

**USDA Forest Service Watershed Condition Framework**

**FY2012 TRANSITION WATERSHED RESTORATION ACTION PLAN**

**Pacific Northwest Region**

**Olympic National Forest, Hood Canal Ranger District**

**Lower South Fork Skokomish River**



## 1. Summary

- a. **Watershed Name and HUC:** Lower South Fork Skokomish River, 171100170102
- b. **General Location:** The Lower South Fork Skokomish watershed is located in the southeast corner of the Olympic Peninsula, approximately 25 miles northwest of Shelton, Washington. The majority of the watershed lies within the Hood Canal Ranger District, on the Olympic National Forest.
- c. **Total Watershed Area:** 27,700 acres **NFS area within watershed:** 58% (16,158 acres)

### d. **Watershed Characterization:**

**General Physiography:** The watershed is characterized as a steep mountainous terrain, highly dissected by a riverine system, and covered predominantly by a mixed age coniferous forest. Dominant landforms in the headwater tributaries, including Vance and Rock creeks, are steep basalt hills. Landforms in the upper portion of the watershed are more common of landscapes once occupied by continental glaciers. This landform has relatively thick deposits of till and outwash forming smooth mountain side slopes and ridges. Glacial deposition and erosional features such as eskers and kettles are present. The upper mainstem channel occupies a relatively broad, low gradient portion of the main glacial valley between Brown Creek at its upper extent to the mouth of a canyon just downstream of Holman Flat. The South Fork Skokomish then transects through a steep bedrock canyon before opening into the broad lower river valley.

This watershed covers the lower area of the South Fork Skokomish River. Major tributaries to the mainstem within the Lower South Fork Skokomish include Vance Creek and Rock Creek. The Lower and Upper South Fork Skokomish 6<sup>th</sup> field watersheds combine to form the South Fork Skokomish. The South Fork and North Fork are the two major tributaries to the Skokomish River. The Skokomish River drains into the southern end of Hood Canal, a basin of the Puget Sound. The Skokomish River is the largest freshwater tributary to, and has the biggest estuary in, Hood Canal. The Puget Sound empties into the Pacific Ocean.

**Land Use:** The 1990 Olympic National Forest Land and Resource Management Plan (LRMP), and its amendments, including the 1994 Record of Decision (ROD) for Amendments to the Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl, provide broad management direction for the Lower South Fork Skokomish. The 1994 ROD designated new land allocations and replaced some standards and guidelines in the 1990 LRMP. Where the 1990 LRMP is more restrictive or provided greater benefits to late-successional forest species, the 1990 standards and guidelines remain in place. For this document, the 1990 LRMP as amended by the 1994 ROD is referred to as the Forest Plan.

Land allocations on National Forest System (NFS) lands within the Lower South Fork designated by the 1994 ROD include 5,790 acres Late-Successional Reserve (LSR) and 10,368 acres Adaptive Management Area (AMA), overlain with 9,436 acres of Riparian Reserves. In addition to the standards and guidelines that apply to these allocations, the following management area prescriptions from the 1990 LRMP are relevant to the watershed: A2-Scenic; A3-Developed Recreation and Administration; A4BG-General Level River Corridor; A4BM-Minimum Level River Corridor; AL-Private Land within Forest Boundary, and; and E1-Timber Management.

Primary land use on NFS lands is vegetation management and recreation. Vegetation management is primarily within the AMAs and LSRs and is focused on commercial and pre-commercial thinning. Thinning treatments are designed to promote terrestrial habitat diversity and accelerate late-successional forest characteristics. Primary use on private lands also includes timber management. Use in the lowermost part of the watershed includes agriculture and residential housing.

Other uses within the watershed include recreation, hunting, and Tribal activities associated with use as their Usual and Accustomed (U&A) area. Recreation use includes activities such as camping, mountain biking, fishing, and berry picking. Hunting for grouse, deer, and bear is common. Tribal U&A activities include hunting, berry picking, and harvesting of plants that support tribal customs.

**General Overview of Concerns:** Past timber harvest activities associated with commercial timber production from the 1920s to early 1990s, was the dominant land use within the South Fork Skokomish River. Between the late 1940s and 2002, parts of the watershed area were included in the Shelton Multiple Use Sustained Yield unit. As a result of these historic timber harvest activities which included clear cutting, broad cast burns, and road construction, the South Fork Skokomish watershed was one of the most intensively harvested watersheds in Washington State. By the mid-1990s, approximately 60 percent of the NFS land area within the South Fork Skokomish had been clearcut and the overall road density was over 3.6 miles per square mile.

Extensive timber harvest and road construction in decades leading up to the 1990s, inherent watershed conditions such as steep, unstable terrain being subjected to high rainfall or rain-on-snow events, insufficient funds to maintain the road system during the last two decades, and an aging road infrastructure, have culminated in substantial degradation of aquatic and terrestrial habitats and species within the watershed. These conditions have led to increased frequency and magnitude of surface erosion and mass wasting incidents. Watershed analysis conducted in 1995 determined that ninety percent of the 2,500 mass wasting and erosion sites inventoried within the South Fork Skokomish were related to roads, and the remaining ten percent were either stream bank or in-unit (harvest unit) slope failures. Delivery of sediment to aquatic systems from these events, the vast majority of which are road related, is the key contributor to degraded fish habitat and water quality. Changes to aquatic habitats generally include an increase in fine sediments, channel aggradation, and loss of in-channel wood throughout much of the mainstem and most of the tributaries.

In terms of terrestrial habitat, past harvest practices have led to fragmentation and simplification the biodiversity within forest stands. Composition of much of the riparian vegetation has changed; areas that once supported conifers now have high percentages of small-diameter conifers and hardwoods, and the available supply of trees for recruitment of large wood, an important component of fish habitat, into streams has been reduced.

In the early 1990s, the management emphasis on NFS lands within the watershed changed from one of resource extraction to restoration, due initially to direction under the Northwest Forest Plan. Since the early 1990s, the Forest Service and various partners have focused on watershed recovery efforts at the landscape scale that are aimed at recovery of fish stocks and habitat, improving and protecting water quality, and restoring late-successional forest stand conditions. Between the early 1990s and 2004, \$10.6 million in road, instream, riparian and vegetative work was completed. Since 2004, the Forest Service in collaboration with the Skokomish Watershed Action Team, the Skokomish Tribe, and several other partners, has completed an additional \$11.1 million in restoration work. During this latter period restorative actions have emphasized road decommission, closure, stabilization, and trail conversion work, and commercial and pre-commercial thinning.

