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Fiscal Year 2008 Monitoring Report

Mt. Baker-Snoqualmie National Forest



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Cover: Forest Interdisciplinary Team members on monitoring field review at Mt. Baker Ski Area, August 18, 2009.

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Executive Summary

Annual Forest Plan monitoring provides an opportunity for leadership on the Mount Baker-Snoqualmie National Forest to adaptively manage natural resources by continually identifying accomplishments and challenges.

For the 2008 MBS Forest Plan Monitoring Report, an Interdisciplinary Team (ID Team) of specialists in the Forest Supervisor's Office convened and conducted a broad management review of each of the Forest's resource areas, and then conducted a field monitoring review of one program area: downhill skiing. The findings in this report are based upon the specialists' individual observations relative to the monitoring elements outlined in Chapter Five of the MBS Forest Plan, as well as collective observations of the specialists from field monitoring visits to the Crystal Mountain and Mount Baker ski areas.

Based on this monitoring, the ID Team offers the following findings and recommendations:

Findings

1. Implementation of six projects at two ski areas showed successful results both in meeting project purpose and need statements, and in complying with project mitigation measures, and, as a result, with Forest Plan standards and guidelines.
2. Most mitigation measures were followed, except for a few that either did not apply or may need further monitoring to determine applicability.
3. All projects were successful at mitigating for the spread of noxious weeds.
4. Monitoring field trip identified only minor exceptions.

Recommendations

1. Monitoring should begin the date that the NEPA decision is signed in order to complete the most comprehensive evaluation possible.
2. There should be an evaluation of prior monitoring results already available, such as the extensive monitoring record of revegetation and the ski area's annual monitoring reports.
3. If mitigation measures are not followed through on the ground, a written rationale should be added to the Project Record to explain departure from the specific measures.
4. Within the Project Record, mitigation measures should be site-specific to areas that need to be re-seeded after construction. General recommendations prove to be less useful.

5. Because the ski area permit areas are some of the most intensively surveyed acres of MBS lands, an extensive database is available for all affected resources. This should be utilized by the Forest as an analysis support tool.

Introduction

The Land and Resource Management Plan (Forest Plan) for the Mt. Baker-Snoqualmie (MBS) National Forest was approved by the Regional Forester on June 8, 1990. Four years later, on April 23, 1994, the Secretaries of the Departments of Agriculture and Interior signed the *Record of Decision for the Management of Habitat for late-Successional and Old-Growth Forest Related Species*, commonly referred to as the Northwest Forest Plan (NWFP). The NWFP amended the Forest Plan by establishing new land allocations and standards and guidelines.

This monitoring report provides an update to the Regional Forester, MBS Forest managers, and the public on Fiscal Year 2008 Forest Plan implementation activities. Monitoring is conducted on an annual basis, and is intended to identify:

- Whether Forest Plan objectives are being met, and
- How well Forest Plan objectives correspond with the management situation on the ground.

Monitoring is essential to adaptive management of the MBS's ecosystems and natural resources, because it allows resource managers to identify and respond to changing circumstances on the ground.

Monitoring Strategy

For the 2008 Monitoring Report, the MBS used an interdisciplinary approach. The Forest Leadership Team (FLT) established a Monitoring Interdisciplinary Team (ID Team) to conduct monitoring and develop this report. The team consisted of specialists from each resource area in the Forest Supervisor's Office. Additional input was provided by personnel on the Ranger Districts.

Chapter Five of the MBS Forest Plan outlines specific monitoring activities to be performed for each resource area. The ID Team divided these activities among themselves, answered each question, and collaboratively evaluated the results. The Forest Plan's original monitoring activities were developed 20 years ago and in some cases have become obsolete. Those activities that were identified in last year's monitoring report as obsolete were discontinued in this year's report.

To capture other monitoring activities that are now occurring but are not specifically listed in the Forest Plan, each responding specialist provided an analytical narrative answering a broad monitoring question on the status of their respective resource area.

In the tables below, for each resource area, the monitoring questions from the Forest Plan appear in the first column. The number in (parentheses) indicates the number of the corresponding monitoring question from Chapter V of the Forest Plan. The next column

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gives the monitoring method or activity. The third gives a summary of the results of that activity.

This year's monitoring report contains a new feature. The monitoring questions tables below have a new column titled "Supplemental Information" that gives citations and summaries of additional information supporting the monitoring findings.

One of the Forest Plan monitoring requirements calls for field review of a number of projects each year. Accordingly, because a number of ski area projects have been recently completed on the ground, the ID Team selected the downhill skiing program for monitoring. It conducted two field visits--to the Crystal Mountain and Mount Baker ski areas--to review project-level monitoring results. Findings from these two field trips are included in this report.

This report is divided into ten sections, by resource area. The resource areas are in three categories: biological resources, physical resources, and social and economic services.

Biological Resources

Botany

| Monitoring Question* | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|--|--|-------------------------------|--|
| 1. Botany. Research Natural Areas: Are RNA management objectives being met? (42) | Field visits | C) No monitoring done | Refer to narrative for Question 1 below |
| 2. Botany. What effects are proposed management actions having which have the potential to affect habitats of T, E, or S species? Are BEs being completed for all activities when Sensitive species are present? Is habitat managed to ensure that these species do not become threatened or endangered? (52*) | Completion of surveys and Biological Evaluations | A) Results acceptable | Documentation: 2008BotshotEval.pdf |
| 3. Botany. What is the status of occupied habitats of T, E, and S species? (53*) | Field visits | A) Results acceptable | Documentation: 2008BotshotEval.pdf, UWRareCare monitoring report for 2008 |
| 4. Botany. Are noxious weeds being controlled to the extent practical? Are small infestations of new noxious weeds being eradicated as quickly as possible? (54*) | Contract administration, field visits, documentation of new sites, completion of annual noxious weed NEPA, membership in several CWMAs | A) Results acceptable | Documentation: 2008BotshotEval.pdf, NRIS database records |

Botany Monitoring Question 1: Are Research Natural Area (RNA) management objectives being met?

Although management and monitoring of RNAs is warranted, potential stewardship and monitoring projects proposed over the past several years for RNAs have ranked low in

priority (rank of # 7 or 8 out of 9) in the Forest's program of work. Thus, this activity has remained "on hold," pending higher priority.

Note: The MBS Botany Program was started in June 1990, the same month the MBS Forest Plan was published. There were no monitoring questions for the Botany Program per se in Chapter 5 in the MBS Forest Plan. These three monitoring questions () come from the Standards and Guidelines for the Threatened and Endangered Species section, pages 4-127 through 4-128; and the Vegetation Management Section page 4-135 of the Forest Plan.*

Botany Monitoring Question 2: What effects are proposed management actions having which have the potential to affect habitats of Threatened, Endangered, or Sensitive (TES) species? Are Biological Evaluations (BEs) being completed for all activities when Sensitive species are present? Is habitat managed to ensure that these species do not become threatened or endangered?

The MBS has no threatened or endangered plant species; only sensitive species. Biological evaluations continue to be completed for every project in which there is ground or habitat disturbing activity -- at least 30 are done yearly Forest-wide. In 2008 the Forest's contractor for the proposed Sky-Beckler and Dan Creek Timber sales documented multiple new sites for a variety of species. For some of these, such as *Platanthera obtusata* (blunt-leaved orchid) and *Cimicifuga elata* (tall bugbane), mitigation in the project Environmental Assessment (EA) were adopted and will become contract specifications to avoid impacts to the species and the surrounding habitat. This is done in order to maintain the microclimatic conditions surrounding the known site. For other species (such as some of the new known sites for *Platanthera orbiculata* (round-leaf orchid) and *Usnea longissima* (beard lichen), the populations are sufficiently large that the loss of a few individuals will not lead to a trend toward listing.

The monitoring activity should be continued to ensure the MBS is adhering to its responsibilities towards Sensitive species and other rare and uncommon species.

Botany Monitoring Question 3: What is the status of occupied habitats of threatened, endangered, or sensitive species?

