United States
Department of
Agriculture

Forest Service

Intermountain Region

September 2010

Boise National Forest Land & Resource Management Plan

FYs 2008 and 2009 Monitoring and Evaluation Report

Youth Conservation Corps (YCC) crews help carry out important projects that help implement the Forest Plan, such as rehabilitating user-created OHV trails, collecting native grass seed, and replacing trail bridges. They also gain valuable work experience and information about Forest resources and environmental processes.

TABLE OF CONTENTS

ATTACHMENTS

LIST OF TABLES AND FIGURES

Tables

Figures

BOISE NATIONAL FOREST
LAND AND RESOURCE MANAGEMENT PLAN

FYs 2008 - 2009 MONITORING AND EVALUATION REPORT

September 2010

I. INTRODUCTION

The Boise National Forest (NF) is located in west central Idaho (Figure 1), north and east of the capital city of Boise. Parts of the Forest are located in Ada, Boise, Elmore, Gem, and Valley Counties. The Forest borders the Sawtooth and Salmon-Challis NFs on the east, and the Payette NF on the north. The Supervisor's Office is located in Boise. The Forest is comprised of five ranger districts—Mountain Home, Idaho City, Lowman, Emmett, and Cascade—with district offices located in each of those towns. The Forest is an administrative unit of the Intermountain Region (Region 4) of the Forest Service, U.S. Department of Agriculture.

In July 2003, the Boise NF completed the revision of their 1990 Land and Resource Management Plan (i.e., Forest Plan). The Record of Decision for the 2003 Forest Plan was signed July 25, 2003. Implementation of the 2003 Forest Plan began September 2003. The revised Forest Plan defines a strategy for the next 10-15 years that manages Forest resources to attain a set of desired resource and social and economic conditions by emphasizing the maintenance or restoration of watershed conditions, species viability, terrestrial and aquatic habitats, and healthy, functioning ecosystems.

The 2003 Forest Plan includes direction for the management of National Forest System (NFS) lands within the administrative boundary of the Boise NF. This includes two areas within the proclaimed boundaries of the Payette and the Sawtooth NFs (Figure 2). This plan does not include direction for NFS lands within the Boise NF proclaimed boundary that are not within its administrative boundary. There are three areas within the proclaimed boundaries of the Boise NF that are administered by adjacent National Forests (Figure 2). Management direction for these areas can be found within the Forest Plan prepared by each of those Forests.

One of the lessons learned from experience implementing original Forest Plans is that plans need to be dynamic to account for changed resource conditions such as large scale wildfire or listing of additional species under the Endangered Species Act, new information and science such as taking a systems approach, and changed regulation and policies such as the roads analysis policy. To accomplish this, the 2003 Forest Plan has embraced the principles of adaptive management.

I-1. Purpose of Forest Plan Monitoring and Evaluation

Monitoring and evaluation are critical to adaptive management. Monitoring and evaluation under the 2003 Forest Plan provide the knowledge and information to keep the Forest Plan viable. Monitoring and evaluation are intended to tell us how Forest Plan decisions have been implemented, how effective the implementation has proved to be in accomplishing desired outcomes, and how valid our assumptions were that led us to decide on the management strategy detailed in the Forest Plan.

