by healthy ecosystems that are supported by undisrupted physical and biological processes, and contain abundant, contiguous aquatic, near shore, estuarine, and riparian habitats utilized by diverse, species-rich biological communities that support and service the cultural and other value-based needs of local stakeholders.*

## 3.0 Strategic Priorities

The Technical and Citizen Review Groups (or Committee) developed this mission statement in 2002:

***“Our mission is to protect and restore physical and biological processes that benefit naturally spawning salmonids and their habitats.”***

A strategic approach based upon this mission statement has been developed to guide potential project applicants and to form the basis for evaluating and rating potential restoration actions. This strategy is to encourage, design, and prioritize proposed preservation and restoration activities based on the following criteria:

- ◆ Priority Stocks selected based upon biological and cultural significance.
- ◆ Upper Quinault River. The Quinault Indian Nation has designated the Upper Quinault River a top priority for restoration of sockeye habitat. As a result, a Restoration Plan has been written providing specific guidance on locations, sequencing, and types of restorative construction required (Herrera et al, July 2008).
- ◆ Queets River Restoration Plan(to be completed).
- ◆ Queets-Clearwater spring/summer Chinook Plan (to be completed)
- ◆ Remote sensing (orthophotography, LiDAR, etc). With the rapidly changing physical surface of the land and stream channels and vegetation canopies in WRIA 21, it is important to measure such changes periodically. The primary tools for such measuring lie within aerial (remote) sensing methods such as orthophotography and LiDAR.
- ◆ Land acquisition. When land acquisition for salmon habitat recovery purposes may be involved in a larger purchase by the Nation, then specific measures in this regard may be considered. The Nation is aware of the value of this category under SRFB Manual 18. As it pertains to conservation easement, acquisition may be considered within the goals and objectives of the Nation.
- ◆ Noxious weeds. In recent years, plants such as Japanese knotweed and (others to be listed) have been found to colonize so densely in riparian areas that normal shade plants and riparian species cannot provide normal biological function and diversity. Some species have also invaded stream channels and flood plains in such thickness that salmonids have difficulty spawning and rearing. Specific actions for treating/eliminating noxious weeds are found in Table 3, p. 13.
- ◆ Priority Watersheds, based upon biological and cultural significance.
- ◆ Priority Watershed processes as identified in the WRIA 21 limiting factors analysis (Smith and Caldwell, 2001), various watershed analyses, and other documents.
- ◆ Identified limiting factors affecting watershed processes and associated habitat types necessary for viable fish production.
- ◆ Community issues and priorities.

The following sections describe in more detail the strategic components.

#### **4.0 Stock Prioritization**

Smith and Caldwell (2001) provide salmonid stock status for WRIA 21. Stocks include chinook, chum, coho, sockeye, pink, steelhead, bull trout, Dolly Varden, and coastal

cutthroat (Appendix 2). All stocks are important for a healthy functioning ecosystem. Stock status in the Limiting Factors Analysis (LFA) are not considered complete. The Quinault Nation Fisheries program has prioritized stocks based on two criteria:

1. Status compared to historic stock levels, and
2. Current wild production relative to potential production.

Based on these two criteria, three salmon stocks are top priority for restoration. They are:

1. Queets chinook (Integrated: spring/summer/fall)
2. Queets coho
3. Quinault sockeye

A number of stocks are of lower but substantive priority based on current wild production relative to potential production. These include:

1. Quinault chinook (Integrated: spring/summer/fall)
2. Quinault Coho

Bull trout are the only salmonid species within the WRIA listed under the Endangered Species Act (Threatened). In most watersheds, listed species are given a priority status in the watersheds' salmon recovery strategy. However, in WRIA 21 existing information seems to indicate that native char populations (including Bull Trout and Dolly Varden) are relatively stable and abundant. Given that their spawning habitat is largely protected within Olympic National Park, and that the number of projects designed to address habitat specifically used by bull trout are limited, we have chosen to consider all native char as non-priority species for habitat restoration projects, understanding that they will benefit to varying degrees from projects targeting the other priority species. If new information becomes available indicating that the status of native char populations are changing, or that specific habitat types not currently prioritized within this strategy are critical to the survival of native char, the strategy may be revised to reflect new information. Similarly, as this strategy is a living document, priorities for other salmonid species and habitat may change over time as new information becomes available.

Table 1, below, summarizes status for those stocks listed above. Data are drawn from two sources: Limiting Factors Analysis (Smith and Caldwell, 2001), and unpublished data from the QIN Fisheries. Appendix 2 contains a list of all salmonid stocks and species found in WRIA 21. No management or recovery activity, whether addressing them specifically or not, will be implemented if harm to any would result.

(a) LFA lists Queets coho as composite (i.e., natural and hatchery)

## 5.0 Watershed and Habitat Prioritization

There is considerable variation in salmon abundance, species diversity, and potential habitat capacity among watersheds within WRIA 21. This variation can affect levels of community support, biological impact and likelihood of success for any restoration efforts, especially when viewed from a WRIA-wide perspective. Therefore, the Committee grouped the watersheds into three categories by size and assigned associated priorities for project consideration. The marine/near shore has been included in its own category. The Committee determined that watershed prioritization based on these categories with focus on limiting processes is appropriate and applicable to its Vision, Mission, and strategic priorities.

### A. Freshwater:

Within these watersheds priority habitats and limiting factors include:

1. Off-channel rearing habitat in rivers, tributaries, and associated wetlands.
2. Access by salmon to spawning and rearing habitat now blocked from their use.
3. Spawning habitat quality and quantity.

