

**ENVIRONMENTAL ASSESSMENT
FOR THE FOREST MANAGEMENT PLAN
HOH INDIAN RESERVATION, WASHINGTON**

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ABSTRACT: This Environmental Assessment has been prepared to address the projected impacts caused by the implementation of the Hoh Indian Tribe's Forest Management Plan. Title III of Public Law 101-630 (The National Indian Forest Management Act of 1990) Requires an Environmental Assessment be developed for all management plans. The body of this document will explain how preferred alternative #2; the "Active Management Plan" will help move the Hoh Indian Tribe towards achieving their goals and objectives while minimizing any major, negative, environmental impacts. Individual and specific Environmental Assessments will be generated for each management action that does not fall within the scope of Categorical Exclusion.

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I. Purpose and Need for Action

The Hoh Indian Tribe (HIT), in cooperation with the Bureau of Indian Affairs (BIA), Olympic Peninsula Agency proposes to implement a non-expiring, Living Forest Management Plan (FMP) for the Hoh Indian Reservation (HIR). The FMP will provide a framework to guide forest management activities while protecting and enhancing other forest related values such as water quality, wildlife habitat, cultural and socio-economic needs of the Tribe. The FMP is meant to provide guidelines for the Tribe that will help them reach their management goals.

The Hoh Tribe's need for a Forest Management Plan was due to the expiration of their previous FMP which expired in 2006. Since that time, the Tribe has acquired additional lands most of which have been incorporated into trust status. These lands have been incorporated into the new FMP.

The FMP is required in accordance with Title III of Public Law 101-630 (the National Indian Forest Management Act of 1990). The Environmental Assessment (EA) will develop alternatives to implement forest management direction and identify the nature and significance of the impacts of those alternatives. A preferred alternative is selected that best meets the needs of the Tribe without significantly affecting the quality of the environment. There will be a project specific EA completed for each specific project that doesn't fall within the scope of a categorical exclusion section of the regulations.

The Management Plan was developed in collaboration with The Hoh Tribe and the Bureau of Indian Affairs, Olympic Peninsula Agency. It is designed to meet the requirements identified in 53 IAM chapter 2 for category four reservations.

II. Management Objectives

Tribal Objectives

The following management objectives were developed with the guidance of the Hoh Tribe.

Hoh Tribal forestlands will be managed in a way that provides for a safe, healthy environment for Tribal members and protects basic watershed functions for the cultural and economic needs of the Tribe. Emphasis will be placed on maintenance and development of forestlands that provides clean water and habitat conditions that allow fish and wildlife species to thrive.

Direct economic benefits through timber harvesting will be minimal and infrequent. Harvest methods that will be employed include individual trees, commercial thinning's or small patch cuts (< 10 acres). Clear cut harvest methods will generally not be used but may be considered in cases where clearing is needed for housing or other Tribal infrastructure or in the case of a large scale disaster such as wind throw or fire.

Harvest of individual trees for safety, cultural or subsistence needs will be allowed with an appropriate permit. Practices that promote diverse healthy forests, such as commercial thinning, pre-commercial thinning, hardwood control and inter-planting young stands with cedar, shall be encouraged.

The following goals and objectives were developed to reflect the values of the Hoh Tribe. These are intended to provide overall direction during forest planning and implementation. They can be modified with Tribal approval to meet the evolving needs of the Hoh community.

1. Tribal lands shall be managed for the perpetual benefit of the Hoh Tribe. Proposed actions shall insure long term ecosystem health and sustainable fish, wildlife, and plant populations.
2. All proposed forest activities will be evaluated as to their potential impacts to the ecological integrity of Hoh Tribal lands including fish and wildlife habitat, clean drinking water, historic and other cultural resources, alternative forest products, and an aesthetically pleasing landscape.
3. Forest Management activities will be planned and implemented insuring compliance with all current and future laws, policies, and forest management plan amendments.
4. Tribal lands shall provide forest resources for subsistence and cultural uses.
5. Culturally important forest resources and sites shall be protected.
6. To accommodate future growth and infrastructure needed by the Tribe and to fully implement the intent of the Hoh Indian Tribe Safe Homelands Act of 2010, certain forest lands will be designated for development. Land development shall utilize low impact development methods.