Figure 1. Location Map – Boise National Forest

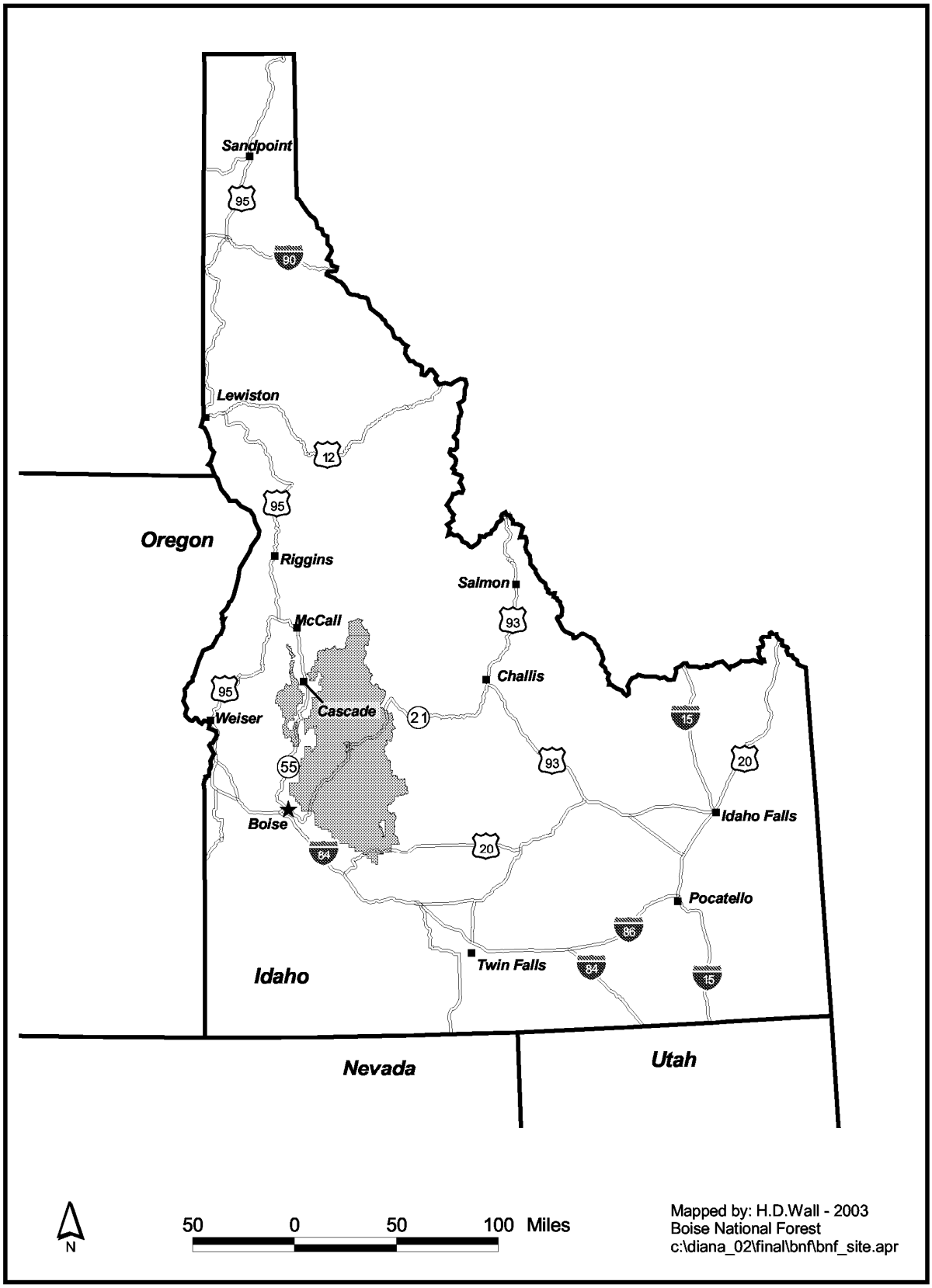
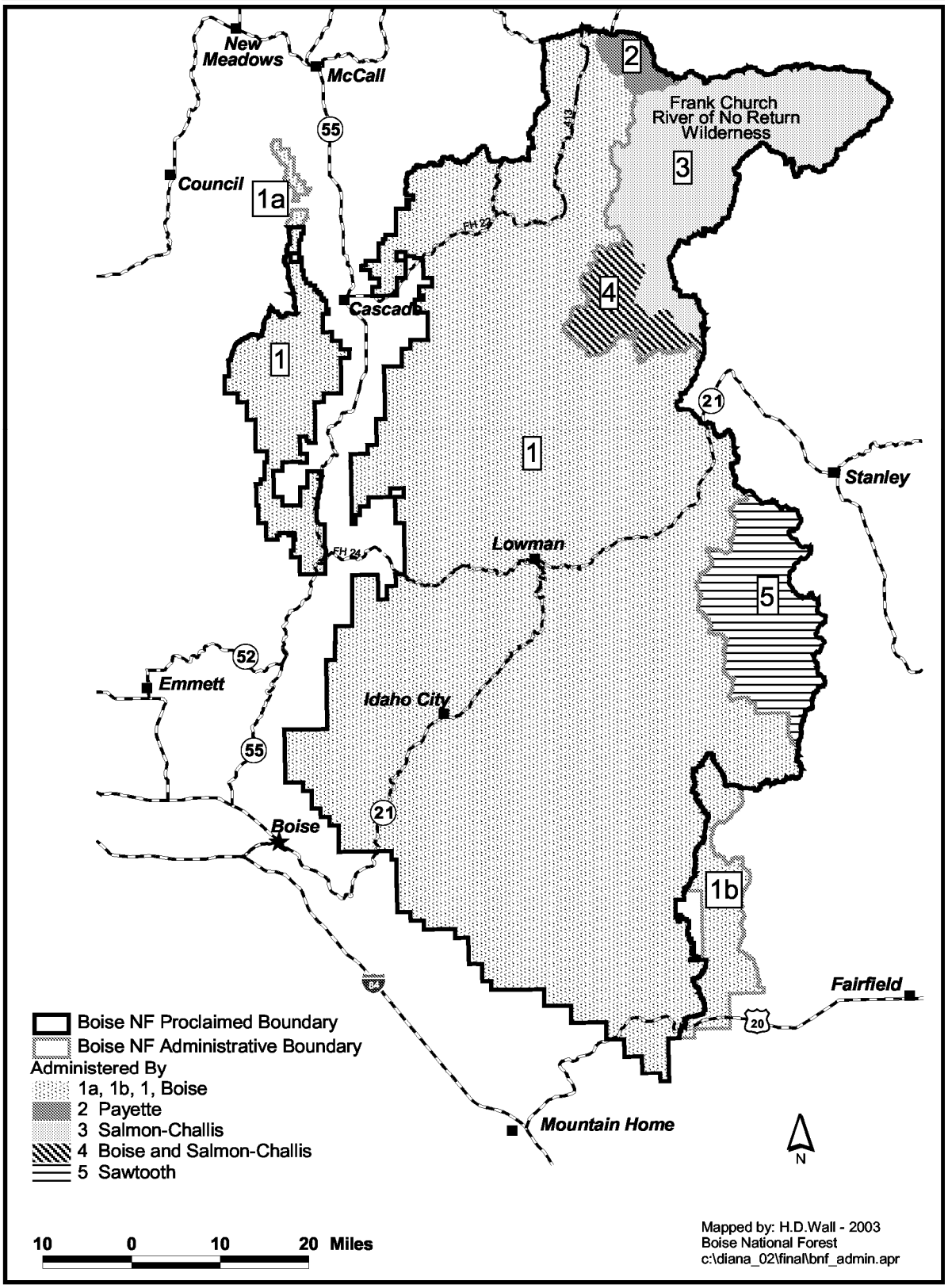