Remaining work needed to recover this watershed is similar to restoration efforts implemented during the past two decades - primarily road decommission, closure, and stabilization work and commercial and pre-commercial thinning. The tendency of road-related landslides is to move down stream to channels and either scour out habitat with debris torrents or bury spawning and rearing habitat under aggradations of silt, cobble, and debris. It is therefore critical to complete the road decommissioning and stabilization work on the uplands to cut off the source of elevated sediment and allow the system to recover. Acquisition of critical wetland, riparian, and lake habitats would offer protection of these important resources. Commercial and pre-commercial thinning treatments will improve structure and diversity of forest stands. Cumulatively, these recovery efforts will increase the resiliency of the watershed and improve its ability to respond to impacts of climate change. In addition, prairie restoration would restore unique ecological habitat that has historical cultural significance to the Skokomish Tribe.

**Important Ecological Values:** The Lower South Fork Skokomish supports diverse aquatic and terrestrial habitat and species. It provides around 16 miles of anadromous habitat and about 43 miles of resident habitat. It contains designated critical habitat for Puget Sound Chinook and Puget Sound Coastal Bull Trout. The watershed supports the following anadromous fish species: Bull Trout, Steelhead, Coho Salmon, Coastal Cutthroat Trout, River lamprey and sculpin. Of these species, three are listed as threatened under the Federal Endangered Species Act (ESA), the Puget Sound Coastal Bull Trout, Puget Sound Steelhead, and Puget Sound Chinook. The Puget Sound Chinook have been extricated from the Upper South Fork Skokomish watershed, but will be reintroduced as part of the Chinook recovery effort. Fish on the Sensitive Species List include Puget Sound/Strait of Georgia Coho Salmon, Puget Sound Coastal Cutthroat

Trout, and River lamprey. Resident fish species present include resident rainbow and cutthroat trout.

Protecting water quality is a concern for supporting beneficial uses within and downstream of this watershed. Waters from the Lower South Fork Skokomish also influence key anadromous spawning and rearing habitat downstream in the mainstem Skokomish River. According to Washington State, all surface waters on NFS lands within this Lower South Fork Skokomish watershed area are to be protected for the designated uses of: Char Spawning and Rearing; extraordinary primary contract recreation; domestic, industrial and agricultural water supply; stock watering, wildlife habitat; fish harvesting; commerce and navigation; boating and aesthetic values.

The 2008 federal CWA 303(d) list includes one water body listed for temperature within the Lower South Fork Skokomish. Currently no TMDL is in place to address the two 303(d) listed water bodies within the South Fork Skokomish watershed. However, development of the Westside Forest TMDL is underway, and includes these two listed water bodies.

The watershed also supports a wide spectrum of wildlife species. Two terrestrial species of concern, the Northern Spotted Owl and the Marbled Murrelet, are listed as threatened under the federal ESA.

**Current Condition Class:** Functioning at Risk

**Target Condition Class:** Functioning Properly

**e. Key Watershed Issues**

1) Attributes/Indicators within FS control to affect

<b>ATTRIBUTES /INDICATOR</b>	<b>REASON FOR RATING</b>
1.1 Water Quality – Impaired Waters (303d Listed)	The 2008 federal CWA 303(d) lists one water body listed for temperature within the Lower South Fork Skokomish watershed on the South Fork Skokomish River. The Upper South Fork watershed provides contributing waters to this river segment. Currently no TMDL is in place to address this 303(d) listed water body. However, development of the Westside Forest TMDL is underway, a tri-Forest effort that includes this water body.
1.2 Water Quality – Water Quality Problems (for non-303d Listed Waters)	Field surveys have determined direct evidence of, or conditions that pose a likelihood of, accelerated sediment delivery to aquatic systems, due primarily from surface erosion and mass wasting incidents from roads. Fine sediment contributions to streams result in elevated suspended sediment and turbidity levels, and contribute to degraded stream conditions.
3.1. Aquatic Habitat – Large Woody Debris	Past harvest and stream cleaning, especially for the abandoned reservoir project, substantially decreased the amount of stable wood in channels. Phase I of the Large Wood Enhancement Project

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	partially corrected this. Phase II would complete this work within the Holman Flat reach.
3.3. Aquatic Habitat - Channel	Field survey have identified the following channel alterations of channel habitat due to sediment delivery associated primarily with mass wasting events from roads: increased channel width to depth ratios, increased size and extent of gullied channel sections, active streambank erosion and instability, channels disconnected from their floodplain or braided, channel degradation and/or or aggradation. The Lower South Fork Skokomish contains habitat designated as critical for Puget Sound Chinook and Puget Sound Coastal Bull Trout.
4.2 Aquatic Biota – Native Species	The watershed supports three fish species listed under Federal ESA as threatened, the Coastal Puget Sound Bull Trout, Puget Sound Steelhead, and Puget Sound Chinook.
6.1 Roads and Trails – Open Road Density	Historic road densities on NFS lands within the entire South Fork Skokomish watershed measured 3.6 miles per square mile. Road densities have been substantially reduced through decommissioning efforts over the last two decades. Decommissioning will further reduce road densities.
6.2 Roads and Trails – Road and Trail Maintenance	The following factors contribute to road maintenance needs: the occurrence of frequent intense winter storms that distribute high amounts of precipitation or rain-on-snow events on steep, unstable terrain; an aging road infrastructure, and; insufficient road maintenance funds. Substantial gains have been made since 2005 in implementation of deferred road maintenance. Implementation of storm damage risk reduction and culvert upgrade work within this action plan would effectively target priority sites in need of road maintenance.
6.3 Roads and Trails – Proximity to Water	Roads intersect highly dissected terrain, with stream densities measuring 5.8 miles per square mile. The road system acts as an extension to the drainage network. Decommissioning and storm damage risk reduction work identified within this plan would reduce connectivity of roads to the stream system.
6.4 Roads and Trails – Mass Wasting	Mass wasting associated primarily with roads is a primary contributor to degraded water quality and fish habitat. The 1995 South Fork Skokomish watershed analysis indicated that of the 2,500 erosion sites inventoried, 90% were associated with roads and 5% were identified as mass wasting. Decommissioning, storm damage risk reduction, and culvert upgrade work identified in this plan targets priority sites that would reduce the potential for future road-related mass wasting events.
5.0 Riparian/Wetland Vegetation	Past timber harvest practices resulted in reduced riparian areas associated with clearcut units. The upper portions of the mainstem South Fork Skokomish were harvested as part of the abandoned dam construction project. The Large Wood Enhancement Project will stabilize the channel and allow riparian vegetation to reestablish. The

	Skokomish Land Acquisition will maintain and protect critical riparian habitat on the South Fork Skokomish mainstem and on the perimeter of Lake West.
7.2 Soil Erosion	Surface erosion associated primarily with roads is a primary contributor to degraded water quality and fish habitat. The 1995 watershed analysis that covered the entire South Fork Skokomish watershed indicated that of the 2,500 erosion sites inventoried, 90% were associated with roads and 95% were identified as surface erosion. Decommissioning and storm damage risk reduction identified in this plan targets priority sites that would reduce the surface erosion.