Once again this year, the MBS utilized skilled volunteers to complete monitoring of Sensitive plants on NFS lands through a partnership with the University of Washington's *Rare Care* Program. The volunteers visit between 4 and 10 of the Forest's TES sites per year. Monitoring results are documented in the national Natural Resources Information System (NRIS) – Threatened, Endangered, and Sensitive Plants (TESP) database. The Forest continues to enter new surveys and sightings into NRIS, to the degree possible.

The monitoring activity should continue, in order to ensure that the MBS is meeting the agency's responsibilities towards Sensitive and Survey and Manage species.

Botany Monitoring Question 4: Are noxious weeds being controlled to the extent practical? Are small infestations of new noxious weeds being eradicated as quickly as possible?

In 2008, the Forest met its Management Attainment Report (MAR) target of 66 acres of weeds treated. A total of 35 noxious weed sites were treated on the South Zone, and 48 sites on the North Zone, many of them re-visits. The treatments in 2006 and 2007 were highly effective in that, at several sites, the weeds have been reduced, to the extent that a brief visit to hand pull some stragglers may be all that is necessary in 2009.

In addition to sites treated by contractors, the Forest partners with several entities in weed management, including The Nature Conservancy, Mountains to Sound Greenway Trust (MTSGT), the State Department of Transportation (DOT), and especially the county weed boards. These entities have treated many sites at no cost to the Forest. A minimum of 12 sites were controlled on the North Zone. On the South Zone, King County Noxious Weed Control Board has treated 31 invasive knotweed sites, MTSGT has been controlling 30 sites in the Middle Fork Snoqualmie drainage, and the DOT has been controlling 9 infestations.

In 2008, Forest-wide analysis of changed conditions was completed to add two new chemicals as treatment method options. The Supplemental Information Report (SIR) was completed by a Regional Level ID team, and signed by the Forest Supervisor. The approach is consistent with procedures in the Forest Service Handbook (FSH) 1909.15 section 18 for addressing changed conditions, because the proposed action still fits within the existing decision (MBS 2005 EA). Specifically, clopyralid was added, as it is more effective than glyphosate on composites. On the MBS, this includes knapweeds, thistles, hawkweeds, daisies, and tansy. In addition, it is more environmentally friendly because it does not damage other desirable species such as grasses. The second addition was imazapyr, because in conjunction with glyphosate, it has proven to be more effective than glyphosate alone.

In FY 2008, the Forest, in partnership with King County Noxious Weed Control Board and MTSGT, decided to focus on inventory of more remote areas along trails in the Forest in the Middle Fork Snoqualmie River drainage. The three partners provided one-day training for a crew of volunteers who in turn donated a minimum of 135 volunteer hours. In addition, in 2008 the same three partners guided the completion of two heavy-duty interpretive signs to help teach hikers about invasive plants and how to prevent their spread. The signs were completed with Challenge Cost Share funds.

The forest should continue monitoring to determine when populations have been eradicated, when new populations occur, and to determine if THE MBS is meeting the goals and objectives of the 2005 Record of Decision (ROD) on invasive plants in Region 6.

Botany Program Accomplishments

In addition to sensitive plants and invasive weeds, the Forest's Botany Program has a third component: the Native Plant Materials Program. In 2008 the major accomplishments

pertain to management of big huckleberry and collection of native seed for future restoration projects.

- In FY08, the NEPA analysis, Management and Monitoring Plan, and baseline field monitoring for the Huckleberry Enhancement Project at Government Meadows were all completed. In August, the MBS established 30 permanent plots in areas slated for treatment and 30 plots in areas adjacent to the treatment units. In September, the MBS completed the baseline monitoring, which entailed collecting and measuring all the berries from the treatment and control plots as well as other relevant data. This effort was relied on 12 volunteers from Washington Native Plant Society's stewardship program and King Conservation District. The NEPA documents, management plan, and monitoring plan can all be accessed at <http://www.fs.fed.us/r6/mbs/projects/>. Click the link under "forest planning".
- In FY08, the MBS officially began its native seed program. It contracted out collection of 10 species of native seed from the Lower Sauk River watershed and the Upper White River watershed. The 10 species were collected and sent to the Bend Seed Extractory for cleaning and testing for purity and germination. In 2009, the pure live seed will be sent to a new nursery to grow out and increase the supply.

Ecology

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|--|---------------------------------|--|--|
| 1. Soil Productivity: Is soil productivity being maintained? (1) | End product review | C) No monitoring done D) Other | No monitoring to address potential site productivity was accomplished in 2008. Monitoring of actual site productivity was accomplished on Ecology Benchmark plots. |
| 2. Old-growth: What is the status of old-growth ecosystems? (14) | Identify acres and distribution | A) Results acceptable | Continue monitoring. Status of old-growth ecosystems is complex and dynamic, and is not represented by a single type or age. Monitoring of old-growth and replacement old-growth stands will document old-growth status and changes over time. |
| 3. What is the status of Mountain Hemlock suitability? (55) | Mountain Hemlock study plan | D) Other. Results and conclusions from the study resulted in action in the Forest Plan that removed the Mountain Hemlock Zone from the suitable land base due to failure to meet regeneration standards. | Mountain Hemlock study plan was suspended indefinitely when the MBS Forest Plan was approved and implemented. Further study and monitoring on stand development in the Mountain Hemlock Zone was shifted to the MBS Ecology Benchmark plots. |

Ecology Benchmark Plots Program

The Western Washington Area Ecology program serves the three National Forests of Western Washington, including the MBS. The Ecology Program monitors conditions on National Forest lands with a network of permanent benchmark plots.

The objectives of these plots are to establish benchmarks of species composition and stand conditions for the different plant associations and age classes on the landscape. There are about 600 of these permanent plots installed on the MBS, dating back to 1983. Many of these plots have been periodically re-measured to document conditions, trends, and changes over time, including species composition, stand conditions, successional patterns and development, as well as stand volume, growth, and mortality. This network of plots with repeated measurements provides data to address land management issues, problems, and questions such as thinning response, red alder growth and stand development, growth of young stands relative to culmination of mean annual increment and biomass accumulation ("Henderson wedge"), an old-growth restoration plan for the Finney Adaptive Management Area (AMA), and effects of climate change on vegetation such as species composition and abundance, growth, and mortality. Ongoing maintenance and re-measurements will continue to add value to the Forest and provide a scientific foundation for better land management decisions.

As part of this permanent plot network, monitoring plots in thinning treatments have been established to document stand responses to different treatments. Most plots were established prior to treatment to document pre-thinning stand conditions, and will be re-measured periodically to document post-treatment response. In 2008 ecologists completed the third measurement on monitoring plots installed in thinning sales in 1997-98. Sale areas included Hey Thin (7 plots), South Fork Thin (2 plots), and one plot each in Beckler Thin, Junction Thin, and 318 sale (Heybrook Ridge); and the fourth measurement for a plot in the Sky Forks Thin-Barclay Unit.

Ongoing measurements of these plots have revealed problems with the application of thinning treatments on certain types of sites. These include unplanned regeneration, primarily of western hemlock, but also of Douglas-fir and western redcedar, in the understory of some thinned stands.

Ecologists also continued the Silver Fir Spacing Trial, a long-term cooperative study with the Pacific Northwest Research Station, Olympia Forestry Sciences Laboratory (PNW Olympia lab), to document stand response to different stocking levels in the Silver Fir Zone. This study was initiated in 1987, and the fourth measurement of 24 plots at four installations was completed in 2008 (Iron Mountain--two sites, Cumberland Creek, and Crevice Creek). Six other benchmark plots were re-measured in 2008.

Ecology Monitoring Question 1: Is Soil Productivity being maintained?

This question can be interpreted to address the productivity potential of a site, as well as the actual production of a site. The National Forest Management Act of 1976 requires the Forest Service to ensure that management systems "will not produce substantial and

permanent impairment of the productivity of the land.” Land productivity can be defined as the “capacity of a given site to sustain plant growth.” Aspects of land productivity can be addressed by monitoring factors such as soil porosity and compaction, soil organic matter, soil nutrients, and other soil properties that affect potential site productivity. Monitoring and quantifying effects of soil disturbance associated with timber harvest and other management activities can provide information on activities that affect soil processes controlling forest health, productivity, and sustainability. No monitoring to address this question was accomplished in 2008. However, the actual productivity of the land is being monitored by re-measurement of the permanent ecology benchmark plots, which includes measurements of tree and stand growth, species composition and abundance, and changes in litter depth, standing dead trees, and down wood.