Figure 2. Boise National Forest Proclaimed and Administrative Boundaries



I-2. Strategy for Forest Plan Monitoring and Evaluation

The Boise NF monitoring and evaluation strategy is straightforward and is described in detail in Chapter IV of the 2003 Forest Plan. Monitoring and evaluation of implementation of the Forest Plan have tightly focused on implementation success (i.e., achievement of plan objectives), and on decisions made in the 2003 Record of Decision for the Forest Plan. Monitoring elements also include requirements from the National Forest Management Act (NFMA), as well as other pertinent laws and regulations.

Monitoring and evaluation of key results over time will help us determine if we are making satisfactory progress toward the desired conditions identified in the plan or if a "need for change" in the existing strategy is required in light of the conditions and/or circumstances at that time. As long as the knowledge and information gained from monitoring and evaluation from year to year determine that the management strategy outlined in the Forest Plan is resulting in acceptable progress toward Forest Plan desired conditions, then the conclusion would be that there is no need for change in that strategy. However, if monitoring and evaluation concluded that the Forest Plan strategy is not effective in light of conditions and circumstances at the time of the assessment, then the Forest Supervisor would make the determination as to what the "needs for change" are and whether errata, Forest Plan amendment, or revision would be needed to effect the change.

I-3. FYs 2008 and 2009 Forest Plan Monitoring and Evaluation Report Organization

Chapter IV of the Forest Plan identifies the elements that will be reported in annual monitoring and evaluation reports each year. Table IV-1 identifies elements related to NFMA and other pertinent laws and regulations that are reported annually, and others that are reported every 5 years. Elements not reported each year are typically those that require the collection of information over multiple years before a meaningful evaluation is possible.