2) Attributes/Indicators that require other parties to address

ATTRIBUTES /INDICATOR	REASON FOR RATING
1.0 Water Quality;  3.0 Physical Habitat;  6.0 Roads and Trails	Over 40 percent of this watershed is privately owned. Lands on private ownership are managed primarily for commercial timber harvest. Timber management practices include clearcut harvest methods, construction of new roads, and maintenance or reconstruction of existing roads. Private timber companies manage their lands to be in compliance with Washington State forest practices. Potential impacts to practices on private lands include degradation of water quality and physical habitat due to harvest and road activities, removal of riparian adjacent trees that limit recruitment of large wood into channels, and past practices that removed large wood from streams.

**2. Watershed Characteristics and Conditions**

**a. General Context/Overview of the Watershed**

***Geology and Soils***

The dominant landform in the upper headwater tributaries is that of steep basalt hills. The South Fork Skokomish watershed is predominately underlain with complexly folded basalts and breccias, with some small interbeds of siltstones, shale, and sandstone. Continental glaciation extending from the mountains in British Columbia overran the lower basin and deposited hundreds of feet of sediment in the southeast corner of the basin and a thin veneer of unstable sediments on some hillslopes. Soil depths are variable. Where glacial sediments occur in valley bottoms, soils are deep. On steep hillslopes soils are typically less than 3 feet in depth. Subsequent fluvial erosion has formed steep gorges and valley walls, and a broad flat alluvial valley bottom in the lower basin. It has also formed smaller gorges in the upper basin. Alpine glaciation in the upper basin has steepened side slopes and rounded valley bottoms leaving substantial deposition in the valley bottoms, particularly in the upper extent of the watershed in the Holman Flat area.

### ***Climate***

The maritime climate of the South Fork Skokomish Watershed is characterized by relatively dry cool summers and wet mild winters. The proximity of this watershed to the Pacific Coast subjects it to strong maritime influences. Seasonal changes in weather result from shifts in the pathways of dominant westerly trade winds. During the summer, fewer wet fronts off the Pacific move across the land resulting in more solar radiation reaching the forests and higher air temperatures during July and August. The wet season begins in the fall and reaches a peak during the winter months of November, December, and January. Major storms that occur in the fall and winter most often approach the Olympic Peninsula from the Pacific Ocean following a southwesterly to northeasterly pattern.

Precipitation in the watershed comes in the form of both rain and snow. Average annual rainfall varies from about 90 inches in the southern portion of the watershed to around 120 inches at higher elevations. Almost 90 percent of the average annual precipitation falls between mid-September and May 1. Snowfall in the watershed typically occurs during the months of November through March, with the greatest amounts falling in January and February. Snow accumulation is uncommon in most years below the 1,000 foot elevation. In general, snow accumulates above the 2,500 foot elevation, and a snow pack persists above this elevation through late spring. There is rarely any snow pack remaining in the watershed by August. Snow and rain are common between 1,000 and 2,500 feet. Generally shallow snow packs (less than 15 inches deep) accumulate and melt quickly several times each winter as alternating cold fronts and warm fronts transit the area.

This watershed lies predominantly within the precipitation zones categorized as rain-on-snow or rain-dominated zones. Several of the major tributary drainages within the watershed have around 50 percent or greater of their area in the rain-on-snow transition zone and these are: Vance Creek, Rock Creek, and Cabin Creek.

### ***Streamflows and Floods***

Stream flow runoff in the South Fork Skokomish watershed closely mimics seasonal precipitation patterns, dependent in part upon elevation of the basin and the degree of snow pack influence. Stream levels begin to decrease in late spring or early summer as precipitation and snowmelt subside, with lowest streamflow levels occurring in August or September. Highest flows occur in December through February corresponding to peak in precipitation patterns.

Floods are a common natural disturbance within the South Fork Skokomish watershed and generally occur in the fall and winter as the result of prolonged rainstorms. These floods may be augmented by water from snowmelt if rain falls on snow. Rain-on-snow storm events can be a predominant source of peak flows and typically occur during the months of October through May.

### ***Potential Effects of Climate Change on the Hydrology***

Model projections show increased air temperatures will affect snowpack and timing of streamflow. Increased temperatures are predicted to result in more precipitation falling as rain rather than snow in the winter and earlier snowmelt. The greatest reductions in snowpack are

expected for lower elevations (<3,280 feet). This will increase winter and spring streamflows and reduce summer flows. The Skokomish watershed receives most of its precipitation as rain, but also some snow in higher elevations. It is expected that warming temperatures will have a moderate impact on streamflows within Skokomish, relative to other river systems on the Olympic Peninsula.

Changes in precipitation will affect streamflow and the frequency and magnitude of flood events. It is recognized that model projections for precipitation are much more uncertain than those for temperature. Projections for seasonal precipitation changes show increases in winter precipitation and decreases in summer precipitation. Increased cool season precipitation is projected to lead to increases in runoff. Precipitation intensity is also projected to increase, with greatest increase in flood magnitude and frequency predicted in December and January.

Shifts in hydrologic processes resulting from predicted increased air temperatures and changes in precipitation will likely impact physical watershed processes in a number of ways. Increased precipitation and storm intensity could lead to increased rate and volume of water delivery to channels, increased mass wasting and debris flows, and increased sediment and wood delivery to streams. Increased winter and spring flow volume in streams could lead to increased floodplain inundation, increased channel migration, and increased channel erosion and scour.

#### ***Channel Geomorphology and Fish Habitat***

The channel network within the entire South Fork Skokomish watershed includes at least 517 miles of stream. The stream channel analyst for the 1995 watershed analysis subdivided the watershed into six areas based on general stream and valley type and described the channel network in simple terms as follows. The upper extent of the South Fork Skokomish mainstem within this watershed area occupy a relatively broad, low gradient glacial valley, then flows through a steep bedrock canyon gorge for several miles. After exiting the gorge the South Fork enters the broad Skokomish Valley where it joins with the North Fork to form the main stem Skokomish River.