Ecology Monitoring Question 2: What is the status of old-growth ecosystems?

The acreage and distribution of old-growth ecosystems on the MBS did not measurably change in 2008. In 2008, there were no significant fires, blowdown, insect outbreaks, timber harvest, or stand disturbance events that would reduce the amount of old-growth on the Forest. Based on the fire history and stand year-of-origin data, 67% of the forested lands on the MBS are in old-growth forests, defined as stands at least 200 years of age. Of the total land area of the Forest, 54% is old-growth forest. The amount of old-growth forest by 5th-field watershed averaged 57% (using un-weighted average) and ranged from 32 to 81%. The amount of old-growth forests on the MBS is within the historic range of variability, and is consistent with the long term average of about two-thirds of the landscape in old-growth forest condition (Henderson 1992).

Ecology Monitoring Question 3: What is the status of Mountain Hemlock suitability?

In the 1980s, data from ecology plots showed that stands in the mountain hemlock zone had very slow regeneration and growth and very low productivity. The 1990 MBS Forest Plan removed most of the mountain hemlock zone from the commercial timber base, pending a study on regeneration and growth following harvest in these high elevation forest types. A network of plots for this study was established in the mountain hemlock zone, but these stands were never harvested, and the study was suspended indefinitely. However, the Ecology Program continues to monitor benchmark plots in the mountain hemlock zone, and data continue to show that these stands regenerate themselves very slowly and are very slow-growing.

Fisheries

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|---|---|-------------------------------|---|
| 1. Fish Standards & Guidelines (S&G) and Prescriptions: Are area prescriptions effective toward protecting habitat capability? (19) | Use FSH 2609.23, Hankin-Reeves stream survey methodology, stream channel stability evaluation | A) Results acceptable | Annual use of Hankin-Reeves is not appropriate for S&G effectiveness monitoring. The Aquatic and Riparian Effectiveness |

| | | | |
|---|---|-----------------------|--|
| | | | Monitoring Program (AREMP) conducts monitoring on large scale. |
| 2. Water Quality/Fish Habitat Capability: Are BMPs effective? (21) | Measure temperature, sediment, bedload, turbidity, and pH | D) Other | Project level Best Management Practices (BMP) monitoring should be accomplished as funding allows. |
| 3. Fish Habitat Restoration/Improvement: Are habitat restoration and enhancement projects producing predicted fish outputs? (22) | Calculate smolt production, estimate Wildlife & Fish User Days (WFUDs derived from anadromous and resident fish | C) No monitoring done | Discontinue metrics of smolt production and WFUDs. Smolt production is highly variable, and models do not accurately predict change in smolt production due to habitat management. WFUDs are not a useful measure. |
| 4. Cumulative Effects and Fish Habitat Capability: What are the cumulative cause/effect relationships between land disturbance and habitat capability? (23) | Collect and evaluate fish habitat trend data | A) Results acceptable | The Aquatic and Riparian Effectiveness Monitoring Program (AREMP) is designed to evaluate changes in condition over time within the Northwest Forest Plan area. |

Summary of Findings

The anadromous fish that utilize the Forest for spawning and rearing are under considerable stress from variable ocean conditions, intensive development around estuaries and along rivers, and rural land management activities. Management activities on the Forest have complied with Forest Plan standards and guidelines, and considerable effort has been made to reduce impacts to aquatic habitat across the Forest. However, fish populations continue to be stressed at various stages of their life cycle. Specifically, floods continue to damage or destroy redds and adversely affect over-wintering juveniles; stream temperatures are slow to recover, and climate change works against cooling temperatures; and off-Forest influences such as predation, harvest, and marine water quality conditions affect the populations.

The Aquatic and Riparian Effectiveness Monitoring Program (AREMP) for the Pacific Northwest Region continues to sample subwatersheds on the Mt. Baker-Snoqualmie National Forest and evaluate the condition of aquatic habitats within the area of the Northwest Forest Plan over larger spatial and temporal scales. To evaluate the effectiveness of the plan, the monitoring program determines whether key processes that maintain aquatic and riparian habitats are intact.

Annual use of Hankin-Reeves is no longer appropriate for S&G effectiveness monitoring. Research has shown that the Hankin and Reeves method as applied often suffers from high variability among observers, inconsistent application of protocols, and lack of repeatability. This causes difficulty in using observed stream attributes to detect change caused by management activity (Roper and Scarnecchia 1995; Poole G., C. Frissell and S. Ralph 1997; and Roper, Kershner, Archer, Henderson, and N. Bouwes 2002).

Vegetation Management

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|--|--|---|--------------------------|
| 1. Timber: What is the status of reforestation? (5) | Plantation survival examinations | B) No new results | Continue monitoring |
| 2. Timber: What is the status of timberland suitability? (6) | Management reviews, resource inventory | D) Other (see narrative on Wild Sky Wilderness) | Continue monitoring |
| 3. Timber: What is the size of the harvest area? (7) | EAs and TRI database, field reviews | A) Results acceptable | Continue monitoring |
| 4. Timber: What are the impacts of insects and disease, animal damage and air pollution to growing stock levels? (8) | Aerial surveys, field observation, stand exams | A) Results acceptable | Continue monitoring |
| 5. Timber: How many acres per management area are using various silvicultural practices? (11) | Number of acres harvested by silvicultural system or activity by management area | A) Results acceptable | Continue monitoring |
| 6. Timber: What is the distribution of timber harvest acres and volume? (12) | SILVA, TRACS, attainment reports, Stars | D) Other (see narrative on timber harvest) | Continue monitoring |

Timber Monitoring Question 1: What is the status of reforestation?

Reforestation survival and stocking exams are normally completed in the 1st, 3rd, and 5th years following planting or following timber harvest where natural regeneration has been prescribed. Since the implementation of the Northwest Forest Plan in 1994, the timber program on the Forest has consisted almost entirely of commercial thinning sales where reforestation is not needed after harvest.

No monitoring occurred for reforestation in FY 2008 because of the lack of reforestation activities.

The Forest should continue monitoring following planting to determine whether National Forest Management Act requirements are being met.

Timber Monitoring Question 2: What is the status of timberland suitability?

The suitable forest land identified as appropriate for timber production was reduced by approximately 1800 acres in FY 2008 with the establishment of the Wild Sky Wilderness on the Skykomish Ranger District. No other changes in suitability were identified in FY 2008.

The Forest should continue monitoring to provide accurate data for determining land base available for scheduled timber harvest.

Timber Monitoring Question 3: What is the size of the harvest area?

The maximum size of forest openings created by timber harvest allowed by the Forest Plan under normal conditions is 60 acres. Exceptions are permitted for natural catastrophic events such as fires, windstorms, or insect and disease attacks. The Forest Plan standards and guidelines for opening sizes were written in an era when clearcutting and other regeneration harvests were common. Since implementation of the Northwest Forest Plan in 1994, most of the timber harvest on the Forest has been commercial thinning.

No forest openings greater than 60 acres were created in FY 2008.

The Forest should continue monitoring to determine whether Forest Plan standards for size and dispersion of harvest units are met.

Timber Monitoring Question 4: What are the impacts of insects and disease, animal damage and air pollution to growing stock levels?

Aerial surveys to detect insect and disease activity are conducted each year. The surveys provide estimates of locations and amounts of damage caused by insects, disease, and other causes.

No major amounts of insect- or disease-caused damage were identified in FY 2008.

The Forest should continue monitoring to assess whether impacts of insects, disease, animal damage, and air pollution are affecting achievement of Forest Plan objectives.

Timber Monitoring Question 5: How many acres per management area are using various silvicultural practices?