In addition, Table IV-2 of the Forest Plan identifies questions and indicators that will be monitored to determine the success of the Forest Plan management strategy in progressing toward the various resources, and related social and economic environments, desired conditions. Similar to Table IV-1, information pertaining to several indicators requires multiple years of collection before any meaningful evaluation of an element and its related question can be made. Table IV-2 includes a "Report Period" column that indicates how often the indicator will be reported on (i.e., annually, two years, three years, five years, or 10 years).

The Forest's annual monitoring reports have been designed to be cumulative in nature; that is, to report on the current year's monitoring results while summarizing those from previous years. The Fiscal Year (FY) 2007[1] Monitoring and Evaluation Report, issued in August 2008, is the most recent report issued by the Forest. Because the FY 2007 report displayed the fourth year of monitoring under the 2003 Forest Plan, it included both those Table IV-1 elements reported annually, as well as the Table IV-2 monitoring questions and their related indicators to be reported on "annually" or every "two years." In addition, it summarized the monitoring questions and their related indicators to be reported on every "three years." These three-year monitoring questions and indicators were reported in more detail in the FY 2006 Forest Plan Monitoring and Evaluation Report, and were summarized in the FY 2007 report to provide continuity.

Since the FY 2007 Monitoring and Evaluation Report was issued, the Forest has experienced other urgent and intensive work priorities, including rehabilitation and recovery activities following the 2007 wildfire

[1] October 1, 2006 – September 30, 2007

season, and development of a Forest Plan amendment adopting a Wildlife Conservation Strategy for the forested biological community, issued in July 2010. Consequently, the Forest postponed preparation and issuance of the FY 2008[2] annual monitoring report. The Forest also postponed development and release of the five-year Monitoring and Evaluation report, originally scheduled for 2009 and now anticipated for release in late 2011.

Due to these other compelling priorities, the Forest Supervisor has decided to combine the FY 2008 annual Monitoring and Evaluation report with the FY 2009[3] report, and to report on only select items among the five elements in Table IV-1 and the five elements in Table IV-2 with "annual" reporting requirements. As in previous years, the FYs 2008 and 2009 report will be cumulative and will report on the current year's monitoring results while summarizing those from previous years. Specifically, Section II-1 and II-2 will include identified items from those "annual" monitoring elements from Tables IV-1 and IV-2, respectively, while Section II-3 will summarize the previously-reported Table IV-2 monitoring elements with "two year" or "three year" reporting requirements.[4] Section II-4 will summarize the project level monitoring completed in previous years that has been designed to collect the information needed to address both annual related monitoring elements found in Tables IV-1 and IV-2 of the Forest Plan, as well as the elements that have annual information needs that will be evaluated and reported every two, three or five years.

[2] October 1, 2007 – September 30, 2008
[3] October 1, 2008 – September 30, 2009
[4] Elements with "two year" reporting requirements were included in the FY 2005 and FY 2007 annual monitoring reports, while elements with "three year" reporting requirements were included in the FY 2006 report. These reports are included in the planning record.

National Forests provide a variety of outputs and services that help restore and maintain resources, and respond to social and economic interests.

Monitoring and evaluation helps us proactively adjust to changing conditions or circumstances. This adaptation is key to resource sustainability, given the demands placed on our National Forests.

II. FYs 2008 and 2009 ANNUAL MONITORING AND EVALUATION REPORT

II-1: Five *Annual* Monitoring Elements Found in Table IV-1 of the Forest Plan:

1. A quantitative estimate of performance comparing outputs and services with those predicted by the Forest Plan (Forest Plan, p. IV-5)

Forest Plan objectives (and in some cases goals) found under the various Forestwide resource sections in Chapter III provide the best projection of outputs and services to be provided through implementation of the Forest Plan. The following section summarizes the Forest's accomplishments for these objectives designed to provide for specific services or outputs on an annual basis. Other objectives found in the various sections of the Forest Plan that did not identify they had an annual reporting requirement are typically *not* discussed in this monitoring report. These objectives are discussed only in those cases where activities have been implemented that substantially contribute toward or fully accomplish the objective. Except in these circumstances, these objectives will be addressed in detail every 5 years, unless otherwise specified or warranted due to changed conditions or circumstances. In addition, accomplishments from the FY 2004, FY 2005, FY 2006 and FY 2007 Monitoring Reports have been summarized and included as appropriate, so that the Monitoring and Evaluation Report provides a cumulative account of the Forest's achievements and trends over time.