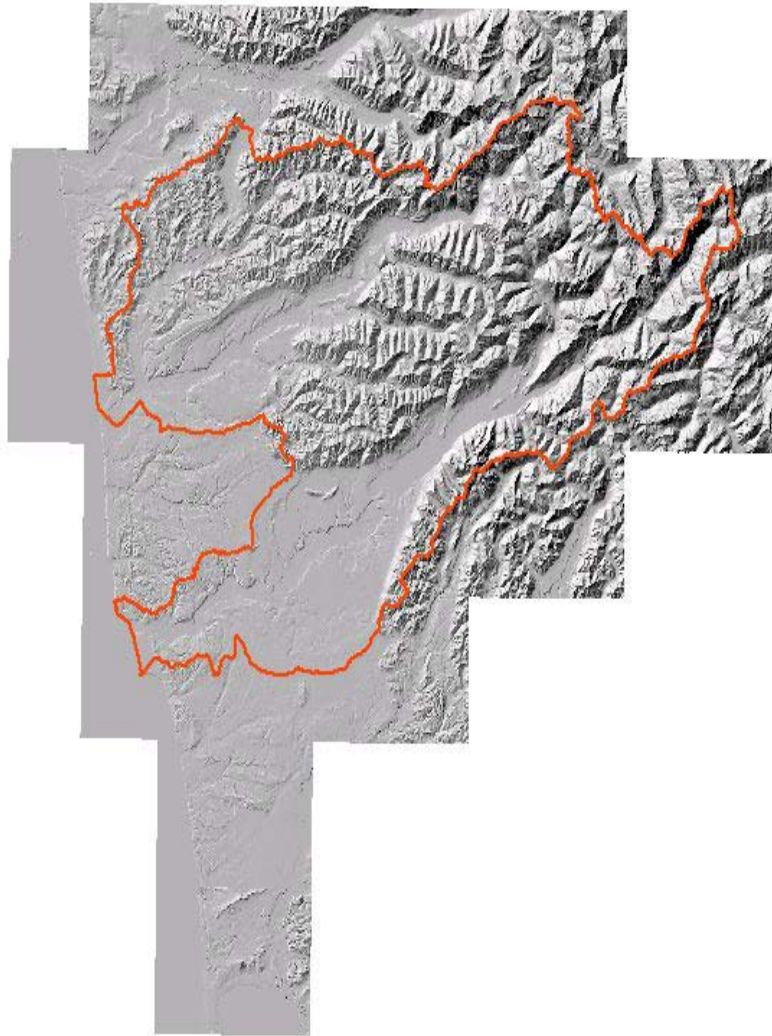
**Table 1. WRIA 21 Priority Stocks**

<b>Stock(s)</b>	<b>Status LFA (2001)</b>	<b>Status (QIN Fisheries unpublished data)</b>
Queets chinook spring/summer Fall	Depressed Healthy	Diminished/stable Diminished/stable
Queets coho (natural)	Healthy (Composite)	Diminished/stable (Natural)
Quinault sockeye	Healthy	Diminished/stable
Quinault chinook spring/summer Fall (natural)	Depressed Healthy	Diminished/stable Diminished/stable
Quinault coho	Unknown	Diminished/stable

For details on priority habitats and limiting factors, please refer to Section 6 of this strategy and the WRIA 21 limiting factors analysis (Smith and Caldwell, 2001).

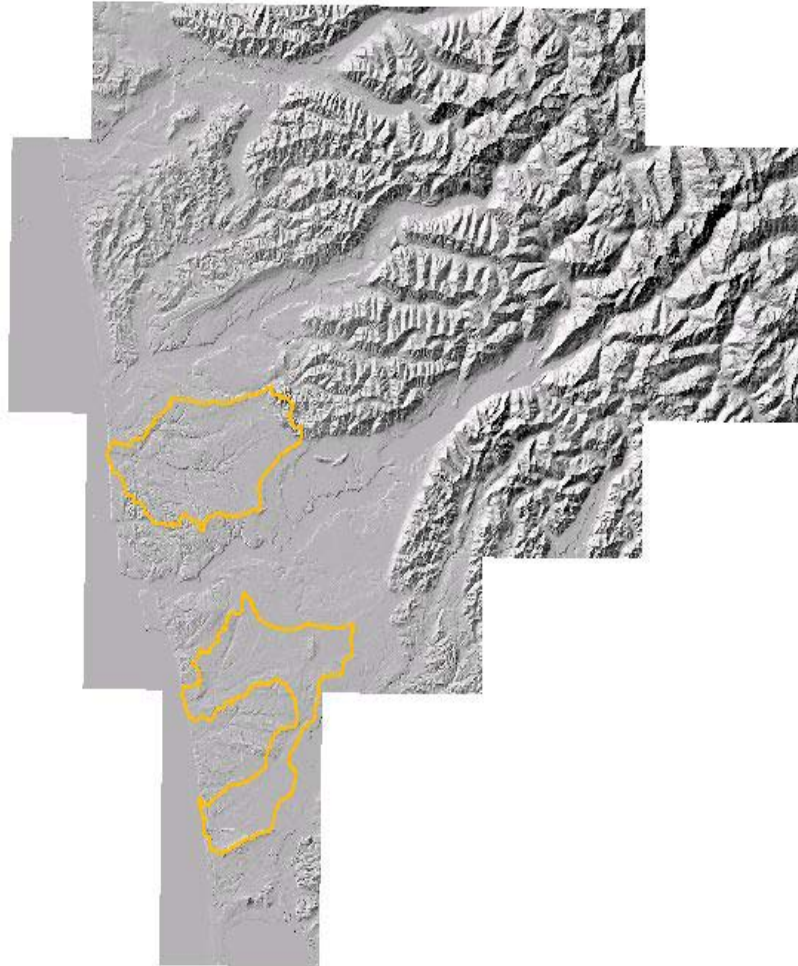
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**High priority watersheds (Fig. 2):** the Queets and Quinault Watersheds are the largest in WRIA 21. They also contain the largest populations of salmon, the greatest species diversity and most complex ecosystems in the Area. As such, these watersheds also possess the greatest potential habitat capacity and are the most likely to benefit from activities directed toward restoration. Both watersheds have protected headwaters and form the largest contiguous intact headwaters habitat within WRIA 21.



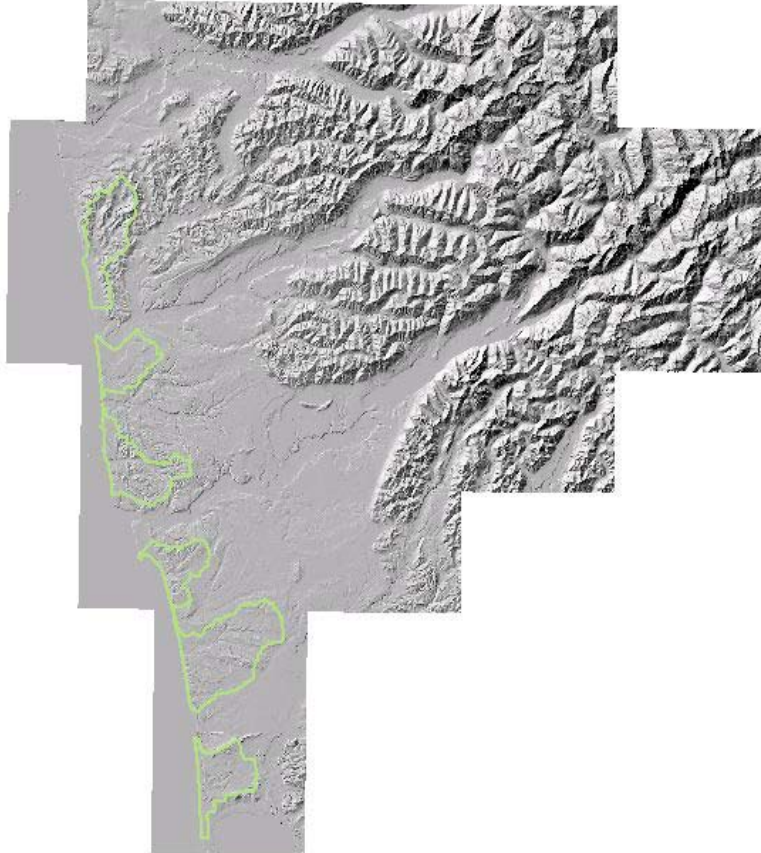
**Figure 2. High Priority Watersheds: Queets and Quinault**

**Medium priority watersheds (Fig. 3):** the Moclips, Raft, and Copalis Rivers are intermediate size watersheds with substantial salmon populations and complex aquatic ecosystems. Each of these systems has the potential to benefit from restoration activities. From an overall WRIA 21 perspective, the anticipated benefits from restoration would be intermediate.