Within the watershed there are roughly 24 miles of anadromous habitat and around 64 miles of resident habitat. Anadromous habitat exists throughout the entire mainstem within this watershed, but with the exception of Vance Creek, distribution of anadromous habitat is limited within tributary channels. Resident fish habitat covers the same reaches as anadromous habitat, but extends further upstream on the tributaries.

**b. Watershed Conditions** - Past management that involved intensive timber harvest, broadcast burns, and road construction spanning the decades leading up to the 1990s, have been the major contributors to impacts of aquatic and terrestrial resources in this watershed. Since the early 1990's implementation of the Forest Plan on NFS lands has emphasized restoration aimed at recovery of terrestrial and aquatic species and their habitats.

Overall watershed conditions are expected to improve over time as the result of result of a substantial restoration program of work implemented on NFS lands in the watershed since the early 1990's. Priority work has been implemented to improve ecological health of watershed through implementation of projects aimed at recovery of aquatic and terrestrial habitats. It is

recognized that it may take decades to realize the benefits of this work. Restoration efforts to date have involved the following types of projects: commercial thinning; pre-commercial thinning; riparian nutrient enhancement; floodplain restoration; road decommission, closure, trail conversion storm damage risk reduction and maintenance; resident fish passage barrier correction; elk forage enhancement; Pine Lake reed canary grass treatment; invasive species control, and native revegetation.

### **Uplands/Hillslope Conditions**

#### *NFS Lands*

Intensive timber harvest and road construction in decades leading up to the 1990's led to extensive management related surface erosion and mass wasting incidents. Inventories in 1990's determined approximately 2,500 erosion sites ranging in size from one quarter to five acres were present in the entire South Fork Skokomish watershed. Ninety-five percent of these were associated from roads and the remaining 10 percent were either in-unit (harvest unit) or stream bank slope failures.

Construction of roads leading up to the 1990s resulted in high road densities that intersected inherently high drainage densities; road densities measured 3.6 miles per square mile on NFS lands alone, and drainage densities range from 5.4 to 7.0 miles per square mile. Road remediation efforts, including decommissioning and closure treatments implemented since the early 1990s have improved hillslope hydrologic processes by effectively disconnecting several miles of road from the stream network. This work, along with road stabilization and culvert upgrade work, has also markedly reduced the risk of mass wasting and surface erosion.

For road and trail treatments within the South Fork Skokomish, the projected effects of climate change on hydrology and impacts to watershed processes were considered in prioritizing road decommissioning work and determining the general treatment intensity. For, instance, valley bottom roads or roads having significant drainage area within rain-on-snow or snow dominated areas may be higher priority for treatment. Qualitative assessments were used to identify roads within these areas. Valley bottom roads are those located at the base of slopes and in close proximity to stream systems. Roads with substantial drainage area within rain-on-snow or snow dominated zones were considered for increased treatment intensity. In the case of decommissioning, design considerations included more frequent drainage features such as cross ditches, increased pullback of unstable fill material, or outsloping. Trail conversion and stabilization design will also consider treatment intensities, including those at stream crossings.

#### *Private Lands*

Timber harvest management and agriculture has occurred on private lands predominantly in the lower part of the watershed. Timber harvest practices include clearcut harvest methods, reconstruction of existing roads, and construction of new roads.

### **Riparian Conditions**

Historic timber management and activities associated with reservoir clearing for a dam project that was abandoned altered riparian conditions within the Lower South Skokomish watershed. Analysis conducted in 1997 based on review of 1929 aerial photography, found that historically that riparian areas examined were composed of old, dense conifer stands with good canopy

cover. The 1997 analysis characterized riparian areas within some drainage areas were as having alternating stands of mature old growth and wide swaths of clear cut with good riparian leave areas. The clearcut areas with riparian buffers show reduced riparian areas. The upper extent of the South Fork mainstem within this watershed was harvested as part of the abandoned dam construction project. It is reasonable to assume some recovery of riparian stands has occurred in the 15 year period since following the 1997 assessment on NFS lands given the growth in vegetation and curtailment of clearcut harvest practices. Riparian buffers on private lands provide limited potential for recruitment of large wood into channels, and in locations limit shading of streams.

### **In-channel Habitat Condition**

Current habitat conditions are highly variable in the watershed and are strongly influenced by channel type, local sediment dynamics, and the amount of instream large wood. Several reaches in the mainstem South Fork Skokomish display extensive aggradation and channel shifting which appear to be largely natural events. Past management activities, including those associated with timber harvest and agriculture, have substantially degraded fish habitat within the watershed, including those associated with timber harvest and agriculture practices. Changes to aquatic habitats generally include an increase in fine sediments, channel aggradation, alterations of the natural streamflow regime, loss of in-channel woody debris, and elevated stream temperatures. The net result has been a reduction of in-stream habitat complexity and a reduction in the diversity and productivity of the aquatic community.

## **3. Restoration Goals, Objectives, and Opportunities**

**a. Goal Identification and Desired Condition** – The overall restoration goals on NFS lands in the Lower South Fork Skokomish are to recover fish and other aquatic organisms and their habitat, improve water quality, mitigate flood hazards, and restore healthy watershed conditions. Implementation of work in this plan would complete priority restorative actions in this watershed, and includes: road decommissioning, road storm damage risk reduction, in-stream large wood placement, commercial thinning, pre-commercial thinning, and prairie restoration. In addition, the Skokomish land acquisition would secure critical wetland, lake and riparian habitat within the watershed. These actions, in combination with restoration work implemented over the last two decades, will move this watershed toward a more properly functioning condition.

### **b. Objectives**

- i.** Alignment with National, Regional, or Forest Priorities includes:
  - United States Forest Service Watershed Condition Framework
  - United States Forest Service Pacific Northwest Region Aquatic Restoration Strategy – the South Fork Skokomish is a focus watershed within the Puget Sound, a priority basin identified by the Region.
  - 1994 Northwest Forest Plan – identified the South Fork Skokomish as a Tier 1 Key Watershed.
  - 2003 Olympic National Forest Access and Travel Management Plan, as updated in within the South Fork Skokomish watershed in 2007.