To maintain a "bridge" to Chapter III of the Forest Plan, the objectives addressed below will be organized by the resource section they are found in the Plan, as well as ordered in the same sequence as they would be found in the Plan. These resource sections in the plan that do not contain objectives that are reported on an annual basis will be noted below.

THREATENED, ENDANGERED, PROPOSED AND CANDIDATE SPECIES Objectives (Forest Plan, pages III-8 to III-11)

Objective TEOB01: *Continue to map and update locations of species occurrence and habitat for TEPC species during fine- or site/project-scale analyses. Incorporate information into a coordinated GIS database and coordinate with the Idaho Conservation Data Center.*

Accomplishment:

Northern Idaho Ground Squirrel Surveys

In 2008 the seasonal wildlife crew completed surveys for the federally threatened northern Idaho ground squirrel in the Tripod Meadows area of the Emmett Ranger District (RD). No northern Idaho ground squirrels were found. Survey protocols followed those outlined by the U.S. Fish and Wildlife Service (USFWS), Snake River Basin Office. Areas were identified for the survey by using a habitat model developed by the Boise NF in cooperation with the Northern Idaho Ground Squirrel Technical Team in 2006 (updated 2007). Modeled habitat included acres having similar soil, aspect, slope and vegetative cover characteristics to known colonies of northern Idaho ground squirrels. Some areas surveyed had prior year surveys completed on them, while other areas were surveyed for the first time. During the summer of 2009 a seasonal wildlife crew conducted further field surveys for this federally threatened species on the Cascade RD across West Mountain.

Survey efforts in 2008 and 2009 did not locate any northern Idaho ground squirrel occurrences on the Boise NF. Columbian ground squirrels occupied many of the sites. The habitat model (described below) was validated to determine whether it was depicting areas that appear similar to habitat occupied by this species.

Bald Eagle Nest Surveys

In FY 2008 and 2009, bald eagle monitoring continued as in previous years. Bald eagle nest surveys determine occupancy and productivity (how many young are fledged). At least two visits are made to each site. The first visit determines occupancy and whether young are present on the nest, while during the second visit, observers assess survival of young eagles and determine time of fledging.

On the Lowman RD, two bald eagle nest sites within one pair's territory are monitored. During 2006 the occupied nest fledged two young eagles before the Rattlesnake Fire burned through the nest stands. Surveys in 2007 confirmed both historical nest trees were killed by the fire and the nests were unoccupied. One nest had evidence that the eagles had started to rebuild the nest either in the fall of 2006 or the spring of 2007; however the nest was incomplete. Bald eagles were not observed on or near these trees at any time during surveys in 2007. Surveys to locate a new nest site were conducted by walking ridgelines and scoping immediate and extended surroundings for bald eagles and/or nests and by boat from the Deadwood Reservoir. A new nest was not located; however ,a juvenile bald eagle was observed on September 12 at the reservoir suggesting that successful reproduction did occur. In 2008 monitoring documented that the historical nest trees in the Deadwood nest territory remain unoccupied. One nest is absent and the second is in disrepair. Mature bald eagles were observed perched along the edge of the reservoir near the nest sites at various times during the summer of 2008. A new nest site was not located. Two juvenile bald eagles and six adults were observed at the inlet during the kokanee run on September 17. It is unknown whether the juveniles were produced at the reservoir, or whether they had moved in to take advantage of the kokanee run. While a new nest site was not located, the survey documented additional information on numbers and ages of bald eagles using Deadwood Reservoir during the breeding season, as well as bald eagle foraging areas, bald eagle response to human activities, and the presence of water- and shorebirds.

On the Emmett RD, the District wildlife biologist monitored three bald eagle nest sites for occupancy and productivity in 2008. Each nest was visited between May and July 2008. Adult eagles were observed at all three sites. At two sites nesting was attempted and one was successful.

The Warm Lake bald eagle nest was affected by the Cascade Complex Fire in 2007. This nest tree, a large diameter ponderosa pine, was scorched by the fire and has not survived. Despite the mortality of the nest tree, the Warm Lake pair continued to nest in this tree and successfully fledged young in both 2008 and 2009. Other bald eagle nests on the Cascade RD, along Cascade Reservoir and the North Fork Payette River, were monitored in 2008 and 2009 by wildlife biologists with the Idaho Department of Fish and Game (IDFG).

Bald eagle nests on the Mountain Home RD were monitored and results submitted to the IDFG. There are no bald eagle nest sites to monitor on the Idaho City RD.