**Figure 3. Medium Priority Watersheds: Raft, Moclips, and Copalis Rivers**

**Low priority watersheds (Fig. 4):** Kalaloch, Whale, Camp, Duck, Wreck, Joe, Elk, Boone and Connor Creeks are small watersheds (listed in order North to South), directly tributary to the Pacific Ocean. Watershed size ranges from 2 to 28 square miles. Most have small salmon populations and relatively simple ecosystems. Although each has potential for benefits from restoration, and local increases in salmon populations, the benefits from a WRIA-wide perspective would be small. They are listed as low priority watersheds. Unnamed streams tributary to the Pacific Ocean are also included in this grouping.



**Figure 4. Low priority watersheds that are direct tributaries to the Pacific Ocean.**

#### B. Marine near shore

For convention the near shore is generally defined as the area that extends from tree line to minus 30 meters (90 feet) Mean Low Low Water (MLLW) and to the upstream limit of tidal influence. Marine riparian vegetation and sediment-supplying eroding bluffs (feeder bluffs) support healthy near shore habitat and are therefore considered a part of the near shore environment. The large data gaps in fish use of the WRIA 21 nearshore, relatively small size of coastal estuaries combined with the documented severe degradation of the freshwater watershed have resulted in the nearshore receiving lower restoration priority

within the WRIA 21 strategy. From this lower priority perspective, there are three main areas of focus:

1. Addressing data gaps on function of coastal estuaries for salmon and the resources on which they depend;
2. Restoring near shore forming sediment and hydrologic processes. Specifically restoration projects should focus on the structures that limit sediment and hydraulic processes. Alterations of lower rivers and shorelines including loss of LWD and riparian corridors, shoreline armoring, fill, and over water structures are a restoration priority;
3. Preserving high quality intact shoreline areas including river mouths, riparian corridors, and feeder bluffs.

Identified near shore projects and proposed prioritization for WRIA 21 are provided in Table 3).

## 6.0 Project Prioritization

Individual proposed projects will be evaluated and prioritized based on the respective watershed priority, stocks of concern, and their unique merits, potential benefits, and their consistency with the strategic priorities. The primary factors that should be used for evaluating projects and guidelines for rating projects are:

- *Freshwater and Near shore Habitat priority and limiting processes* – See Tables 2, 3, and 4 below. Table 2 provides information regarding the assumed primary limiting factors, as identified in Smith and Caldwell (2001) for this strategy's priority habitats and species. Table 3 provides a more detailed evaluation of limiting processes at the watershed scale, the importance of the process to the condition of the habitat and species within the watershed, key areas of interest and general restorative recommendations (Smith and Caldwell, 2001). Process priorities were developed by consensus of the WRIA 21 TRG, based upon their local knowledge of the watersheds, information contained in the limiting factors analysis for the WRIA, a variety of watershed analyses developed for individual basins in the watershed (QIN and USFS, 1999; QIN and USFS, 2002; QIN, 2002; USFS, 1995; USFS, USGS, USFWS, QIN, 1996; USFS, 1997), and other similar documents (e.g. USBR, Draft 2005). Table 4 was similarly developed, and provides comparable information to Table 3, but focuses on the effect to estuarine and nearshore habitat.
- *Breadth of Effect* – Projects that will restore salmon populations and habitat productivity at large-scale, watershed, or ecosystem levels will be rated higher than projects that will restore production on a smaller, more limited scale. Projects that restore natural habitat forming physical and biological processes over a large part of a watershed will be rated higher than projects that only affect natural processes at specific locations. Restoration projects that will benefit salmon populations that were historically important in a watershed and are currently restricted or declining in abundance will be rated higher than projects that will benefit more widespread, stable salmon populations.

- *Certainty of Success* – Projects that have a low level of risk will be rated higher than projects that have a large or unknown level of risk. Risk in this context will include issues of scientific credibility, proven reliability, and the quantity or quality of assets at risk. A project based on sound scientific theory employing proven methods will be rated higher than projects based on untested theory or method. However, projects with a high risk of failure but a large potential benefit might be rated higher if the assets at risk are small.
- *Response Time* – Projects that will have an immediate or near-term beneficial effect on habitat capacity or salmon population trends will be rated higher than projects that will require repeated, long-term application of restoration methods, or that involve slower recovery processes with delayed benefits. In some instances when complex approaches are required for longer term recovery of a particular stock or watershed area, a portfolio of projects can be constructed. This portfolio can identify a cluster of projects and treatments needed to achieve the longer term recovery goals, but that have near-term measurable responses.
- *Measuring Success* – Projects that are designed to cause salmon stock or habitat capacity responses that are easily monitored and measured for evaluation will be rated higher than projects that affect populations or processes in ways that are difficult to monitor, measure and evaluate. Metrics of success that have been discussed include projects that target priority species and watersheds, successful project implementation, community support, and trends in number and diversity of sponsors and projects. Development of technically-based metrics to quantify the amount of habitat recovery that was expected or achieved, and to estimate associated salmonid use or production increases is a goal and of interest to the TRG.

Additional, secondary factors that can be addressed during project prioritization include the following subjects:

- *Stocks of Concern* – The TRG will consider assigning some priority to projects that benefit unique salmonid stocks, stocks in decline, or ESA-listed species. The TRG will consider this potential species prioritization at initial project identification and technical review steps, on a case-by-case basis.
- *Assessments and data gaps* - Available information on factors influencing biological productivity varies between watersheds in WRIA 21. Assessment projects will be considered if they address data gaps. Data gaps may be identified from watershed analyses and assessments, and by basin experts. Assessments will be given a higher priority if results will inform project development and provide a determination of probability of success for future projects. The Committee recognizes that more information, as it becomes available, may influence priorities for restoration actions.
- *Other socioeconomic and cultural factors* - The Committee recognizes that acceptable rationales for proposing and assigning additional weight to lower-priority projects can include species with high cultural significance, high levels of community support, other strong needs or benefits, and a buy-in to the overall habitat restoration strategy by a more diverse array of stakeholders.