- 2004 Olympic National Forest Strategic Plan – identified the South Fork Skokomish as a priority watershed for restoration work.
- ii. Alignment with State or local goals include:
  - 2007 Skokomish Watershed Action Team 3-Year Action Plan
  - 2000 Forest Service and Washington State Department of Ecology Clean Water Act Memorandum of Understanding – plan helps FS meet commitments in MOA regarding Federal and State water quality laws.
  - Puget Sound Partnership
  - 2005 Hood Canal Coordinating Council Salmon Habitat Recovery Strategy
  - 2004 Draft Recovery Plan for the Coastal Puget Sound Distinct Population Segment of Bull Trout
  - 2010 Draft Skokomish Chinook Recovery Plan
  - Draft Hood Canal Integrated Watershed Management Plan

**c. Opportunities**

- i. Partnership Involvement – Restoration actions within the watershed have had strong partner support over the past two decades. It is expected that partners will play an active and vital role in future restoration actions outlined in this plan, similar to collaborative efforts that have occurred in the watershed in recent years.

Since the mid-2000s, the Skokomish Watershed Action Team, the Skokomish Tribe, and several other partners have been actively engaged in various aspects of restoration projects, instrumental in securing funds to complete the work, conducted outreach, and assisted or led monitoring efforts. SWAT is a diverse collaborative partnership representing federal, state, county governments, Skokomish Tribe, commercial timber company, power company, watershed residents, and non-government organizations working together to restore the Skokomish basin.

SWATs mission is to work towards common ecological and economic goals in the Skokomish River watershed through collaborative basin restoration projects. One of SWATs primary focuses is restoring NFS lands in the South Fork Skokomish watershed. SWAT members have contributed significantly through development of the 3-Year Action Plan, support of planning efforts, and coordination and participation in field trips to educate members about the benefits of restoration work throughout the Skokomish basin. *In 2009, SWAT received international recognition as one of three restoration case studies representing the United States at the XIII World Forestry Congress held in Buenos Aires, Argentina.*

- ii. Outcomes/Output
  - a) Performance Measure Accomplishment – Specific accomplishments will include:
    - Essential Projects***
      - Road Decommission – 7.1 miles
      - Road Storm Damage Risk Reduction – 36.5 miles
      - South Fork Skokomish Large Wood Enhancement Project – 1 mile

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- Prairie Restoration – 33 acres
- Skokomish Land Acquisition – 1,760 acres
- Commercial Thinning – ~ 4,800 acres
- Pre-Commercial Thinning – ~ 2,000 acres

The SWATs Action Plan Update, currently in development, demonstrates collaborative landscape scale restoration on multiple ownerships and outlines recovery work aimed at benefiting aquatic and terrestrial habitat and species throughout the Skokomish Basin. It identifies other projects in addition to those brought forward in this 6<sup>th</sup> field Action Plan as Essential Projects. The additional projects include:

- Nutrient Enhancement – Ongoing annual Salmon Carcass Placement
- Riparian Assessment
- Elk and Deer Forage Enhancement
- Wildlife Tree Enhancement - Snag Creation
- Prairie Restoration – additional phases

- b) Socioeconomic Considerations: Restoration work implemented under this plan totaling over \$8,600,000 would support the local economy by generating work for individuals in nearby communities. The types of jobs that would be supported through implementation of with the restoration actions outlined under this plan include: contract work for heavy equipment construction for road work, commercial timber harvest pre-commercial thinning, native revegetation and invasive weed treatments, and; youth crews to carry out revegetation, erosion control, and maintenance work.

Work under this plan would contribute directly to restoration of the natural sediment regime, improved water quality, fish habitat, and terrestrial habitat within the Lower South Fork Skokomish watershed. It contributes indirectly to restoration of the natural sediment regime, improved water quality, fish habitat, and terrestrial habitat within the lower Skokomish watershed. It also directly enhances aquatic and terrestrial resources within Skokomish Indian Tribe's U&A area. Improved watershed conditions benefit the Skokomish Valley and Skokomish Indian Reservation residents, the closest downstream communities.

Collaborative efforts associated with implementation of this plan are expected to strengthen the solid and durable relations forged between the Forest Service SWAT, the Skokomish Tribe, and other partners. One of SWATs goals is to work to enhance the economic and environmental sustainability of the Skokomish watershed, recognizing the best available science, technology, community values and other means as appropriate. Outreach and education conducted by Forest Service, SWAT, and others partners is expected to reach a variety of organizations or individuals representing diverse interests at local, national and international levels, congressional representatives, and local youth.

**d. Specific Project Activities (Essential Projects)**

**a. Road Decommissioning**

- **Attribute/Indicator Addressed:** 1.1 Water Quality – Impaired Waters (303d Listed); 1.2 Water Quality – Water Quality Problems (for non-303d Listed Waters); 3.3 Aquatic Habitat – Channel; 4.2 Aquatic Biota – Native Species; 6.1-6.4 Roads and Trails – Open Road Density, Road & Trail Maintenance, Proximity to Water, and Mass Wasting; 5.0 Riparian and Wetland Vegetation, and; 7.2 Soil Erosion. **Project Description:** Work under this project includes decommissioning of 7.1 miles of FS roads. *Completion of this project will implement all the remaining road decommissioning and closure work currently identified within this 6<sup>th</sup> field watershed.* Planning is complete for all roads within this project. Road decommissioning will improve hillslope hydrology, and reduce potential for management related mass wasting and surface erosion that has the potential to deliver sediments to anadromous and resident spawning and rearing habitat. Treatment intensities vary for individual road segments based on aquatic risk and field reconnaissance that determined existing conditions and are grouped into three general categories: low, moderate, and high. Treatments could include: removal of ditch relief culverts or culverts at intermittent or live streams and associated road fill, construction of drainage swales and cross ditches, removal of unstable road fill material, outslipping or recontouring, scarification of the roadway, construction of road closure barriers, invasive weed control, and revegetation with natives.

FS Road Project	Total Miles	Treatment	ONF RMS Aquatic Risk Rating	Site Conditions	Estimated Total Cost
2351500, 2351510, 2351500, 2351600, and UC spur	1.6	Decommission	Very High = 0.8 miles; Moderate = 0.4; Not rated = 0.4	Work requires removal of 2 large stream crossings, requiring end haul of excavated material to stable location. Stream crossing restoration at one site will correct a resident fish barrier.	\$330,000
2352360 2352420	1.0	Decommission	High		\$105,000
2342230, 2342231, 2343012	2.7	Decommission	High = 2.2; Low = 0.5	Roads transect the Satsop watershed.	\$225,000
2351120, 2351160, 2351180, and UC spur	1.8	Decommission	High = 0.3 miles; Moderate = 0.4 miles; Low = 1.0 miles; Not rated = 0.1		\$100,000

- **Partners Involvement:** Potential partner involvement: *Skokomish Watershed Action Team* – in-kind contributions to support projects, conduct and lead coordination of education and outreach efforts, potential for individual members to secure funds, participate in multiparty monitoring.