III. Management Alternatives

Based on these objectives, two management alternatives have been developed:

Alternative #1: No Action.

This alternative is one in which no concerted timber management is practiced on any trust lands except for occasional removal of hazard trees, and small scale permit cutting of fuel wood. Unscheduled road maintenance and improvement would occur. No timber harvest or forest development activities such as pre-commercial thinning or fuel treatments would be applied. The Tribe would be unable to implement plans identified in the Hoh Indian Tribe Safe Homelands Act of 2010, which includes development of lands for housing and infrastructure.

Alternative #2: Active Forest Management (Preferred Alternative).

This alternative has been developed to support active forest management on HIT forestlands. The Hoh Tribe will be able to plan and implement forestry projects on their land. While no large scale harvests are planned, specific stand improvement activities can take place, as well as planning for implementation of a new housing area and related infrastructure. The fact that the Tribe has a Forest Management Plan will also open up additional funding sources through BIA, USDA-NRCS and others that are not available to Tribes without a Forest Management Plan.

Tribal goals and objectives will guide all management actions; within each timber stand and across the reservation as a whole. Environmental assessments will be conducted as needed for specific proposals as they are developed. Tribal members will benefit from implementation of a permit system that will allow use of the forest for fuel wood, cedar salvage, subsistence and other purposes.

IV. Description of Affected Environment

General Area Description

The Hoh Indian Reservation is located on the North Olympic Peninsula, Jefferson County, Washington. The Hoh Tribe occupies a tract of land on the south shores of the Hoh River, where it flows into the Pacific Ocean. The reservation is about 25 miles south of the town of Forks, WA (refer to Exhibit 1-Vicinity Map). The Tribe is bordered to the south by Olympic National Park, to the east by various private and state lands, to the west by the Pacific Ocean and to the north by the Hoh River. A small portion of the reservation is transected by US Highway 101, but the main access to the reservation is via the Lower Hoh road. There are about 938 acres of land on the reservation, about 650 of which are forested.

In the Hoh Village there are approximately 30 homes along with Hoh Tribal offices, a clinic, waste water treatment facility, fish hatchery and other facilities. A portion of the reservation including all Tribal government buildings is located with the floodplain of the Hoh river.

Portions of the Reservation are also located within a tsunami zone (*see Appendix I, Tsunami evacuation map for the Hoh Tribe*). Additional lands were purchased or deeded to the Tribe in part to construct homes and Tribal facilities outside of the floodplain and tsunami zone.

Climate and Air Quality

The HIR lies within a maritime climate that is predominantly wet and mild. The average annual precipitation is approximately 125 inches (*USBOR 2003*). Average monthly precipitation reaches a high in November at 18.62 inches and a low in July with 2.48 inches. Approximately 77 percent of the average annual precipitation in the area occurs during the sixth month period from October to March. There is not much temperature fluctuation between seasons, averaging 44 degrees F in December to 74 degrees in August.

During the late spring and summer, a clockwise circulation of air around the large high pressure center over the North Pacific brings a prevailing westerly and northwesterly flow of air into Western Washington. In fall and winter, the low pressure center in the Gulf of Alaska intensifies and the high pressure center over the North Pacific becomes smaller and moves southward.

Geology, Soils and Topography

The geology of the Reservation consists primarily of terrace landforms made up of glacial deposition. Most of the soils contained in the area are moderately well-drained, glaciofluvial deposits. Glaciofluvial deposits are those soils created through the transport of sediments, minerals and substrate by previous glacial activity. There are also areas within the Reservation, which identify glacial till as their parent material. Glacial till are sediments transported or transformed by the underside, or base, of the glacier. On the river plains most soils are considered alluvial in origin as they have been deposited over the years by the rising, flooding and meandering of the Hoh River (*USGS 1986*).

Soils are classified into two broad categories; Alluvial soils deposited from the Hoh River and soils containing glacial till formed through a combination of glacial action and native rock degradation. A complete description of all soils and geology of the HIR can be found in Appendix II, NRCS Custom Soil Resource Report for the Hoh Reservation.

**Custom Soil Resource reports contain approximate acreages and boundaries. Reports are intended to display general locations and brief summaries of soil resources within a particular area. Soil Resource Reports do not show accurate property areas or boundary locations.*

The topography ranges from flat river terraces and beachside areas in the north, to steep rocky cliffs along the Pacific Ocean to rolling uplands on the remainder of the reservation. Elevation ranges from 0 at the beach to 160' in the uplands.