**Table 2. Summary of priority stock, watershed, limiting processes, and habitat priorities**

<b>Species/stocks of priority</b>	<b>Watershed/priority</b>	<b>Limiting process</b>	<b>Habitat priority</b>
Queets Chinook	Queets/High	Sediment delivery, transport, invasive plant species, and storage	Spawning habitat
Queets Coho	Queets/High	Habitat connectivity  Sediment delivery, transport, invasive plant species, and storage	Off-channel rearing habitat  Spawning habitat
Quinault Sockeye	Quinault/High	Sediment delivery, transport, invasive plant species, and storage  Biological processes	Spawning habitat above Lake Quinault  Lake Quinault productivity
Quinault Chinook	Quinault/High	Sediment delivery, transport, invasive plant species, and storage	Spawning habitat
Quinault Coho	Quinault/High	Habitat connectivity  Sediment delivery, transport, invasive plant species, and storage	Off-channel rearing habitat  Spawning habitat

Table 2 is intended to be used to help guide project applicants towards the types of projects which are envisioned to have a high importance within the strategy. For example, Queets Chinook are a high priority species within a high priority watershed. Sediment Delivery, Transport, and Storage has been the primary process identified to be limiting the Chinook in the Queets watershed. Invasive plant species may also play an important role in habitat limitation. Projects designed to improve those conditions which restore a more natural sediment regime, resulting in improved spawning habitat for Chinook would be valued highly within the strategy. For specific actions, the applicant should refer to Table 3 or the limiting factors analysis.

**Table 3. Summary of riverine limiting factors and restoration actions for WRIA 21.**

<u>Watershed</u>	<u>Physical Riverine Process/ Priority</u>	<u>Limiting Factor<sup>1</sup></u>	<u>Key Areas Affected</u>	<u>Key Stocks Affected</u>	<u>Recovery action</u>
<u>Quinault</u>	Habitat Connectivity  High Priority	Barrier Culverts, loss of access to side-channel and off-channel rearing habitat, other manmade barriers	Higley Creek, Slide Creek, McCormick Creek, July Creek, Gatton Creek, Cook Creek, McCalla Creek	Quinault Chinook, Quinault Sockeye, Quinault Coho, native char	Inventory and repair barrier culverts, restore access to off-channel habitat, remove manmade barriers, provide for downstream passage of LWD
	Flood Plain/ Hydrologic Processes  Medium Priority	Channel Constrictions, bank armoring, undersized culverts, dredging, loss of wetlands	Quinault River mainstem, Finley Creek, Kestner Creek, Lake Quinault	Quinault Chinook, Quinault Sockeye, Quinault Coho, native char	Remove or modify channel constrictions, remove or modify bank armoring, restore hydrologic function to wetlands, consider alternative alignments of roads.
	Sediment Delivery, Transport, Noxious weed species, and Storage  High Priority	Accelerated bank erosion, aggradation, restriction of flow and fish access, riparian shading increased turbidity, loss of LWD	Quinault River main stem, Graves Creek, Finley Creek, Canoe Creek, Kestner Creek, Lower Quinault River tributaries	Quinault Chinook, Quinault Sockeye, Quinault Coho, native char	Remove channel constrictions which may accelerate bank erosion, maintain or remove mid-slope roads with large fill, maintain roads to minimize fine sediment input, limit removal of LWD and replace LWD to alleviate sediment issues. . Inventory and apply control measures to noxious weed species.
	Riparian Function  Medium Priority	Loss of coniferous riparian buffer, reduced LWD recruitment, reduced shading	Quinault River main stem and tributaries below NPS bridge near North Fork Quinault	Quinault Chinook, Quinault Sockeye, Quinault Coho, native char	Replant riparian habitat with conifers and/or manage for conifer succession, acquire property or conservation easements to protect important mid- to late-seral riparian stands adhere to applicable regulations regarding timber harvest and development in riparian areas, decrease and

<sup>1</sup> Please refer to the WRIA 21 Limiting Factors Analysis (Smith and Caldwell, 2001) for detailed information on limiting factors and processes, as well as detailed information on restorative actions recommended.

				prevent introduction of non-native plant species.	
Water Quality Low Priority	Increased Temperatures	Quinault River below NPS bridge, Falls Creek, Cook Creek, Chow Creek, Boulder Creek, Ten O'clock Creek	Quinault Chinook, Quinault Sockeye, Quinault Coho, native char	Replant riparian habitat with conifers, adhere to applicable regulations regarding timber harvest and development in riparian areas, achieve shading goals	
Water Quantity Low Priority	Increased peak flow events and reduced low flow events associated with upland timber harvest	Quinault watershed downstream of Lake Quinault	Quinault Chinook, Quinault Sockeye, Quinault Coho, native char	Maintain hydrologic maturity, decrease artificial drainage (roads)	
Biological Processes High Priority	Nutrient cycling, primary production	Lake Quinault, Quinault watershed	Quinault Chinook, Quinault Sockeye, Quinault Coho, native char	Develop a habitat restoration strategy for Lake Quinault, assess nutrient loading and relation to salmon production, evaluate stream productivity (B-IBI)	
<u>Queets</u>	Habitat Connectivity High Priority	Barrier Culverts, loss of access to side-channel and off-channel rearing habitat, debris torrents	Queets, Clearwater River, Salmon River, Sams River, Matheny Creek	Queets Chinook, Queets Coho, native char	Repair barrier culverts, Inventory culverts in basin, particularly Clearwater basin, restore access to off-channel habitat, remove manmade barriers, provide for downstream passage of LWD, Inventory and remove spaults from streams and floodplains.

Flood Plain/ Hydrologic Processes  Medium Priority	Channel Constrictions, bank armoring, undersized culverts, loss of wetlands	Queets, Clearwater River, Salmon River, Sams River, Matheny Creek	Queets Chinook, Queets Coho, native char	Remove or modify channel constrictions, remove or modify bank armoring, restore hydrologic function to wetlands, consider alternative alignments of roads, maintain natural conditions in the delineated geologic floodplain for the Salmon and Queets Rivers, protect floodplain habitat in other streams, maintain functional off-channel habitat.
Sediment Delivery, Transport, noxious weed species, and Storage  High Priority	Accelerated bank erosion, aggradation, increased turbidity, restriction of flow and fish access, loss of LWD	Queets, Clearwater River, Salmon River, Sams River, Matheny Creek, other lower river basin tributaries	Queets Chinook, Queets Coho, native char	Remove channel constrictions which may accelerate bank erosion, maintain or remove mid- slope roads with large fill, maintain roads to minimize fine sediment input, limit removal of LWD and replace LWD to alleviate sediment issues and increase channel complexity. Inventory and apply control measures to noxious weed species.
Riparian Function  Medium Priority	Loss of coniferous riparian buffer, reduced LWD recruitment, reduced shading	Queets, Clearwater River, Salmon River, Sams River, Matheny Creek, other lower river basin tributaries	Queets Chinook, Queets Coho, native char	Replant riparian habitat with conifers and/or manage for conifer succession, acquire property or conservation easements to protect important mid- to late- seral riparian stands adhere to applicable regulations regarding timber harvest and development in riparian areas, decrease and prevent introduction of non-native plant species.
<u>Water Quality</u>  Medium Priority	<u>Increased Temperatures</u>	Queets, Clearwater River, Salmon River, Sams River, Matheny Creek, other	Queets Chinook, Queets Coho, native char	Replant riparian habitat with conifers, adhere to applicable regulations regarding timber harvest and development in riparian areas, achieve