*Skokomish Tribe* - in-kind contributions that include project support, assist in education and outreach efforts, potential to secure funds, and participate in multiparty monitoring.

*United States Environmental Protection Agency* – contributes funds for road survey, design and photo monitoring.

*Washington State, Washington Conservation Corp* – implement revegetation treatments on road decommission and closure projects following construction.

*Great Old Broads and Olympic Forest Coalition* – potential for in-kind contribution to conduct both road surveys and photo monitoring, produce summary report of findings for road decommissioning projects, and present findings to SWAT and other interest groups.

- **Timeline:** Starting in 2013 and continuing for 5 years, pending availability of funds. **Estimated costs and associated Budget Line Item:** Approximately \$760,000 is needed to implement project work. Potential BLIs include CMLG or CMRD. Substantial partner funding sources will likely be needed to implement this work. CMLG and NFXF funds covered project planning and design work that was completed in prior years.

**b. Road Storm Damage Risk Reduction (SDRR)**

- **Attribute/Indicator Addressed:** 1.1 Water Quality – Impaired Waters (303d Listed); 1.2 Water Quality – Water Quality Problems (for non-303d Listed Waters); 3.3 Aquatic Habitat – Channel; 4.2 Aquatic Biota – Native Species; 6.2-6.4 Roads and Trails – Road & Trail Maintenance, Proximity to Water, and Mass Wasting, and; 7.2 Soil Erosion.
- **Project Description:** Roads targeted for SDRR treatments include those high priority sites on 36.5 miles of road that are to remain on the transportation system. **Completion of this project will complete SDRR work currently identified within this 6<sup>th</sup> field watershed.** The main objective of SDRR work is to reduce the likelihood and consequence to aquatic resources due to sediment delivery through treatments designed to reduce the potential for water diversion and fill slope failure. Treatments vary for individual road segments by site conditions, aquatic resources at risk, and maintenance level requirements for the road. Treatments associated with existing culverts prone to plugging or failure and diversion may include activities such as replacement of culverts with larger capacity crossing structures, lowered road fills, and cleanout of culvert basin inlets and lead in ditches. At other locations, activities may involve: installation of new or replacement of existing ditch relief culverts, placement of armoring at inlets and outlets of culverts, lowering of fills at culvert crossings, construction of drivable dips, placement of armoring at select ditch segments, road surfacing, construction of water bars, maintenance of culvert inlet basins and ditches, and removal of unstable road fill slopes.

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FS Road Project	Total Miles	ONF RMS Aquatic Risk Rating	Treatments	Estimated Total Cost
2342200	3.4	High	Install cross ditch culvert and armor outlet, construct waterbars, reconstruct waterbars, fillslope pullback, fillslope outslope, ditch cleanout	\$5,200
2342000	15.9		Construct drivable diversion dip and armor outlet, fillslope pullback, revegetate	\$11,200
2340430	0.9	High	Replace 2 undersized culverts, install 2 new ditch relief culverts, armor outlets, and revegetate.	\$26,200
2351000	6.5	Moderate	Replace culvert, armor outlet, and revegetate; fillslope pullback, endhaul.	\$46000
2343000	2.9	Very High	Construct waterbars, reconstruct waterbars, fillslope pullback and revegetate, ditch cleanout.	\$6,200
2350000	6.9	Very High	Pullback unstable material on fillslope, end haul , revegetate	\$5,200

- **Partners Involvement:** Potential partner involvement:  
*Skokomish Watershed Action Team* – in-kind contributions to support projects, conduct and lead coordination of education and outreach efforts, potential for individual members to secure funds, participate in multiparty monitoring.  
*Skokomish Tribe*- in-kind contributions include project support, assist in education and outreach efforts, potential to secure funds, and participate in multiparty monitoring.
  - **Timeline:** Starting in 2013 and continuing for 5 years, pending availability of funds.  
**Estimated costs and associated Budget Line Item:** Approximately \$100,000 is needed to implement project work. Potential BLIs include CMLG, CMRD, and NFVW. Partner funding sources may be needed to implement this work. CMLG and NFXF funds covered project design work that was completed in prior years.
- c. **South Fork Skokomish Large Wood Enhancement – Phase II**
- **Attribute/Indicator Addressed:** 1.2 Water Quality – Water Quality Problems (for non-303d Listed Waters); 3.1 - 3.3 Aquatic Habitat –Large Woody Debris, Channel; 4.2 Aquatic Biota – Native Species; 5.1 Riparian and Wetland Vegetation
  - **Project Description:** The goal of this project is to restore channel processes, riparian conditions, fish habitat, and fisheries production by constructing a series of large ELJs within a 2 mile river segment in the Holman Flat area of the mainstem South Fork Skokomish River. Installation of large wood complex structures would stabilize the river channel and banks, increase floodplain roughness, increase bank and terrace stability, and allow riparian vegetation to get reestablished. The structures would also capture and retain spawning gravels and sediment, scour deep pools, and provide abundant complex hiding cover.

This project resides primarily on Tacoma Power lands. A small portion of the project area is on NFS lands. Preliminary design was completed for this river segment as part of the work completed under Phase I. The Forest Service would partner with the Skokomish Tribe, Tacoma Power, and SWAT to implement this project. Forest Service contribution would include participation in planning and design for the portion of the project on NFS lands, contribution of wood for instream placement within the river segment on the NFS lands, and participation in multi-party monitoring.

- **Partners Involvement:**

*Skokomish Tribe* – the tribe would lead this project; secure grant funds to implement the work; and participate in multi-party monitoring.

*Tacoma Power* – contribute in-kind in planning and implementation as the major landowner within the project area; potential contributor of funds to implement the work; contribute in-kind to participate in multi-party monitoring.

*Skokomish Watershed Action Team* – contribute in-kind to support this project, conduct education and outreach, and participate in multi-party monitoring.