Bald eagle nest site monitoring is coordinated through the Western Idaho Bald Eagle Working Group. All nest information is shared with outside agencies responsible for bald eagle recovery monitoring (U.S. Fish and Wildlife Service and IDFG. The monitoring on the Forest contributes to larger scale monitoring and data helps determine trends in bald eagle populations at the local and regional levels.

The Idaho Bald Eagle Nest Monitoring 2008 and 2009 Annual Reports are completed by the IDFG and provide a summary of all nesting survey data in the state. This report is typically available during the December following each nesting season.

Mid-Winter Bald Eagle Counts

Monitoring wintering bald eagle populations is part of a partnership effort conducted at a larger scale by federal and state agencies, universities, and volunteers. Local efforts are coordinated through the Western Idaho Bald Eagle Working Group. Members include the IDFG, Boise State University, Bureau of Land Management and USFWS - Snake River Basin. Information collected helps determine local, regional, and national trends in bald eagle populations.

Midwinter bald eagle counts are conducted on three of the Ranger Districts on the Forest. On the Emmett RD, approximately 65 miles along the main Payette River and South Fork Payette River (two connecting routes between Emmett and Lowman, ID) were surveyed from a vehicle during early January by the District Wildlife Biologist. On the Lowman RD, approximately 26 miles along the South Fork Payette River was surveyed by the District wildlife biologist. All eagle sightings (bald and golden) were recorded by species, number, age, activity, and location. Results from the routes are combined with the other nine routes surveyed in Zone 6 of the Recovery Area and sent to the Regional Coordinator for the USGS, Biological Resources Division. Annual participation contributes information to determine trends in populations. The number of bald and golden eagles detected along this route during recent years has ranged from 0 in 2002 to 15 in 2005.

In previous years, activities focused on field surveys and development of a habitat model for northern Idaho ground squirrel, and southern Idaho ground squirrel surveys, in addition to the bald eagle surveys described above:

Northern Idaho Ground Squirrel: Development of Habitat Model; Field Surveys

The 2005 discovery of northern Idaho ground squirrel colonies in habitats isolated from known colonies, and at elevations higher than any extant or extirpated colonies, increased the need to develop a habitat model to identify potential sites to be surveyed. Consequently, the Northern Idaho Ground Squirrel Habitat model, which uses soils, slope, aspect, and vegetative cover to identify potential habitat, was developed and implemented in 2006, in cooperation with the Northern Idaho Ground Squirrel Technical Team. Based on 2006 field efforts, as described below, the model was refined in 2007. For example, some of the newly-discovered colony sites were located on different soils than anticipated by the model, so the soil parameters in the model were adjusted to include these additional soil types. Continued improvement to the modeling is anticipated in future years.

In 2007, field surveys on both private and public lands resulted in expansion of some known colonies, although new colonies were identified. Specific to the Boise NF, a seasonal wildlife crew conducted field surveys on the Emmett RD in June (south and west of Sagehen Reservoir) and the Cascade RD in August (West Mountain). Survey protocols followed those outlined by the U.S. Fish and Wildlife Service, Snake River Basin Office. The habitat model described above identified areas for the survey. Some of the areas surveyed had been examined the previous year, while other areas were surveyed for the first time. No northern Idaho ground squirrel occurrences were noted on the Boise NF; Columbian ground squirrels occupied many of the sites.

In 2006, after similar field surveys on both private and public lands, some known colonies were expanded and new colonies identified. Specific to the Boise NF, a seasonal wildlife crew conducted field surveys in similar locations to those conducted in 2007. As in 2007, the 2006 surveys found that Columbian ground squirrels occupied many of the surveyed sites; no northern Idaho squirrel occurrences on the Boise NF were noted.

Southern Idaho Ground Squirrel Surveys

The southern Idaho ground squirrel is a federal candidate species that may occur on the Emmett RD. In the summer of 2007, a seasonal wildlife crew surveyed about 250 acres on the west side of the Emmett RD; no southern Idaho ground squirrels were detected.