			lower river basin tributaries		shading goals, reassess water temperature in Clearwater and Lower Queets basins, develop nomograph from existing data.
	<u>Water Quantity</u> Low Priority	<u>Increased peak flow events and reduced low flow events associated with upland timber harvest</u>	Queets, Clearwater River, Salmon River, Sams River, Matheny Creek, other lower river basin tributaries	Queets Chinook, Queets Coho, native char	Maintain hydrologic maturity, decrease artificial drainage (roads)
	<u>Biological Processes</u> High Priority	<u>Nutrient cycling, primary production</u>	Queets, Clearwater River, Salmon River, Sams River, Matheny Creek, other lower river basin tributaries	Queets Chinook, Queets Coho, native char	Assess nutrient loading and relation to salmon production, evaluate stream productivity (B-IBI)
<u>Other Basins</u>	<u>Habitat Connectivity</u> High Priority	<u>Barrier Culverts, loss of access to side-channel and off-channel rearing habitat, debris torrents</u>	Kalaloch Creek, Raft River, Moclips River, Joe Creek, Copalis River, and other small watersheds	Coho, steelhead, cutthroat, native char	Inventory and repair barrier culverts, restore access to off-channel habitat, remove manmade barriers, provide for downstream passage of LWD
	<u>Flood Plain/ Hydrologic Processes</u> Medium Priority	<u>Channel Constrictions, bank armoring, undersized culverts, loss of wetlands</u>	Kalaloch Creek, Raft River, Moclips River, Joe Creek, Copalis River, and other small watersheds	Coho, steelhead, cutthroat, native char	Remove or modify channel constrictions, remove or modify bank armoring, restore hydrologic function to wetlands, consider alternative alignments of roads, maintain and protect natural floodplains and restore disconnected off-channel habitat.

	<u>Sediment Delivery, Transport, and Storage</u> High Priority	<u>Accelerated bank erosion, aggradation, increased turbidity, loss of LWD</u>	Kalaloch Creek, Raft River, Moclips River, Joe Creek, Copalis River, and other small watersheds	Coho, steelhead, cutthroat, native char	Remove channel constrictions which may accelerate bank erosion, maintain or remove mid-slope roads with large fill, maintain roads to minimize fine sediment input, limit removal of LWD and replace LWD to alleviate sediment issues and increase channel complexity.
	<u>Riparian Function</u> Medium Priority	<u>Loss of coniferous riparian buffer, reduced LWD recruitment, reduced shading</u>	Kalaloch Creek, Raft River, Moclips River, Joe Creek, Copalis River, and other small watersheds	Coho, steelhead, cutthroat, native char	Replant riparian habitat with conifers and/or manage for conifer succession, acquire property or conservation easements to protect important mid- to late-seral riparian stands adhere to applicable regulations regarding timber harvest and development in riparian areas, decrease and prevent introduction of non-native plant species.
	<u>Water Quality</u> Medium Priority	<u>Increased Temperatures</u>	Kalaloch Creek, Raft River, Moclips River, Joe Creek, Copalis River, and other small watersheds	Coho, steelhead, cutthroat, native char	Replant riparian habitat with conifers, adhere to applicable regulations regarding timber harvest and development in riparian areas, achieve shading goals, assess water quality conditions and causes for water quality exceedences.
	<u>Water Quantity</u> Low Priority	<u>Increased peak flow events and reduced low flow events associated with upland timber harvest</u>	Kalaloch Creek, Raft River, Moclips River, Joe Creek, Copalis River, and other small watersheds	Coho, steelhead, cutthroat, native char	Maintain hydrologic maturity, decrease artificial drainage (roads)
	<u>Biological Processes</u> Medium Priority	<u>Nutrient cycling, primary production</u>	Kalaloch Creek, Raft River, Moclips River, Joe Creek, Copalis River, and other small	Coho, steelhead, cutthroat, native char	Assess nutrient loading and relation to salmon production, evaluate stream productivity (B-IBI)

			watersheds		
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**Table 4. Summary of near shore restoration actions for WRIA 21.**

<u>Area</u>	<u>Limited Physical near shore forming Process</u>	<u>Near shore habitat process/function limited</u>	<u>Stock Affected</u>	<u>Recovery action</u>	<u>Watershed Priority (from Section 5)</u>	<u>Process Priority within near shore framework</u>
<u>Queets</u>	LWD, hydrologic processes	Estuarine habitat use for forage, rearing, spawning	All	Evaluate strategies to promote LWD and reduce unnecessary armoring along lower rivers	High	High
<u>Quinault</u>	LWD, hydrologic processes	Estuarine habitat use for forage, rearing, spawning		Evaluate strategies to promote LWD and reduce unnecessary armoring along lower rivers	High	High
<u>River estuaries</u>	Unknown	Unknown	All	Assessment Define fish use Including forage fish spawning and salmonid migration	Medium	High
<u>Raft River</u>	Hydrologic processes, riparian corridor, LWD	Possibly fish passage; Estuary rearing feeding habitat use lost due to fill and possibly blocked access	All	Remove fill structure, restore estuary connection	Medium	High
<u>Copalis River</u>	None	None	All	Acquisition to protect intact high quality habitat	Medium	High
<u>Moclips River</u>	Hydrologic processes, riparian	Estuarine rearing habitat	All	Pull back road, rock, restore riparian corridor	Medium	Medium

<u>Joe Creek</u>	Sediment and hydrologic processes	Estuarine habitat use for forage and rearing, riparian	All	Remove shoreline armoring, restore riparian and LWD	Low	Low
<u>Kalaloch Creek</u>	Water quality, riparian function, hydrologic process	Estuarine habitat use for forage rearing, and spawning,	All	Reduce storm water input to lower river from development, restore riparian corridor along south side of lower river.	Low	Medium

## 7.0 Community Issues.

WRIA 21 is a sparsely populated area, with land ownership dominated by the Quinault Indian Nation, the Olympic National Park, Olympic National Forest, Washington Department of Natural Resources, and large private timber companies. There are no incorporated cities within the WRIA, although there are several small communities (Taholah, Quinault, Amanda Park, Queets, Clearwater, Kalaloch, etc.). Neighboring communities, like Aberdeen, Hoquiam, Forks and elsewhere likely have an interest in salmon recovery activities within WRIA 21, but are not actively involved on a day-to-day basis.