- **Timeline:** The proposed project timeline for this project would be to initiate planning (NEPA for the FS) and design in 2014 or 2015, and implement in 2015 or 2016. Monitoring would occur for 5 years following implementation.
- **Estimated costs and associated Budget Line Item:** The Skokomish Tribe estimates \$2,875,000 is needed to implement the project. The predominant cost of this project will be for work on Tacoma Power lands. The Forest Service contribution would be an estimated \$55,000 to cover planning, design, and monitoring for the NFS land portion of this project, and in-kind contribution of wood for instream placement on NFS lands is estimated to be \$100,000. A potential BLI to complete planning and design includes NFWF. Substantial partner funding sources will be needed to implement this work.

d. **South Fork Skokomish Land Acquisition**

- **Attribute/Indicator Addressed:**

- **Project Description:** This project proposes Forest Service acquisition of 1,760 acres of private land inholdings in the Lower South Fork Skokomish including 1.7 miles of river corridor and Lake West, a 20 acre lake. The parcels include: T.22 N, R 05 W, sections 35, 25, and 23. These parcels represent a unique array of lowland wetlands, riparian areas, and prairie ecosystems that are threatened with conversion to private residential development. There are few low-elevation lakes on the Olympic Peninsula, creating a high demand for lakeside vacation and primary homes. The acquisition significantly benefits restoration efforts and reduces inholdings and the total length of abrupt habitat edges at the public-private boundaries. The tracts will be protected in perpetuity and provide critical habitat for wildlife and aquatic species. The Forest Service recently submitted a 2014 Land and Water Conservation Fund grant proposal requesting funds for this acquisition.

The proposed land acquisition contains critical Skokomish watershed wetlands, riparian areas, and prairie ecosystems. In the vicinity of the proposed acquisition the river supports Puget Sound Steelhead, Puget Sound Chinook, coho, chum, bull trout

and coastal cutthroat trout. This project protects 1.7 miles of crucial river corridor for spawning and rearing anadromous fish species.

Lake West is a shallow 20-acre lake adjacent to designated Late Successional Reserve forest land, and currently supports Smallmouth bass and resident trout. It drains into the South Fork Skokomish River and holds significant potential for wildlife and habitat-enhancement opportunities. Islands in the lake also offer a diversity of microhabitats that can be used by marsh birds, reptiles, or amphibians.

- **Partners Involvement:**

*Western River Conservancy* – contribute in-kind to negotiate an advance purchase or option of this property with the landowner to protect against conversion if the Forest Service is successful in if the Forest Service is successful in obtaining 2014 Land, Water, and Conservation Funds. The acquisition would be conveyed to federal ownership once all title issues have been resolved and a determination made as to the absence of any hazard waste.

- **Timeline:** Starting in 2013 and continuing for 2 years.

- **Estimated costs and associated Budget Line Item:** It is estimated that 2,810,000 is for this project. Of this \$2.8 million total, \$100,000 is needed to complete planning, environmental site and \$2,700,000 is needed to purchase the land. A Potential BLIs for this project includes LWCF.

e. **Commercial Thinning – Lower South Fork Skokomish**

- **Attribute/Indicator Addressed:**

- **Project Description:** This project proposes to manage stand density and restore forest diversity by conducting variable density commercial thinning treatment on approximately 4,000 acres of forest stand plantations that contain trees over 9 inches in diameter and over 40 years of age. The thinning treatment would be a variable density thinning from below incorporating skips, gaps, and areas of heavy thinning. A primary objective of the proposed treatment would be to promote the development of late-successional habitat characteristics within the project stands. Thinning would reduce stand density, add structural and spatial complexity, maintain or increase crown and branch size and diameter growth of individual trees, introduce or continue to develop an understory of seedlings/saplings, shrubs, and herbs, increase the number of snag recruitment trees suitable for cavity nesters, and contribute to coarse woody debris recruitment.

Within Riparian Reserves, an additional objective would be to enhance the long-term recruitment of large woody debris in streams adjacent to project stands. Within Riparian Reserves, commercial thinning may enhance long-term recruitment of large woody debris to streams, however, implementation of required no-cut buffers along all streams would limit potential benefits.

This project work contributes to the landscape scale restoration work implemented in the entire South Fork Skokomish watershed since the early 1990s, including several acres of commercial thinning. Restoration, habitat enhancement, and sale area improvement activities that may be implemented after commercial thinning activities

in an area are complete, if sufficient revenue is generated by the timber sales to support them.

- **Partners Involvement:**

*Skokomish Watershed Action Team* - would contribute in-kind contributions to support projects, lead collaboration in stewardship efforts, conduct and lead coordination of education and outreach efforts, and participate in multiparty monitoring. SWAT has collaborated with the Forest Service in past stewardship projects. SWAT has expressed strong interest in collaborating in future Stewardship Contract opportunities that would occur in this watershed.

*Skokomish Tribe*- in-kind contributions that include project support, education and outreach, collaborate in stewardship efforts, and participate in multiparty monitoring. *Great Old Broads and Olympic Forest Coalition* – potential for in-kind contribution to conduct road surveys and photo monitoring, produce summary report of findings for roads associated with commercial thinning, and present findings to SWAT and other interest groups.

**Timeline:** The project will likely begin in 2013 and continue for 7 to 13 years.

- **Estimated costs and associated Budget Line Item:** Approximately \$1,678,000 is needed to implement the project. A potential BLI includes NFTM. Preliminary estimates of the potential stewardship receipts that could be generated from this project range from \$1,000,000 to \$4,000,000. Stewardship receipts could be used to fund restoration work within the South Fork Skokomish watershed.

f. **Pre-Commercial Thinning**

- **Attribute/Indicator Addressed:**

- **Project Description:** This project will pre-commercial thin an estimated 2,000 acres of forest stand plantations that contain trees measuring less than 8 inches in diameter and are less than 35 years of age. Planning for this project was completed in prior years. Pre-commercial thinning overstocked plantations are designed to enhance wildlife habitat and species diversity by moving stands more rapidly toward attainment of late-successional conditions. Thinning in early and mid-seral patches will begin creating the structural diversity and promoting a reconnection of wildlife corridors. These treatments will enhance species and height diversity by favoring minor species. Stocking control is intended to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species by restoring the species composition and allowing increased water, nutrients, and light into the stands.

This project work contributes to landscape scale restoration work implemented in the entire South Fork Skokomish watershed since the early 1990s, including nearly 5,000 acres of pre-commercial thinning.

- **Partners Involvement:**

*Skokomish Watershed Action Team* - SWAT would contribute in-kind contributions to support projects, conduct and lead coordination of education and outreach efforts, and participate in multiparty monitoring

*Skokomish Tribe*- in-kind contributions that include project support, education and outreach efforts, potential to secure funds, and participation in multiparty monitoring.

- **Timeline:** Starting in 2013 and continuing for 10 years.
- **Estimated costs and associated Budget Line Item:** Approximately \$423,000 is needed to implement this project. Potential BLIs include RTRT, NFWW, and KV. Substantial partner funding sources will likely be needed to implement this work. Planning was completed in prior years using \$10,000 in NFTM.