Approximately 142 acres of commercial thinning were completed in FY 2008. All of those acres were in Matrix land allocations where timber harvest is permitted. Approximately 14 acres of windthrow salvage within Late Successional Reserve were sold in FY 2008, but not harvested until FY 2009. Under the Northwest Forest Plan, salvage within Late Successional Reserves is permitted only if the disturbed site is greater than 10 acres in size

and canopy closure has been reduced to less than 40 percent. Site evaluations indicated that the area where the salvage was sold met the criteria of a disturbed site greater than 10 acres in size and canopy closure reduced to less than 40 percent.

Approximately 436 acres of pre-commercial thinning were completed in FY 2008. All acres were within Matrix allocations where pre-commercial thinning is permitted.

The Forest should continue monitoring to determine whether silvicultural practices are consistent with management area direction and NWFP land allocations

Timber Monitoring Question 6: What is the distribution of timber harvest acres and volume?

The Forest sold approximately 2.15 million board feet of timber in FY 2008. An additional 10.94 million board feet were offered for sale but received no bids.

The Forest should continue monitoring to determine whether implementation of the Forest Plan is having the predicted results regarding timber harvest.

Wildlife

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|---|---|--|---|
| 1. Wildlife: What are population trends and habitat capability for T&E species? (15) | Review Washington Department of Fish & Wildlife, US Fish & Wildlife Service, and other T & E species census sources and habitat data | A) Results acceptable: owl C) No monitoring done: wolf, murrelet, grizzly | Continue. The Rainier Demographic Study Area (DSA) will document the expected continued decline of spotted owl occurrence on the Forest. |
| 2. Wildlife: What are population trends for old growth and snag dependent species? (16) | Monitor population levels in Spotted Owl Habitat Areas (SOHAs), survey management-required (MR) old growth acres for suitability, Washington Department of Fish & Wildlife data | C) No monitoring done | Discontinue SOHA monitoring and surveys of management-required old growth areas |
| 3. Wildlife: What are population trends for deer, elk, and mountain goat? (17) | Survey assigned big game habitat for continued suitability | A) Results acceptable: mountain goat C) No monitoring done: deer and elk | Continue to determine if mountain goat populations on the Forest will continue to increase towards historic levels. Development of a new elk habitat model for OR and WA will be initiated in 2009. |
| 4. Wildlife: What is the status of habitat | Field observation of habitat utilization | C) No monitoring done | Continue to acquire information on species |

| | | | |
|------------------------------|--|--|--|
| improvement efforts? (18) | | | utilization of habitat to answer if enhancement is effective |
|------------------------------|--|--|--|

Wildlife Monitoring Question 1: What are population trends and habitat capability for T&E species?

The bald eagle, peregrine falcon, gray wolf, and grizzly bear were wildlife species federally listed as threatened or endangered at the time of Forest Plan adoption. Federal listing of the northern spotted owl, marbled murrelet, and Canada lynx occurred after Plan adoption. In recent years, the bald eagle and peregrine falcon were de-listed, and the Forest is no longer considered within the range of the lynx. As of FY 2007, there are four wildlife species federally listed as threatened or endangered: northern spotted owl, marbled murrelet, gray wolf, and grizzly bear.

No monitoring has occurred for the marbled murrelet, grizzly bear, or gray wolf on the Forest in FY 2008.

Northern Spotted Owl

The year 2008 was the 16th year of the monitoring and banding of spotted owls on the Rainier Northern Spotted Owl Demography Study Area (Rainier DSA). Based on the annual report, of 60 spotted owl sites monitored, 20 were active (contained at least one owl). Of the active sites, 14 were pairs, with 8 pairs attempting nesting. Recent years have noticed a pattern of site abandonment by spotted owls on the Rainier DSA. Evidence seems to implicate the expansion of the barred owl into the range of spotted owls as the primary factor in the general decline in occupancy at spotted owl territories in the DSA.

The Forest should continue to support the Rainier DSA monitoring to document the expected continued decline of spotted owl occurrence on the Forest.

Bald Eagle (de-listed)

Wintering bald eagles were monitored along the Skagit River between Sedro-Woolley and Rockport for the 13th consecutive year. Eagles were counted each week from December through February, except for two weeks in December and one week in January when driving conditions were unsafe. A report analyzing bald eagle survey data from 2007 - 2011 will be produced in the spring of 2012.

Wildlife Monitoring Question 2: What are population trends for old growth and snag dependent species?

Upon adoption of the NWFP, the pileated woodpecker and marten networks were maintained in order to provide connectivity between large Late Successional Reserves (LSRs). The LSRs were expected to provide adequate habitat for spotted owl, pileated woodpeckers, and marten.

As a result of the major change in how pileated woodpeckers and marten are managed under the NWFP, changes are appropriate to this monitoring section during Forest Plan revision. The Forest should discontinue monitoring of Spotted Owl Habitat Areas (SOHAs) and surveying of management-required old growth areas. Late-Successional Reserves (LSRs) were established under the Northwest Forest Plan in 1994, and they protect habitat for old-growth and snag dependent species over a larger area than under the 1990 Forest Plan. Therefore, old growth and snag monitoring should focus on the LSRs at the regional scale.

Wildlife Monitoring Question 3: What are population trends for deer, elk, and mountain goat?

Deer and Elk

Regionally the consensus among elk biologists in Oregon and Washington is that Forest Service and Bureau of Land Management's elk management plans developed during the past couple decades, such as the MBS Forest Plan, are based on science that is outdated (Wisdom et al. 2007). Substantial research since 1990 has suggested that elk are limited by the nutritional adequacy of the habitat, including forage area, forage biomass and quality, and the effects of human disturbance on forage availability. Available forage quality and quantity is also thought to limit black-tailed deer populations in western Washington (Washington Department of Fish and Wildlife [WDFW] 2008). The development of an updated elk habitat model reflecting current science has been proposed by a group of elk researchers.

With the cessation of large-scale clearcutting brought by the Northwest Forest Plan, forage quality and populations have declined on the Forest for both deer and elk. Based on hunter statistics and annual census counts by WDFW, population trends of black-tailed deer appear to be declining. The availability of forage appears to be a contributing factor. As the forest matures, the availability of high quality forage often declines. In addition, overstocked managed timber stands have reduced understory forage.

The Forest should discontinue monitoring suitability of habitat until a habitat model reflecting current science is developed. Development of the new habitat model for Washington and Oregon is scheduled to begin in 2009.

Mountain Goat

Mountain goat populations in western Washington have declined for many decades despite reductions, or cessation, of hunting (WDFW, 1998). The Washington Department of Fish and Wildlife suggests that habitat changes resulting from fire suppression and disturbance of goats by recreationists may be important factors limiting population growth because the decline has been long and gradual (WDFW, 1998). However, unsustainable hunting could also cause long-term gradual decline in the mountain goat population. As it is a Management Indicator Species for the MBS, it is important to identify the cause of the

decline and, if possible, implement management actions that will reverse the population decline.

In 2008, Adam Wells, Phd candidate at the University of Idaho, began the first year of his evaluation on fine-scale habitat use patterns of mountain goats, the effects of trail-based recreation on mountain goat habitat use, and possible sites for mountain goat population augmentation or reintroduction based on habitat quality.

Mountain goat population surveys on Mount Baker occurred in 2008; see results, below. The population appears to have stabilized after many years of increase while the area was closed to hunting (1996 - 2006). The population figures presented have not been corrected using sightability factors developed by WDFW. However, because sightability of the Mount Baker population is high, the uncorrected data can be used to evaluate population trends. Based on historic information, it appears that the Mount Baker mountain goat population has recovered to population levels present in the early 1960s when the population was not hunted.

MOUNTAIN GOAT COUNTS, MT. BAKER POPULATION

| | Year | | | | |
|------------------------|------|------|------|------|------|
| | 2008 | 2007 | 2006 | 2005 | 2004 |
| Mountain goats sighted | 308 | 328 | 324 | 331 | 222 |

Mountain goat populations were surveyed from the ground in the Blanca Lake Basin on Skykomish Ranger District August 18 - 20, 2008. Visible survey areas were Columbia Peak, Monte Cristo Peak, Kyes Peak, Goblin Mountain, and Storm Ridge. One goat was sighted during the survey period, indicating low population numbers in this area. Sport hunting records identify many goats being harvested from these areas, suggesting that at one time a much larger mountain goat population existed here.