Beyond the commercial timber industry, businesses tend to be limited to those associated with the diverse recreational opportunities available in the area, such as sport fishing, boating, hiking, hunting, camping, etc. An economic development council has been formed in the Lake Quinault area which is exploring options to increase the economic viability of the area.

Community outreach is an integral part of the annual planning process. An assessment of community issues is an ongoing process. The following items have been identified as being of importance to the local community, based upon the limited participation received to date as well as community outreach for other forums:

- Maintain or increase viable fishing opportunities
- Minimize or have no negative effects on the Quinault Indian Nation, commercial timber operations, Olympic National Park, Olympic National Forest, Department of Natural Resources, or private land owners.

- When applicable, look for projects which are consistent with needs of the Quinault Indian Nation, commercial timber operations, Olympic National Park, Olympic National Forest, Department of Natural Resources, or private land owners.
- Maintain or increase economic development opportunities consistent with the scenic nature of WRIA 21.
- Maintain or increase other recreational opportunities.

Appendix 1 describes the process which will be utilized to rank projects and secure annual participation from the local community in evaluating project proposals. That time will also be utilized each year to continue to scope issues of importance to the community which should be considered when project proponents are developing future project proposals.

## **8.0 Operating Procedures.**

Appendix 1 contains the operation instructions for the Lead Entity salmon habitat recovery to properly function.

## **9.0 Selected Information Sources**

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(Upper Quinault River Plan – citation)

(Lestelle – Coho and Chinook reports for Queets/Clearwater)

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Roni, P., T.J. Beechie, R.E. Bilby, F.E. Leonetti, M.M. Pollock, and G.R. Pess. 2002. A review of stream restoration techniques and a hierarchical strategy for prioritizing restoration in Pacific Northwest watersheds. *North American Journal of Fisheries Management* 22:1-20.

Smith, C. and J.E. Caldwell. 2001. Salmon habitat limiting factors: Water Resource Inventory Area 21. Washington Conservation Commission. Olympia, WA.

USBR. 2005. Draft Geomorphic Investigation of Quinault River, Washington. April 2005.

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- U.S. Forest Service. 1995. Matheny Creek watershed analysis. Quinault Ranger District, Olympic National Forest. Quinault, WA.
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- Washington Department of Fish and Wildlife and Western Washington Treaty Indian Tribes. 1993. 1992 Washington State salmon and steelhead stock inventory. Olympia, Washington. 211 pp.
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## Appendix 1

### Operating Procedures For WRIA 21 Salmon Habitat Recovery Activities

#### 1. Purpose.

##### a. Citizen/Community Review.

- WRIA 21 is a rural, sparsely populated area. A formally organized, voting committee of citizens, similar to organizations extant in more urban, metropolitan areas, or in areas with well organized interest groups, would be very difficult to constitute.
- It is recognized that citizens and their interests must be considered in any salmon recovery process such as this. It is essential for any proposed project list under SRFB rules to receive community comment and input.
- A process of involving local community interests in the salmon recovery program is hereby adopted, whereby at least one town meeting per SRFB round will be held, and community input obtained. Based upon their comments, the TRG will modify the project list rankings if appropriate.
- Citizens will be invited from:
  - Lake Quinault
  - Taholah
  - Queets
  - Clearwater
  - Moclips
  - Pacific Beach
  - Copalis
- A list of people invited by letter, plus a copy of the 2005 letter, are at Tabs B and C to this appendix.
- Upon completion of the ranking, TRG will make their presentation to the community members at the town meeting and invite their comments. Comments and issues identified by citizens at the town meeting will be either:
  - Included in the ranking, with subsequent language added to change the order of rank, or
  - to strengthen project language, or
  - Will be captured in the strategy for inclusion as issues in future rounds.

- ##### b. **Lead Entity Coordinator (LEC)**
- The Lead Entity Coordinator will coordinate SRFB activities occurring within WRIA 21. This task will include communication with the SRFB and its staff, the Technical Review Group, the Lead Entity (Quinault Indian Nation), project sponsors, community members, and resource managers within the watershed. LEC shall also prepare and distribute summary notes of each meeting. Information copies will be sent to TRG and community members, the Director, Quinault Department of Natural Resources, SRFB

contract manager, and the WDFW Salmon Recovery Office Program Manager. Periodically, the LEC will contact local clubs, organizations, and individuals, to update them on the SRFB process, current work being done, and plans for future work.

Meetings. Meeting location will usually be in the Lake Quinault area, the most central to the area. A room will be coordinated by the LEC. A community meeting will be held after the TRG has finalized its ranked project list, and at least two weeks prior to submission of the list to the SRFB. Notice of meetings and events will be issued to interested members of the public, TRG members, and project sponsors. The LEC will be responsible for the notification.

## 2. Technical Review Group (TRG)

The TRG will consist of technical representatives of the resource managers within WRIA 21. The TRG will assist with technical advice and suggestions, including project-to-strategy compatibility, depending on time availability. Members include representatives from:

- Quinault Indian Nation Fisheries and Forestry Departments. **(One member of each of these two departments will be a voting member)**
- Olympic National Park. **(One voting member)**
- Olympic National Forest. **(One voting member)**
- Washington Department Fish and Wildlife (WDFW). WDFW shall designate a Watershed Steward and a Habitat and/or Fish Biologist to serve on the TRG. **(Two voting members, one from each division, respectively)**
- Washington Department of Natural Resources (WADNR). Olympic Region, Forks. **(one voting member)**
- Pacific Coast Salmon Coalition (RFEG).
- US Fish and Wildlife Service.
- Others as appropriate.

## 3. Project Proposal and Ranking Process

The TRG will, using prioritized criteria included in this strategy, meet during each SRFB round to rank projects submitted to the Lead Entity. The process will employ the best scientific knowledge of the members engaged in the ranking. Each member will vote based upon his/her best analysis of the project(s) that provide the best benefits to salmon and the best certainty of success, while being cost effective. **Project sponsors, where they are voting members, may not vote for their own project(s).** A sample evaluation sheet and sample score sheet are attached at Tab A to this appendix. The Lead Entity Coordinator will not vote, but will serve as facilitator. The TRG will develop a process for pre-proposal documentation, site visits and final proposal development. The intent of this phase is to allow adequate time for necessary discussions, identify problems and solutions, and provide input and feedback to project sponsors prior to development of final SRFB proposals.

The TRG will develop a ranking tool and use it to evaluate projects (Tab A, App. 1). Factors considered include: anticipated benefit to salmon, the certainty that the project will be successful in providing those benefits, fit of the project to our strategy, the funding amount requested relative to the anticipated benefits, and other socioeconomic and political factors. The intent of this phase is to bring forward to the SRFB only those proposed projects with:

- strong technical merit
- good fit to our strategy
- consideration of community concerns (as expressed in local town meetings, and other forums)
- positive community support.