**g. Skokomish Prairie Restoration**

- **Attribute/Indicator Addressed:**
- **Project Description:** The purpose of this project is to restore prairie habitat to maintain and enhance the cultural and ecological values that existed previously. This project involves conducting prescribed burns varying in size over the span of five or six years to continue restoration effort initiated in the late 1990s, which involved heavy thinning and subsequent prescribed burn on a 33 acre unit. All burns will be controlled, low intensity burns, designed to reduce the cover of salal and small conifers, and to encourage establishment and spread beargrass and other native prairie plant species. Project activities are expected to enhance deer and elk, and increase the quality and availability of native plants that have cultural significance, including beargrass and huckleberry. This current phase is a step toward work envisioned for broader project restoring the mosaic of historic prairie and beargrass savanna ecosystem on National Forest System lands in the Skokomish Watershed.

Implementation will use Forest Service personnel and volunteers for the pre-burn site preparation, and Forest Service personnel and other fire crews available under existing cooperative agreements, including the Center for Natural Land Management's South Puget Sound Ecological Fire Program. Implementation is through NFWF CCS funds and in-kind volunteer and fire crews. Intensive monitoring of 15 established vegetation plots will be conducted by ecologist Dave Peter from the PNW Olympia Forestry Sciences Laboratory. Monitoring is through NFWF CCS funds. Efforts will be made to secure additional partner funding if monitoring indicates the need for more prescribed burns or other restoration activity after the first two years of this project.

- **Partners Involvement:**  
*Skokomish Watershed Action Team* - SWAT would contribute in-kind contributions to support projects, conduct and lead coordination of education and outreach efforts, and participate in multiparty monitoring  
*Skokomish Tribe*- in-kind contributions that include project support, education and outreach efforts, potential to secure funds, and participation in multiparty monitoring.
- **Timeline:** Starting in 2012 and continuing for 5 years.
- **Estimated costs and associated Budget Line Item:** Approximately \$66,000 is needed to implement and monitoring this project in FYs 2014-2016. Planning and design work totaling \$7,900 is complete. Partner funds totaling \$43,000 have been secured to implement the work. Roughly \$12,800 in in-kind contribution from

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partners is expected in the first round of treatments. Potential BLIs include NFIM and NFWF. Partner funding sources will likely be needed to implement this work.

**Costs:**

Contribution	Planning	Design	Implementation	Project Monitoring
FS Contribution	\$765,000	\$558,000	\$4,444,500 \$100,000 (in-kind)	\$51,500
Partner Contribution (both in kind and \$)	\$50,000 (Pending)	\$65,000 (Pending)	\$2,519,000 (Pending)	\$65,000 (Pending)
<b>Total</b>	<b>\$815,000</b>	<b>\$623,000</b>	<b>\$7,063,500</b>	<b>\$116,500</b>

**f. Timelines and Project Scheduling**

FY	Task	FS Cost	Partner Cost
2013-2018	Road Decommission - Planning and preliminary design is complete for all roads.	\$748,000	\$18,000 (Pending)
2013 - 2018	Road Storm Damage Risk Reduction - Planning and preliminary design is complete for all road segments. Projects will be implemented as funds become available. Project sequence will be dependent upon priority of work, consideration of changed site conditions, and receipt of adequate funds to complete the work.	\$97,000	\$3,000 (Pending)
2014 -	South Fork Skokomish Large Wood Enhancement Phase II – Planning could begin in 2014, with implementation in 2015 or 2016. Monitoring would occur following project implementation, and continue for up to 5 years.	\$55,000 \$100,000 (in-kind)	\$2,620,000
2013 - 2015	South Fork Skokomish Land Acquisition – FS submitted a proposal to request funds for this project through the 2014 Land and Water Conservation Fund. Pending funding, planning would begin in 2013, followed by implementation of remaining work during the next 2 years.	\$2,800,000	\$10,000
2013 - 2020	Commercial Thinning – Lower South Fork. Planning could begin in 2013, with implementation following in the next 4-7 years.	\$1,653,000	\$25,000 (Pending)
2013 - 2023	Pre-Commercial Thinning – Planning is complete. Implementation pending availability of funds.	\$421,000	\$2,000 (Pending)
2013-2017	South Fork Skokomish Prairie Restoration – Implementation in 2013 and monitoring in the 4 years following.	\$45,000	\$21,000 (Pending)

**4. Restoration Project Monitoring and Evaluation**

- a. The forest will monitor:** The type and degree of monitoring will vary for individual projects. For project work done under contract, compliance monitoring will be conducted to determine if treatments are implemented as specified in the contract will be conducted through contract administration. The Forest will conduct Best Management Practices (BMP) monitoring at select sites using protocols currently being developed at the national-level of the Forest Service. This BMP monitoring is designed to determine the effectiveness of treatments implemented to protect water resources.

For road decommission, closure, and trail stabilization projects within this plan, the following type of monitoring will occur in addition to compliance and BMP monitoring

described above. Photo monitoring will be conducted at specific road or trail segments to capture comparative conditions for pre, post and some during treatment project phases. The Forest will continue to coordinate with Region 6 and Forest Service Rocky Mountain Research Station in monitoring the effectiveness of road work funded through the Legacy Roads Program.

In addition to road projects, the Forest anticipates monitoring the effectiveness of the large wood enhancement project, prairie restoration, commercial thinning, and pre-commercial thinning.

**b. Monitoring will be done in cooperation with:**

- **Multi-Party Monitoring by SWAT** – With SWATs strong interest in project results, multi-party monitoring is expected to continue. Since 2005, SWAT has led and participated in several field trips to review watershed restoration projects being implemented on NFS lands.
- **Skokomish Tribe** – ONF will actively engage with the Skokomish Tribe in monitoring restoration activities under this plan.
- **Great Old Broads/Olympic Forest Coalition** – In 2010, 2011, and 2012, the Great Old Broads and Olympic Forest Coalition have conducted road surveys and photo monitoring on road decommissioning and trail conversion projects, and roads proposed under commercial thinning projects. Results for their 2010 and 2011 efforts are documents in individual reports. Monitoring for the 2012 projects is underway. The Forest Service will continue to help coordinate future efforts by these groups.
- **Legacy Road & Trail Program** – The Forest Service PNW Region coordinated monitoring of select roads that received decommissioning or SDRR within the South Fork Skokomish watershed. The Forest Service Rocky Mountain Research Station (RMRS) conducted this monitoring, with results summarized in findings in published reports. ONF will continue to with RMRS in their future monitoring efforts.

**Action Plan Date:** September 2012

**Reviewing Official and Title:** Dean Yoshina

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