Water Resources

The water quality (surface and ground) for the HIR is excellent, reflecting the fact that there is little development or habitation in the areas pertaining to the reservation. The Hoh River is one of the last rivers in the lower 48 states sustaining five species of relatively healthy wild salmon and steelhead populations. (*10,000 years institute*).

Chalaat Creek flows through the reservation and empties into the Hoh River near its mouth. Maintaining both surface and ground water quality has been and will continue to be of primary concern regarding the management of HIR forestlands.

Wildlife and Fisheries

The Hoh reservation lands and the waters of the Hoh River provide excellent habitat for many fish and wildlife species. The Hoh River is home to a variety of salmon fish species. Bull trout are listed as federally "threatened" species under the endangered species act.

The Tribe maintains a hatchery on Chalaat creek where juvenile steelhead are released. Tribal members rely upon healthy salmon and steelhead runs for fishing and subsistence. The hatchery has rearing tanks and a small incubation facility that depends on cool clear water for successful rearing and release of fish.

The reservation, Olympic National Park, and other adjacent forest ownerships are generally remote and undeveloped providing excellent habitat for migratory birds, deer, elk, and bear populations. There is documented bald eagle use on the reservation which is a federally listed species of concern. Marbled Murrelet and Northern Spotted Owl are federal endangered species that could also use habitat on or adjacent to the reservation.

Riparian areas provide a wide variety of habitat for fish, amphibians, beaver, river otter and other water dependent species.

Cultural Resources/Historical

There are many historical sites within the HIR, probably the most important being the old village site. The village site lies directly between the Pacific Ocean and the Hoh River, just south of the mouth of the river. Due to tsunami danger and flood hazards, this site has been vacated. Although not inhabited, the old village site is still considered to be of great importance by members of the Tribe.

Like many native peoples of the Olympic Peninsula, the Hoh Tribe places a great deal of importance in the growth and harvest of Western red cedar. Because of its strength, water resistant properties and its resistance to decay, the cedar tree is one of the most utilized natural resources by the Tribes of the area. Cedar was used for hundreds of common items including; baskets, boxes, utensils, spears, hooks, serving dishes. Cedar was also the Tribe's main source of fiber for things like blankets, shawls, and rope. Probably the cedar tree's most important use was in the construction of large, ceremonial, sea-faring canoes. Cedar was also the preferred build material when constructing tribal lodges and homes. Historical Cedar processing sites can be found on the Reservation.

Mythic and ritual sites, as well as spiritual places and cleansing sites are areas of concern and have been identified by the Tribe. Gravesites are also of concern as well as archeological sites that may be uncovered through geological processes. Key fish, animal, and terrestrial plant species are also high-concern issues for the Hoh Indian Tribe

Socio-economic setting

The population of the Hoh reservation is about 130 people. There are about 230 enrolled tribal members. Of the members living on the reservation 60% are under 18 and many working age adults are unemployed (*Walter Ward, 2009 testimony before US Congress*).

There are limited employment opportunities in the area with tribal government and tribal fishing being primary opportunities. Most Tribal housing is > 20 years old and in need of repair. Financing for repairs has been difficult to obtain because of its location within the floodplain.

Timber Resource

The HIT consists of 938 acres, of which, approximately 650 acres are considered forestland. The other 288 acres consist of developed land, wetlands, cultural lands, Riparian Management Zone (RMZ), Channel Migration Zone (CMZ) or ocean cliffs. Forests primarily consist of western hemlock, Sitka spruce and red alder. Minor amounts of pacific silver fir, big leaf maple and red cedar can also be found. Understory species include grasses, salal, salmonberry, huckleberry and other cohort species.

In 2008 a forest inventory was completed for the HIR. In 2013 the inventory was updated to include newly acquired lands. As a result of this inventory, 3 separate forest stand types were identified, within those 32 types there was found to be an average of 11,794 mbf/acre. Please see Appendix III, Stand Summary Hoh Tribe Inventory 2013, for a complete description of forest stands.

V. Potential Impacts and Mitigations to Defined Resources

Climate and Air Quality

Alternative 1 would result in no change to existing conditions.