The TRG may include explanations to support their ranking.

After each member has evaluated all projects and assigned a rank placing to them, the LEC will collect the sheets and compile a total score for each project based upon all members' respective ranking (Tab B, App. 1). An average score for each project will then be computed. These averages will be used to assign final ranking to each project, with the lowest number representing the #1 project, next lowest number #2, etc. The final list will then be presented to the community at the town meeting.

Within a reasonable period following the town meeting, the LEC will again send letters and post bulletin boards relating the results of the ranking process.

#### **4. Project proposal schedule.**

Project proposal schedules will be developed early in each funding round. Upon SRFB publication of the time line, the LEC, in conjunction with TRG, will establish a WRIA 21 time line that contains:

- a. A preliminary list of potential projects. Site visits are done at least five months prior to submittal of the final project list to the SRFB.
- b. Pre-proposals will be scheduled and submitted to TRG prior to submittal of the final project list and TRG will provide comments to project sponsors.
- c. Final applications due to Lead Entity: two to three months prior to submittal of the final project list.
- d. Community review of ranked projects (see 1a above): prior to submittal of the final project list to the Lead Entity.
- e. Project list goes to Quinault Business Committee (the Lead Entity) for approval.
- f. Submittal date to state PRISM database: As announced by the SRFB.
- g. Funding awards: approximately six months after submittal. The SRFB Review Panel and Technical Assistance Team phases occur during this time, in which the LEC, in coordination with project sponsors and other committee members, comments/testifies on each project submitted. Corrections, if recommended

through this process, will be considered for adoption. Changes in project descriptions or withdrawal may occur as a result.

## **5. Lead Entity/Lead Entity Coordinator Responsibilities**

- a. The Lead Entity will assign a lead entity coordinator (LEC) to support the work of the TRG and sponsors. The Quinault Indian Nation will manage lead entity operational funds received from WDFW to support the lead entity process in accordance with their contract with the WDFW.
- b. The LEC will serve as the primary point of contact with SRFB, IAC, and WDFW for the salmon recovery project ranking process in WRIA 21. The LEC will be responsible for managing communication and information exchange among the TRG, project sponsors, and the state. The LEC will coordinate community outreach and education activities associated with this program.
- c. The LEC will handle the appropriate administrative duties including, but not limited to: scheduling meetings, providing notice of meetings, and preparing minutes from meetings. The LEC will support project sponsors by advertising the availability of applications for funding, providing guidance on completing the application, accepting and documenting the completed applications, and informing them about any deadlines for ranking.
- d. The LEC will notify sponsors and other interested parties about meetings of the respective review groups and the submittal of the ranked list, so that they are aware of any meetings or deadlines in the decision-making process. The LEC will prepare the project submittal package, in compliance with SRFB guidelines, for entry into the state PRISM system.
- e. The lead entity coordinator will prepare presentations to the SRFB and the Review Panel and Technical advisors describing the proposed projects and explaining the ranking process. Documents submitted to the SRFB will express the opinions of the Lead Entity and its committees.
- f. The LEC will track progress on project implementation by creating and maintaining a habitat work schedule. The lead entity coordinator will respond to any requests from the SRFB staff or panels for letters of support or other information. The LEC, with the support and assistance of the committees (review groups) will recruit and encourage local sponsors.
- g. In the year 2005, the LEC will attempt to build and maintain a WRIA 21 Salmon Recovery web page. This effort will be coordinated with the QIN webmaster.

## **6. Project Sponsor Responsibilities**

Project sponsors will submit complete and accurate project proposals within the time frame allotted by the LEC.

Project sponsors will be available to answer questions by the TRG, community members at a scheduled meeting, and SRFB review groups regarding their proposed projects.

Once funding is awarded, project sponsors are required to obtain all applicable permits prior to initiating their projects and will remain in compliance with SRFB Manual 18, its appropriate submanuals, and applicable regulations during the implementation of their project.

Project sponsors will contract directly with the Interagency Committee for Outdoor Recreation (IAC) for project funding. Sponsors are expected to remain in compliance with their contracts.

Establishing and maintaining good relationships with landowners will be high priority for project sponsors. Sponsors are required to negotiate appropriate landowner agreements prior to the start of any project.

**Tab A to Appendix 1. Sample Evaluation Sheet and Sample score sheet**

*(Note: this tool is compressed to save space. The actual tool provides adequate writing room.)*

Reviewer Code: \_\_\_\_\_ Reviewer's Project Rank \_\_\_\_\_ of \_\_\_\_\_  
 Round (if more than one needed) \_\_\_\_\_

Project Title: _____	Applicant: _____
Watershed: _____	Project Cost: _____
Site: _____	Target Specie(s): _____
Watershed Priority (High, Medium, Low):	
Species Priority (High, Medium, Low):	
Does the project address priority process for its watershed (See Tables 2, 3, and 4 of Strategy)? Briefly explain.	
Does the project address priority habitat for this watershed and stock (See Tables 2, 3, and 4 of Strategy)? Other Stocks of Concern? Briefly explain	
Does the project address priority limiting factor identified in watershed and for this stock? Briefly explain.	
Breadth of effect (High, Medium, Low). Briefly explain:	
Certainty of Success (High, Medium, Low). Briefly explain:	
Response Time (Rapid, Moderate, Slow). Briefly explain:	
Measuring Success (High, Medium, Low). Briefly explain:	
If the project is an assessment project, does it address a data gap identified in the strategy, limiting factors analysis, or specific watershed analysis? Briefly explain:	
If the project is an assessment project, does it lead directly to an identified project? Briefly explain:	
Does the project address, or is it in conflict with, an issue of documented community interest?	
Other Comments:	

**Tab B To appendix 1. 2006 Community Review Group**

Guy Capoeman, Vice President, QIN  
 Gina James, Secretary, QIN  
 James DeLaCruz, Councilman  
 Richard Underwood, Councilman  
 Jim Campbell, Tribal Member  
 Alan Ebling, Tribal Member  
 Pauline Capoeman, Tribal Member and Deputy Director, QDNR  
 Commissioner Al Carter, Grays Harbor County