Because there are no known historic estimates of mountain goats on the Skykomish and Snoqualmie Ranger Districts, the relative population size of mountain goat populations was estimated using past hunting records compiled for continuous areas of mountain goat habitat. A report was produced to assist in planning and implementing aerial surveys to determine current population size and to assist in the identification of sites for population augmentation or reintroduction efforts.

The Forest should continue monitoring to determine if mountain goat populations on the Forest will continue to increase toward historic levels.

Wildlife Monitoring Question 4: What is the status of habitat improvement efforts?

Field observation of habitat use before and after implementation of habitat improvement projects can provide insight as to whether wildlife use has changed. Projects involving vegetative treatment often create forage for species such as deer and elk. Many projects contributing to habitat improvement for wildlife often do not involve manipulation of habitat. Decommissioning and closure of roads are common occurrences on the Forest that benefit wildlife through decreased human use.

The Forest should continue monitoring habitat improvement efforts involving vegetative treatment for predicted increased wildlife use.

Program Accomplishments

The Forest improved habitat on 4,320 acres of core area for the Nooksack Elk Herd, by reducing roads open to motorized traffic and enhancing the forage growth and improvement on those closed roadways.

Physical Resources

Roads

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|--|-----------------------------------|---|---|
| 1. Mass Wasting: Are management activities affecting the frequency and amount of mass wasting? (2) | Visual observation | A) Results acceptable | Monitoring conducted on Legacy Roads projects. Additional monitoring needed in future. |
| 2. Roads: How many miles of new road construction occurred? How many miles of roads are being decommissioned? (48) | Engineering reports, database TIS | D) Other. Variables in 1990 Forest Plan are not relevant in today's environment. TIS database replaced by the I-Web database. | Recommend discontinuing monitoring of new road construction. Begin monitoring of road reconstruction or improvements and decommissioning. |

Summary of Findings

Roads Monitoring Question 1: Are management activities affecting the frequency and amount of mass wasting?

Policy changes during the past 20 years have had a profound effect on how roads have been managed compared to 1990 when the thresholds of concern were formulated in the Forest Plan. In the past, the primary purpose for road construction, reconstruction, and maintenance on the Forest was to enable timber harvest. Reduced timber harvest levels have resulted in the need for significantly less miles of new road construction and reconstruction than anticipated in the 1990 Forest Plan. In fact, during FY 2008, there was no new road construction or road reconstruction or improvements from timber sales

occurring on the Forest. This falls far below the projected miles in the Forest Plan for Decade 2, of 11.1 miles of timber purchaser construction and 46.0 miles of timber purchaser road reconstruction. However, there was a total of 61.4 miles of other road improvements accomplished during FY 2008 with funding from road maintenance, timber sale, Legacy Roads, ERFO, Title II (Resource Advisory Council, RAC) and other non-Forest Service sources. These road improvements in some cases were intended to prevent mass failures and wasting of the roads.

***Roads Monitoring Question 2: How many miles of new road construction occurred?
How many miles of roads are being decommissioned?***

Timber revenue and road maintenance budgets have fallen significantly during the last 20 years. As result, the Forest Service and the Forest have not had the means or ability to maintain its entire road system. The agency must find an appropriate balance between the benefits of access to the National Forests and the costs of road-associated effects to ecosystem values. Providing road systems that are safe to the public, responsive to public needs, environmentally sound, affordable, and efficient to manage is among the agency's top priorities. In FY 2007 an assessment of the road system--Roads Analysis--was started to determine the optimum road system based upon recent funding levels to support current land management objectives on the Forest. After the ERFO activity of FY 2008, this effort is expected to resume in FY 2009.

"Right-sizing" the transportation system, or reducing the road mileage, is a goal that the Forest is trying to achieve to reduce system impacts to the environment. Right-sizing the transportation infrastructure means to achieve a sustainable system that provides for safe access for management of the National Forest, based upon current and projected funding levels. Implementation involves a number of road management actions. The main ones are: reduction of road maintenance levels, storm-proofing roads, upgrading drainage structures and river or stream crossings, road reconstruction and upgrades, road storage, road decommissioning, alternative transportation, and access and travel management planning.

The miles of road suitable for passenger cars have been reduced to 1038.2 miles so far, versus the 1204 miles projected for Decade 2 in the 1990 Forest Plan. The miles of road suitable for high clearance vehicles have been reduced so far to 936.3 miles, versus the 1719 miles projected for Decade 2. Additional reductions in the future will need to continue after the Roads Analysis is completed and as watershed analyses and Access Travel Management (ATM) plans are completed and management decisions are made.

In the future, adequate funding for completing the necessary planning and implementation for road closures, decommissioning, and conversion to trails will be a challenge. But programs such as Legacy Roads and continuing to seek new partnerships and grant opportunities will help accomplish those objectives.

Program Accomplishments

The table below shows the Forest's current road system and road related accomplishments for the year.

STATUS OF THE FOREST'S TRANSPORTATION SYSTEM – FY 2008

Road Construction, Reconstruction, Improvements, and Decommissioning

| | |
|---|------|
| Miles of Road Constructed | 0.1 |
| Miles of Road Reconstructed or Improved | 61.4 |
| Miles of Road Decommissioned | 0.0 |

Bridge Replacements

| | |
|--------------------------------|---|
| Bridges Replaced | 2 |
| Culverts Replaced with Bridges | 1 |

Existing Road System

| | |
|--|--------|
| Miles of Road Suitable for Passenger Cars | 1038.2 |
| Miles of Road Suitable for High Clearance Vehicles | 936.3 |
| Miles of Closed Road or Roads in "Storage" | 549.1 |
| Total Miles of Road | 2568.6 |

Roads Maintained

| | |
|--|-------|
| Miles of Road Suitable for Passenger Cars | 611.5 |
| Miles of Road Suitable for High Clearance Vehicles | 15.6 |
| Total Miles of Road Maintained | 627.1 |

Note that the miles listed above are taken from internal accomplishment reports and may not reflect actual mileages on the ground. For example, roads decommissioned with outside funding sources may not show up in the accomplishment reports. Also, roads converted to trails may not show up as miles of road decommissioned in the reports. Beginning in FY 2009, the Region is implementing accomplishment reporting to be tracked in the I-Web Infrastructure (INFRA) database, which will more accurately reflect actual mileages.

Watersheds

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|------------------------------|---|--|---|
| 1. Watershed Rehabilitation: | Visual observations and transects in project area | A) Results acceptable. See narrative on Finney | Continue monitoring. Project monitoring |

| | | | |
|---|---|--|--|
| Achieving expected results? (3) | | and Day Creek Instream projects, as well as Erosion Control projects. | provides valuable information in assessing the effectiveness of treatments |
| 2. Watershed S&Gs and Prescription: Are S&Gs effective? (4) | Visual observations, sampling of one or more key water parameters, photos | A) Results acceptable. Forest-wide water temperature monitoring is on-going. | Continue monitoring. Transition to BMP effectiveness monitoring to comply with national direction |
| 3. Cumulative Effects and Watershed Condition: What is the in-channel condition of the Forest's watersheds? (4) | Assess management history, unstable soils, stability rating, fish habitat capability, climatic conditions, downstream impacts | A) Results acceptable. See narrative on stream surveys. AREMP continues Regional scale effectiveness monitoring of the Forest Plan implementation. | Continue at designated sites for trend monitoring. Establish a strategy for long term since results will be long term. |
| 4. Water: What is the condition of stream discharge/flow? (25) | Streamflow gauges, staff gauges, or other | C) No monitoring done | This item is being discontinued at the 2008 recommendation of Forest hydrologist; see FY 2007 Monitoring Report. |

Summary of Findings

Watershed monitoring is intended to determine if watershed conditions on the Forest are being maintained such that watershed processes and functions are preventing watersheds from sustaining irreparable damage from management activities and climatic events. The Forest Plan watershed cumulative effects analysis made a determination of “acceptable” or “unacceptable” condition, based on the amount of watershed disturbance and upslope and channel conditions. Watershed conditions have been reviewed in watershed analyses since 1994 when the Northwest Forest Plan amended the 1990 Forest Plan [*Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl: Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl* (USDA and USDI 1994)]. For individual watershed conditions, refer to the specific watershed analysis. More detailed monitoring of watershed rehabilitation work is done on a project scale, and documentation is available at the respective District office.