Alternative 2 may cause short term periods of moderate air pollution from burning debris piles left over from thinning or harvesting. Any negative impacts from such activities are easily mitigated by creating weather specific standards for burning to avoid unnecessary human exposure. This alternative would also promote healthy forests by thinning out overstocked stands which will be more resilient to any effects of climate change. Thinned, rather than overstocked forests, are also more resistant to the effects of potential catastrophic wildfires.

Geology, Soils and Topography

Alternative 1 would result in no change to existing conditions.

Alternative #2 may have short term impacts to soils resulting from management activities such as yarding operations or new road construction and existing road maintenance. Impacts to soils will be reduced by using low impact ground based yarding techniques such as shovel logging where operators are required to place a matt of limbs underneath yarding roads to reduce rutting and compaction. In areas of high soil moisture harvest activities can be limited to “dry season” only operations. Roads will be maintained by following best management practices (BMPs) as applicable to the activity. Design and implementation guidance found in the Washington Forest Practice Rules (WAC 222) will be followed as applicable.

Water Resources

Alternative 1 would result in no change to existing conditions. Riparian areas that are overstocked will stagnate and grow into poorly rooted, small diameter stands. Riparian areas dominated by red alder will slowly degrade and will eventually be dominated by brush species.

Alternative 2 has a higher potential to impact reservation water quality in both a positive and negative way. On the positive side, thinning riparian areas will promote the growth of large diameter trees which in the long term will provide large woody debris (LWD) which is important for stream function. Thinned riparian areas will also contain taller trees which will better provide stream shade. On the negative side timber harvest operations can disturb soils and generate sedimentation, especially from timber hauling. As mitigation, the Tribe will require that forest activities avoid putting ground based equipment on wet or steep areas. Other BMP's such as seasonal harvest restrictions or increased buffer widths will be implemented on a site specific basis.

Wildlife and Fisheries

Alternative 1 would result in no change to existing conditions.

Alternative 2 has a higher potential to impact reservation wildlife and fisheries resources in both a positive and negative way. Thinned forest stands will provide a more diverse habitat and promote foraging use for some species such as deer and elk. Other species may be disturbed by the short term effect of heavy equipment use. Riparian areas and fish species could be affected if forest stands are thinned too wide and blowdown occurs. Over the long term, stand biodiversity and structural variety should increase, which will improve habitat for most species.

Cultural Resources

Alternative 1 would result in no change to existing conditions.

Alternative 2 could benefit the Tribe by the increased potential of discovery of cultural artifacts and resource sites. Each management action will be preceded by a thorough review of the site by the Tribe to locate cultural artifacts and or culturally significant sites. While it is possible sites or artifacts could be destroyed because of non-discovery, it is more likely that active management will promote discovery and increase awareness of cultural resources. In addition, the preferred alternative will promote the propagation of western red cedar for future generations.

Socio-economic setting

Alternative 1 would result in no change to existing conditions. Use of the forest by the Tribe and its members would be limited. Plans for development of a new housing area outside of the flood plain would not be able to move forward.

Alternative 2 will benefit the Tribe by allowing increased use of the forest. Planning could proceed for relocation of housing areas and government offices. A permit program would allow Tribal members to access the forest for firewood and other minor forest products. Forest thinning would likely increase hunting opportunities for Tribal members.

Timber Resource

Alternative 1 would result in no change to existing conditions. It is not the preferred alternative as it would fail to meet Tribal goals or objectives. If Alternative #1 is employed, it is likely that Tribal forests, especially the recently acquired land, would stagnate from overstocking. Alder stands would deteriorate and likely convert to brush.

If Alternative 2 is implemented all operations would receive planning to insure protection of resources and sustainability of resources. Thinning of forest stands will likely also create larger diameter, more valuable forest stands both in terms of economics and diversity. Approval of this alternative would allow funding to become available to keep forest inventories up to date and implement sound forest management practices that will benefit the forest.

VI. Consultations and Information Sources

Consultations:

Hoh Indian Tribal Council

Lance Gordon – BIA Forester, Olympic Peninsula Agency

Information Sources:

National Environmental Policy Act, 1970.

53 BIAM, Supp. 2, Release 4, Forest Management Planning.