**Tab C to Appendix 1. Technical Review Group Members.**

Name	Basic job	Email	Phone	Organization
John Sims	Lead Entity Coordinator	jsims@centurytel.net	360-288-2435	Quinault Indian Nation
▪ Rich McConnell	Fisheries biologist	rmcconnell@fs.fed.us	360-288-0231	USFS
▪ Pat Crain	Fisheries Biologist	patrick_crain@nps.gov	360-565-3075	Olympic National Park
▪ Greg Masten	Chief Forester	gmasten@quinault.org	360-276-8215 ext 381	QIN
▪ Eric Carlsen	Forest Engineer	eric.carlsen@wadnr.gov	360-374-2828	DNR Olympic Region
▪ Anne Shaffer	Watershed steward	shaffjas@dfw.wa.gov	360-457-2634	WDFW
▪ Dave King	Habitat biologist	kingddk@dfw.wa.gov	360-902-2554	WDFW/Region 6 Tech assistance
▪ Bill Armstrong	Fisheries Biologist	barmstro@quinault.org	360-276-8215 ext 240	QIN
Dr. Larry Gilbertson	Chief Fisheries Scientist	lgilbe@quinault.org	360-276-8215 ext 261	QIN
Bill Edwards	Hatchery Manager	bill_edwards@fws.gov	360-288-2508	USF&WS
Bob Metzger	Aquatics Program Manager	rpmetzger@fs.fed.us	360-956-2293	USFS Olympic National Forest
Bruce Jones	Natural Resources Director	bjones@quinault.org	360-276-8215 ext 374	QIN
Carl Chastain	RFEG Exec. Dir.	pacsac@olypen.com	360-374-8873	Pacific Salmon Coalition/Forks
Carri Gaines	Liaison Officer to QIN	carri.gaines@wa.usda.gov	360-276-8215 ext 476	NRCS
Clyde Dietz	Hydraulics Officer	cdietz@quinault.org	360-276-8215 ext 375	QIN
Dave Zajac	Staff Fisheries Biologist	Dave_zajac@fws.gov	753-9547	USF&WS
Jean Caldwell	Fisheries Biologist	jeanc@aol.com	360-943-4859	Consultant
Mark Mobbs	Environmental Protection Manager	mmobbs@quinault.org	360-276-8215 ext 292	QIN
Mike Maki	Forester	agrofor@localaccess.com	360-866-8387	Resident, Quinault R.
Mike Stamon	Special Projects Forester	mstamon@quinault.org	360-276-8215 ext 527	QIN

▪ Denotes voting member for the project technical ranking process. Others on this list have interest as project sponsors, supervisors of voting members, etc.

**Tab D to Appendix 1. Sample<sup>2</sup> score sheet used by TRG in ranking projects.**

TRG Project Ranking

<sup>2</sup> Project names and scorer identities have been protected, but are on file with the Lead Entity Coordinator..

Project	Scorer Code							Total	Avg <sup>3</sup>	Final rank
	001	002	003	004	005	006	007			
(Project name)	2	na	1	1	2	na	1	7	1.4	<b>1</b>
(Project name)	1	3	4	2	3	1	1	15	2.1	<b>2</b>
(Project name)	na	2	5	4	1	2	4	18	3.0	<b>3</b>
(Project name)	3	4	2	3	4	3	na	19	3.2	<b>4</b>
(Project name)	4	1	3	5	5	4	3	25	3.6	<b>5</b>

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<sup>3</sup> Adjusted for members who are excluded by rule from voting for their own project.

## Appendix 2. WRIA 21 Salmon Habitat Recovery Strategy

### Salmon stocks and status based on the WRIA 21

#### Limiting Factors Analysis (Smith and Caldwell 2001)

STOCK	ORIGIN <sup>1</sup>	LINEAGE <sup>2</sup>	STATUS	COMMENTS <sup>3</sup>
Kalaloch Fall Coho	Natural	Wild	Unknown	
Kalaloch Fall Chum	Unknown	Unknown	Unknown	Historically present
Kalaloch Winter Steelhead	Natural	Wild	Unknown	Small population
Kalaloch Coastal Cutthroat	Natural	Wild	Unknown	
Kalaloch Native Char	Natural	Wild	Unknown	ESA/ESU threatened
Queets Spring/Summer Chinook	Natural	Wild	Depressed	Limiting factors unknown
Queets Fall Chinook	Natural	Wild	Healthy	PST Indicator
Queets Fall Coho	Natural	Wild	Diminished <sup>4</sup>	PST Indicator
Queets Fall Coho	Hatchery	Composite	Healthy	Production stock
Queets Winter Steelhead	Natural	Wild	Healthy	
Queets Winter Steelhead	Hatchery	Composite	Healthy	Production stock
Queets Summer Steelhead	Natural	Wild	Unknown	
Queets Fall Chum	Unknown	Unknown	Unknown	Very small population
Queets Pink	Unknown	Unknown	Unknown	Might be strays
Queets Sockeye	Natural	Wild	Unknown	Very small population
Queets Coastal Cutthroat	Natural	Wild	Unknown	
Queets Native Char	Natural	Wild	Healthy	ESA/ESU threatened
Raft River Fall Coho	Natural	Composite	Unknown	
Raft River Winter Steelhead	Natural	Composite	Unknown	
Raft River Coastal Cutthroat	Natural	Wild	Unknown	
Raft River Native Char	Natural	Wild	Unknown	ESA/ESU threatened
Quinalt Spring/Summer Chinook	Natural	Wild	Diminished	Limiting factors unknown
Quinalt Spring Sockeye	Natural	Wild	Diminished	Current restoration strategy
Quinalt Summer Sockeye	Natural	Wild	Unknown	Very small population
Quinalt Fall Chinook	Integrated	Composite	Healthy	
Quinalt Fall Coho	Natural	Composite	Diminished	
Quinalt Fall Coho	Hatchery	Composite	Healthy	
Quinalt Fall Chum	Natural	Composite	Diminished	Limiting factors unknown
Quinalt Fall Chum	Hatchery	Composite	Diminished	
Quinalt Winter Steelhead	Integrated	Composite	Healthy	
Quinalt Summer Steelhead	Natural	Wild	Unknown	
Quinalt Pink	Unknown	Unknown	Unknown	Might be strays
Quinalt Coastal Cutthroat	Natural	Wild	Healthy	
Quinalt Native Char	Natural	Wild	Healthy	ESA/ESU threatened
Moclips Fall Coho	Natural	Composite	Healthy	
Moclips Winter Steelhead	Natural	Composite	Healthy	
Moclips Coastal Cutthroat	Natural	Wild	Unknown	
Moclips Native Char	Natural	Wild	Unknown	ESA/ESU threatened
Copalis Fall Coho	Natural	Wild	Unknown	
Copalis Winter Steelhead	Natural	Wild	Unknown	
Copalis Coastal Cutthroat	Natural	Wild	Unknown	
Copalis Native Char	Natural	Wild	Unknown	ESA/ESU threatened

Minor Streams Fall Coho	Natural	Wild	Unknown	
Minor Streams Winter Steelhead	Natural	Wild	Unknown	
Minor Streams Coastal Cutthroat	Natural	Wild	Unknown	
Minor Streams Native Char	Natural	Wild	Unknown	ESA/ESU threatened

1. **Origin** refers to the proximate source of annual runs; are they from natural or hatchery production.
2. **Lineage** refers to the known history of genetic sources to the population; composite means the population is derived from both wild and hatchery sources.
3. **Comments** are current; not based on Smith and Caldwell 2001.
4. **Diminished stocks** are healthy but populations are significantly less than historic levels.