Water Temperature: Finney Creek

Stream temperature data were collected and analyzed in 2008 as part of two instream restoration project areas on Finney Creek, including the Upper and Lower Finney Creek projects. Large wood structures were constructed in Finney Creek beginning in 2000 to narrow and deepen the channel with the goal of reducing stream temperatures. A statistically significant drop of one degree Fahrenheit in summer daily maximum stream temperature has been observed since 2002, which is beneficial to fish habitat. Cross-section data collected between 1999 and 2008 has been inconclusive. Vegetation has encroached substantially over the channel from its margins. Unfortunately a densitometer was not part of the earlier monitoring, limiting evaluation of effects of canopy closure.

Water Temperature: Day Creek

Stream temperature monitoring began in 2008 in preparation for the Day Creek Instream Restoration Project, which will be implemented in 2010 in conjunction with the Skagit Fisheries Enhancement Group. This project will include construction of large wood structures in an effort to narrow and deepen the channel with the goal of reducing stream temperatures and increasing channel complexity.

Photo Points: Erosion Control Projects

In 2008, the Skagit Conservation District partnered with USFS to reduce failures and erosion affecting the Cascade River and Sibley and Marble Creeks in the Cascade Roads Erosion Control Project, as well as in Finney Creek and the Skagit River through the Finney Creek Roads Erosion Control Project. These projects replaced culverts, cleaned and re-established ditches, stabilized fill areas, and decommissioned roads on approximately 20.7 miles of road. These projects provide benefits to Chinook salmon, Dolly Varden, coho, chum, pink, sea run and resident populations of cutthroat and rainbow (steelhead). Before and after photo points were established on these projects to assess and document the effectiveness of erosion control treatments.

Stream Surveys

Stream surveys are conducted each year on a limited number of stream miles using the Region Six Aquatic Survey protocols to provide a general characterization of aquatic habitat conditions (Aquatic Inventory) and the presence of aquatic species (Aquatic Biota). In 2008, a field crew from the North Cascades National Park surveyed 8 miles of streams for the Forest, and an additional 35.4 miles of stream were surveyed by an outside contractor. The stream surveys were entered into the Regional database and error checked. The stream survey program is ongoing, and data are stored and available for analysis when proposed projects require.

Social and Economic Resources

Heritage

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|---|---|-------------------------------|--|
| 1. Cultural: What is the level of documentation? (34) | Review data components in Cultural Resource Reconnaissance Reports, site inventory records, evaluation reports, Cultural Resource Management Plans, cost figures from field units | D) Other | The USFS accounting system (INFRA) is used for reporting; data are also summarized in a report to the State Historic Preservation Officer regarding actions taken under the terms of the Programmatic Agreement. Data on associated costs is incomplete. |
| 2. Cultural: What is the | Inspection visits | D) Other | This is a required |

| | | | |
|--|--|--|--|
| status of protection of historical resources? (35) | | | measure of accomplishment for the Heritage Program (FSH 6509.11k). |
|--|--|--|--|

Summary of Findings

Sixty-six proposed projects were reviewed under the terms of the *Programmatic Agreement Regarding Cultural Resources Management on National Forests in the State of Washington*, or the *Programmatic Agreement for Management of Recreation Residences*. This includes 18 projects for Emergency Repair of Federally Owned Roads (ERFO), and 31 projects that were initiated by other agencies or individuals for uses of National Forest System Lands (e.g. special use permits, road easements). Projects encompassed an estimated 3,680 acres, of which approximately 1,015 acres were surveyed for cultural resources.

The Forest completed evaluations to determine the eligibility for the National Register of Historic Places for four archaeological sites or isolates, and 14 buildings. Five projects were documented as having “no adverse effect” on significant resources. One project was determined to have an adverse effect on significant historic resources--the Forest Service conveyed facilities and lands, including two significant historic buildings, in Skykomish, Washington, under the authority of the Forest Service Facility Realignment and Enhancement Act.

The Forest implemented some projects for which documentation of cultural resource compliance was lacking, and some were implemented without adherence to mitigation measures or management requirements. However, there were no reported direct or indirect effects to cultural resources as a result.

The Forest Service has an agency standard for completing condition assessments (site monitoring visits) of certain cultural resources at least every five years: “Priority Heritage Assets (PHA) are managed to standard if there is no deferred maintenance, and if the asset is monitored every 5 years.” PHAs are those heritage resources that meet certain criteria regarding their significance and management priority (FSH 6509). The Forest’s Heritage Inventory database listed 33 PHAs at the end of 2008. Eight are reported as managed to standard. (The Stevens Pass Historic District, a District composed of several historical features, was previously reported as several sites, but is now reported as one “site” managed to standard.)

In addition to PHAs, heritage resources also may include historical buildings that serve another staff area (for example, Ranger Station buildings), artifact and history collections, and other cultural resources that do not meet the definition of PHAs. The Forest has responsibilities for managing and preserving these resources as well, and while some are accounted for by other functions such as Facilities (Engineering), the condition of others is currently not documented, and site monitoring visits are limited by staff and resource funding.

Program Accomplishments

A restoration and stabilization project was completed for the Douglas Fir Picnic Shelter (Mt. Baker Ranger District), originally built by the Civilian Conservation Corps. The Darrington Ranger District continued its partnership with Darrington High School to restore a CCC Residence on the compound. The Forest also has two strong heritage site stewardship programs (Darrington and Skykomish Ranger Districts) to monitor historical sites.

Lands

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|---|--|--|--------------------------|
| 1. Lands: What are the effects of N.F. management on lands, resources, and communities adjacent to NFS lands? (44) | Meet with cost share cooperators, city and county officials. Conduct staff management review. | A) Results acceptable: 1. Sale of Skykomish compound & residences 2. Annual meetings with DNR and Counties on road cost share and repair projects. | |
| 2. Lands: What is the status of adjacent land management by other government agencies? (45) | Meetings with federal, State, and local land management agencies | D) Other: 1. Project-specific coordination ongoing with State and County government highway departments | |
| 3. Lands: What are the effects of NFS management of utility corridors on transmission needs and other resource values? (46) | Review existing capacity and plans for upgrade with utility officials. Management review of effects. | C) No monitoring done: 1. New utility corridor identified in Federal Programmatic EIS, but no decision made to implement. 2. Vegetation management plans are implemented for Bonneville Power Administration (BPA) and Puget Sound Energy (PSE) corridors. | |

Lands Monitoring Question 1: What are the effects of NF management on lands, resources, and communities adjacent to NFS lands?

Selling the Skykomish work center compound and residences to the Town of Skykomish resulted in direct benefits to the local community by providing housing and office space to the town, while reducing the agency's building maintenance burden, and without affecting the District's management capabilities. (The District retained ownership of the co-ed crew bunkhouse.)

Lands Monitoring Question 2: What is the status of adjacent land management by other government agencies?

No monitoring of other entities' adjacent land management activities is done formally, other than when Forest staff are notified of their projects. Typically the Forest is notified when the State Department of Natural Resources (DNR) or a private timber company plans a timber sale and requires access to their land, either for hauling timber or aggregate via the existing Forest road system, or when they have a need to construct or reconstruct access road(s) across NF land.

On-the-ground monitoring of the Forest boundary has not been conducted in recent years, due to lack of staff, so the agency does not have a good indication of any trespass occurring, other than when an incident is brought to its attention. A backlog remains of minor encroachments on NFS lands by residential lot owners. However, three encroachments recently have been resolved in Silverton along the Mountain Loop Highway.

A cooperative boundary survey with the DNR is ongoing. A challenge cost share agreement between the Forest and DNR for a cooperative boundary survey is in place.

The Forest has developed good working relationships with the Washington State Department of Transportation (WSDOT) and County highway departments on several highway improvement projects that traverse NFS land, to ensure that National Forest resources are protected and environmental and Forest Plan standards are met. Forest staff continue to coordinate with WSDOT on highway projects and with Snohomish County on their maintenance and repair work on the Mountain Loop Highway and the Index-Galena Road, damaged by 2003 and 2006 washouts. A road maintenance agreement with Snohomish County is in place for the County to maintain the Beckler River Road 65 for providing safe access to private recreational inholdings. A supplemental agreement is pending to authorize the County to maintain Forest Road 22, the Gold Mountain Road, near Darrington.

Lands Monitoring Question 3: What are the effects of NFS management of utility corridors on transmission needs and other resource values?

Vegetation management plans are established with Puget Sound Energy and the Bonneville Power Administration for managing native vegetation and controlling noxious weeds under their major transmission corridors that cross the Snoqualmie and Skykomish Ranger Districts. Vegetation management is compatible with the utilities' transmission needs and Forest Plan resource objectives. Forest Lands staff continue to coordinate with PSE and BPA on repair and maintenance projects.

The Forest coordinated with local landowners and mining claimants up the Middle Fork Snoqualmie Road on access to their property by issuing keys to easement holders and miners for the new Dingford gate lock after Facilities completed the gate repair, thus resolving this access issue.

Tribal Consultation

| Monitoring Question | Monitoring Activity | Summary of Monitoring Results | Supplemental Information |
|---|--|-------------------------------|---|
| 1. American Indian Government-to-Government Coordination (33) | Review meeting notes, project files documenting consultation with Tribes | A) Results acceptable | Project files include NEPA Project Records and NHPA compliance documentation. Project meeting notes are filed with project files. |

Summary of Monitoring Activities

This monitoring requirement addresses the consistency of Forest programs and activities with regulations and policies regarding American Indian Tribal Government relations. Regulations and policies have broadened and expanded since the 1990 Forest Plan, and are now integrated into a number of Forest programs (FSM 1563).

The Forest regularly consults with western Washington federally recognized Tribes: these are legal successors to the Tribes and bands that were signatory to the Treaties of Medicine Creek (10 Stat. 1132) and Point Elliott (12 Stat. 927), and Tribes recognized by Executive Order or by the Department of the Interior's acknowledgement process. In addition, the Forest involves and consults with Yakama Indian Tribe and the Colville Confederated Tribes when project proposals may have effects east of the Cascade Crest. For example, The Summit at Snoqualmie Ski Area is located in Kittitas County, but the Ski Area Special Use Permit is administered by the Mt. Baker-Snoqualmie National Forest. In addition, consultation occurs when projects may affect Tribal usual and accustomed fishing grounds adjudicated in U.S. v. Washington.

National Environmental Policy Act (NEPA) Project Records developed on a project-specific scale include documentation of Government-to-Government consultation for projects undergoing NEPA analysis. The files developed under Section 106 of the National Historic Preservation Act also include documentation that potentially affected Tribes have been consulted. In FY 2008, there were no project decisions appealed by Tribal governments.

Program Accomplishments

Annual Government-to-Government meetings are held with many of the Forest's seven Tribes to review the Forest's proposed actions, as well as to address and discuss Tribal interests. Examples are: the exercise of Treaty Rights on National Forest System lands, road management and access, and cultural and sacred sites and activities. Additionally, phone calls, meetings, and field visits with Forest Service and Tribal technical specialists (wildlife and fisheries biologists) were on-going to facilitate regular communication.

In November 2007, the Forest Supervisor and the Chairman of the Tulalip Tribes signed a Memorandum of Agreement (MOA). A work plan was developed based on priorities for implementing the MOA, and a technical committee was formed including both Forest

Service and Tribal specialists to develop recommendations regarding cultural plant availability and gathering activities on National Forest System lands.

In early FY 2008, the Sauk-Suiattle Indian Tribe acquired land and improvements from the Forest Service, conveyed under the authority of the Forest Service Facilities Enhancement and Realignment Act. The Forest Supervisor also signed a MOA with the Sauk-Suiattle Indian Tribe in FY 2008 with a commitment to work together toward specified goals.

The Snoqualmie Ranger District also coordinated closely with the Muckleshoot Indian Tribe to develop a project for enhancing the production of huckleberries. Muckleshoot Tribal Elders had approached the District with concerns over declining huckleberry yields in areas north of Mount Rainier. As a result, the Forest analyzed and in early October 2008 made the decision to implement the Huckleberry Enhancement Project. Implementation will be ongoing over several years.

FOREST SERVICE MISSION

The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. The Agency manages 193 million acres of public land, provides assistance to State and private landowners, and maintains the largest forestry research organization in the world.

Field Review Findings: Crystal Mountain Ski Area and Mt. Baker Ski Area

The Forest Interdisciplinary (ID) team conducted two field trips in FY 2008 to monitor and evaluate Forest Plan implementation and effectiveness. On October 30, 2008, the ID Team conducted a monitoring field tour of Crystal Mountain Ski Area to monitor the effectiveness of mitigation measures, the implementation of three projects, and how well projects met the purpose and need of the project. On August 18, 2009, the ID Team toured the Mt. Baker Ski Area for the same purpose.

Background

In 1989, the Mt. Baker Ski Area prepared a Master Development Plan for future direction of the facility. In 1990, the Forest Service completed an Environmental Assessment (EA) for the proposal and approved the Mt. Baker Ski Area Master Development Plan. The ski area has been implementing it in phases (Phases I, II, III, IV, etc.) since that time, with the Forest Service issuing a Decision Memo for each specific project, and approving categorical exclusion from further documentation in an EIS or EA. Of that series of projects, the ID Team selected three to review on the ground.

In August 2004, the Forest Service completed the Final Environmental Impact Statement and signed the Record of Decision for the Crystal Mountain Master Development Plan. Within the MDP, three projects were chosen by the ID Team to evaluate for their implementation, their ability to meet the purpose and need, and the effectiveness of mitigation measures during and after implementation.

Crystal Mountain Ski Area

In 2002, the Crystal Mountain Ski Area implemented a replacement of the Campbell Basin Facility, an antiquated, mid-mountain skier building that was replaced to improve service and meet the aesthetic quality of the rest of the Ski area. Campbell Basin Facility construction took place from 2002 to 2004.

In August 2006, the ski area conducted a number of restoration projects on the Deer Fly advanced ski run near the middle of the ski area, which were meant to restore and revegetate old roads with unnatural drainage patterns. One specific project, Iceberg Gulch, was closely monitored and evaluated to track progress of revegetation and success of project implementation. Deer Fly restoration projects took place from August 2006 to late September 2006.

In July 2008, the ski area also implemented the construction of the Green Valley sewage drainfield, near the upper center of the ski area, an upgrade of the existing system in place. The construction of the new drainfield occurred from July to October 2008.

Mt. Baker Ski Area

In August 2001, the Mt. Baker Ski Area implemented an upgrade of chairlifts 1, 2, 3, 4, 5, and 6 to improve skier visitor lift services while reducing chairlift maintenance costs. The chairlift upgrades were part of Phase III and IV of the Master Plan completed in 1989. Chairlift upgrades were completed from 2001 to 2008.

In July 2007 the ski area implemented replacement of an aged rope tow (Heather Tow) with a new handle tow at the same location. The building of two small towers attached to concrete footings occurred on top of previously disturbed soil. Replacement was deemed necessary to meet safety requirements and modernize an old rope tow due to chronic break-downs. The new handle tow has been in use at the ski area since 2007.

In April 2007 the ski area constructed a one-acre helipad at the north end of the White Salmon Base Lodge Parking Lot to provide for improved safety of Forest users and emergency response personnel when prompt transportation to hospital facilities is required. Construction of the helipad involved felling and removing approximately 14 snags and 72 live trees, drilling and blasting rock from the ridge, and installing four culverts on road 3080.012. Helipad construction was completed in 2007.

Monitoring Strategy

At the Crystal Mountain Ski Area, the ID Team selected three sites for monitoring: the Campbell Basin Facility, Iceberg Gulch in the Deer Fly Restoration Project, and Green Valley drainfield. The ID Team selected three sites for monitoring at the Mt. Baker Ski Area: Chair Upgrades (at chairs 1, 2, 3, 4, 5, and 6), Handle Tow project, and Helipad project at White Salmon Lodge. These sites were chosen to allow for monitoring in as many resource areas as possible on each ski area.

During each field trip, ID Team members considered and answered five monitoring questions:

- 1. How well did the project meet its purpose and need?*
- 2. Were the project design and mitigation measures implemented?*
- 3. Were the design and mitigation measures effective in meeting their objectives?*
- 4. Were the project environmental effects as disclosed in the NEPA document?*
- 5. Were the project environmental effects in compliance with the Forest Plan as amended?*

Monitoring Findings

Crystal Mountain Ski Area

In summary, after reviewing the project sites at the Crystal Mountain Ski Area, the ID Team concluded that project implementation fully met the purpose and need of each of the three

projects. The Campbell Basin facility was replaced with a newer, more modern facility, the road and drainage patterns were adjusted, and the sewage drainfield was upgraded to a newer system.

While mitigation measures were met during the construction and implementation of these projects, monitoring shows that some of the mitigation needs to be clarified and revisited after this evaluation, including the non-native weeds measures.

For the Crystal Mountain Ski Area, the Campbell Basin Facility project generated minimal concerns. The Stormwater Pollution Prevention Plans (SWPPs) were prepared and implemented with success. The project did salvage and return topsoil to the ground, as mitigation required. Seeding and mulching were all completed, although not completely to MDP specifications, as non-native clover has seeded in and occupies a portion of the grassed area, and numerous bare spots still appear on slopes below the restaurant despite seeding and straw mulching. Likewise, the seeding mix used was not completely native or specifically MBS Forest seedmix "D," posing a threat to native plant species. Therefore, measures should be taken to revegetate these areas again with the correct seedmix.

The objective of the Deer Fly Restoration Projects was to restore damaged road and unnatural drainage pattern and revegetate project area slope surface. Iceberg Gulch was monitored for this field trip and showed great success after several rough years. The Deer Fly Area looks significantly improved since the last 2007 monitoring visit, although seedlings must still be transplanted to the site. The Green Valley drainfield has remaining bare spots, with ruts and loose surface soil that are vulnerable to further erosion. Further mitigation is needed to keep the mulch from blowing off these sites. Thus, to the extent that mitigation measures were followed for these three areas, measures were effective. Continued reseeding and revegetation must occur in order to ensure full success from these measures.

The environmental effects as disclosed in the Environmental Impact Statement for the ski area MDP occurred either as projected in the documents, or as subsequently expected due to adjustments in implementation practices. The project design that was approved for the Campbell Basin Facility called for a two-story restaurant building of 18,000 square feet. Further thought led to moving the ski patrol facility out to a separate building, thus redesigning it into a one-story 12,000 square foot restaurant building. This change decreased environmental impacts, especially visual, and was a substantial improvement over anticipated. Deer Fly Restoration Project environmental effects were the same as discussed in the documented effects analysis. The actual effects of the Green Valley Drainfield were also less than predicted in the environmental analysis because the ski area decided for practical reasons to dig the pipeline ditch by hand rather than by motorized equipment. The result was considerably less surface disturbance than expected.

Mt. Baker Ski Area

After review of the project sites, the ID Team agreed that implementation of the Mt. Baker Ski Area projects was substantially successful. Specifically, it fully met the purpose and need of the three categorical exclusions (two Decision Memos and one CE checklist). Visitor

safety and services were improved, maintenance costs were reduced, and the projects were completed within timeframe and budget. Most mitigation measures were followed, except for a few that either did not apply or may need further monitoring to determine applicability. Specifically, the mitigation measure calling for reseeding at Mid Station, Chair 1 was not implemented, while the Heather Rope Tow Replacement Project did not call for any mitigation measures at all. The Helipad Project failed to install four culverts on road 3080.012, and seed mix was not applied to bare slopes along the edge of the helipad to avoid the spread of noxious weeds. Other than the helipad slopes, all projects were successful at mitigating for the spread of noxious weeds. Monitoring field trip concluded that project results were as expected with only minor exceptions: helipad erosion and sedimentation control, Chair 1 mid-station reseeding and revegetation, and Chair 4 wetland partial encroachment, as noted below.

There were no effects from the Helipad site at White Salmon Lodge or the Heather Rope Tow Replacement outside those anticipated in the Decision Memo and CE checklist, respectively. Those NEPA documents appear adequate for the routine nature of the projects. The Chair Upgrades project presented a concern at Chair 1, where project construction and implementation encroached on a small wetland in the vicinity of the base of the bottom terminal, contrary to impacts expected and disclosed in the project's Decision Memo.

Conclusion & Recommendations

The first general recommendation for monitoring MBS Forest projects is that monitoring should **begin at the time the NEPA decision is signed** in order to complete the most comprehensive evaluation possible. Late-starting monitoring may not provide an opportunity to remedy problems.

Second, there should also be an **evaluation of prior monitoring results already available**, such as the extensive monitoring record of revegetation and the ski area's annual monitoring results, documented in its annual monitoring reports.

Third, if mitigation measures are not followed through on the ground, **a written rationale should be documented in the Project Record** to explain any departure from those measures. Along these lines, within the Project Record, **mitigation measures should be site specific to areas** that need to be reseeded after construction. A general recommendation proves to be less useful than a recommendation to meet specific written criteria.

Because the permit areas are some of the most intensively surveyed acres of MBS lands, due to extensive inventories by the USFS, contractors, and others as part of the ski area master planning process, an extensive database is available for all affected resources. The ID Team recommends that this should be utilized by the Forest as an analysis support tool.

Crystal Mountain Ski Area. Recommendations specific to Crystal Mountain Ski Area include reseeding around the Campbell Basin Facility with native seedmix or MBS Forest recommended seedmix "D" (per Potash and Aubry 1997, as amended). The top of the

downhill ski run between chair lifts 17 and 18 below Campbell Basin needs to be reseeded and re-mulched with weed-free materials. The bare area begins at the chairlift and heads north about 200 feet. Crystal Mountain Inc. needs to submit documentation of the source of these materials to the USFS. While the Campbell Basin drainfield area looks better than in 2007, a small pit still needs attention so it drains properly, and reseeding is recommended above the pit. Erosion control mats should be checked frequently at the Deer Fly project area to ensure that revegetation mitigation measures continue successfully. The downcutting in the constructed drainage south of Miners Basin lift needs to be addressed further by the ski area, and potentially monitored further by the MBS Forest personnel. Some dirt roads up through the ski area need maintenance, but more specific monitoring is required to identify which roads need this treatment. Maintenance is also needed on the inside ditches on out-sloped roads within the ski area.

Mt. Baker Ski Area. Recommendations specific to Mt. Baker Ski Area include following up with the ski area to determine if the mid station and top of Chair 1 should be reseeded or allowed to have natural revegetation. Follow-up should occur after implementation is complete. The ID Team should also determine if the four culverts in road 3080.012 at the Helipad project area should be installed, what mitigation measures are necessary if installation is required, and what criteria should govern possible treatment of road 3080.012. If the road will be used for motorized or ski access, mitigation measures must be included in the construction of the four culverts. If the road will not be used, the slope should be stabilized. It also must be determined whether a Stormwater Pollution Prevention Plan (SWPPP) is necessary for road 3080.012. Water bars are recommended for the old unused road that leads to the bottom of Chair 2. The degraded state of the road was a concern for ID Team members, especially with its proximity to a stream.

Conclusion. Overall, the implementation of the three projects at both ski areas showed successful results, both in meeting the purpose and need statements, and in complying with project mitigation measures and, as a result, with Forest Plan standards and guidelines. Most mitigation measures were followed, except for a few that either did not apply or may need further monitoring to determine applicability. All projects were successful at mitigating for the spread of noxious weeds. The monitoring field trip identified only minor exceptions as described above.