Objective TEOB05: *Coordinate with research efforts for TEPC species to determine basic life history requirements and potential effects from management activities. Coordinate efforts and information with the Idaho Conservation Data Center, universities, Forest Service Research Stations, etc.*

Accomplishment: In FY 2008 and 2009, the USFWS, Payette NF and IDFG continued to participate in the northern Idaho ground squirrel (NIDGS) recovery efforts. These 3 agencies, along with the Boise NF and Dr. Eric Yensen of The College of Idaho, entered into a revised participating agreement in 2007 (BNF No. 07-PA-11040202-079) to establish terms and responsibilities for the cooperative effort to provide long-term protection for NIDGS. (This work built upon 2006 initial efforts, marked by the Forest's participation in the NIDGS Modeling Workshop.)

Research, monitoring, and recovery efforts for this species are shared among the several agencies under this cooperative agreement. The USFWS has primary responsibility for recovery. The Payette NF focuses on maintaining existing sites on national forest lands and restoring habitat to promote population stability and expansion. The Boise NF conducts surveys in suitable habitat within the range of the species. The IDFG's primary role is population monitoring. Research support is provided by The College of Idaho (Dr. Eric Yensen) and the University of Idaho (Dr. Lisette Waits).

An IDFG progress report summarizing population-monitoring efforts during the 2009 field season reports the results of the continued long-term mark-recapture studies at 4 of 5 intensive monitoring sites and the estimated numbers at other known sites based on extensive surveys (Mack and Bond 2010). In summary, population monitoring for NIDGS occurred from April through June 2009. The total 2009 estimate was 1,618 adults and yearlings: a 7 percent increase over 2008.[5]

The Boise NF continues to participate on the NIDGS Technical Working Group, which is charged with implementing the science-based species Recovery Plan. The Working Group currently consists of representatives from the USFWS, IDFG, the Payette and Boise NFs, and The College of Idaho. Members represent varied technical expertise, including research, silviculture, and wildlife management.

For bull trout, no additional reporting has been done for FYs 2008 and 2009. In 2007, the Boise NF continued work on two cooperative projects that will substantially contribute to accomplishment of this objective as it relates to bull trout.[6] The two projects are briefly discussed below:

[5] In 2007, an IDFG progress report summarizing population-monitoring efforts during the 2007 field season noted the results of the continued long-term mark-recapture studies at five intensive monitoring sites and the estimated numbers at other known sites based on extensive surveys (Mack and Bond 2007). Population monitoring occurred during April and May 2007. A total of 46 colonies were visited to assess squirrel presence and to record numbers seen or heard. The total 2007 estimate was 1,040 adults and yearlings -- a 26 percent decrease from 2006. This species still occurs most frequently in small, potentially vulnerable colonies. Northern Idaho ground squirrels occupied at least 40 sites in 2007, with over half of those (29 sites) supporting less than 20 adults and yearlings. Only two sites supported more than 100 squirrels.

[6] No additional reporting has been done for FY 2008 and 2009.

Bull Trout Cooperative Study - Deadwood Reservoir

Objective/Purpose of Project: The Deadwood River basin contains a bull trout metapopulation that experiences some of the same threats to the species that have been described within numerous published papers (Dunham and Rieman, 1999; USFS, 1998; Rieman et al., 1993; Rieman and McIntyre, 1995). Historically, the Deadwood drainage likely supported a population of resident and fluvial bull trout (Jimenez and Zaroban, 1998). Presently, the Deadwood drainage has a diversity of habitats that resulted from the construction of the Deadwood Reservoir in 1931. These habitat changes have likely resulted in: (1) fragmentation of the bull trout population within the Deadwood drainage, (2) genetic isolation of fishes upstream of the dam, (3) blockage of migration corridors for fluvial fishes, and (4) modification of the timing of flows and temperatures downstream of the reservoir. The presence of the reservoir provided IDFG) an opportunity to establish a kokanee fishery within the reservoir. IDFG has managed Deadwood Reservoir for kokanee. In addition, several nonnative stream and lake fish species have been introduced into the reservoir over time.

No studies were conducted prior to the completion of the reservoir to examine the condition of the bull trout population within the Deadwood drainage and few studies have been conducted since (Jimenez and Zaroban, 1998). Additionally, Deadwood Dam is operated primarily for irrigation and salmon augmentation flow water for the upper Snake River system. Spill from the dam is relatively sporadic and may cause temperature fluctuations below the dam that are harmful to aquatic fauna, especially thermally sensitive species such as bull trout. Anecdotal information provided by anglers suggests that a fluvial form of bull trout may use the river below Deadwood Dam for spawning.

Methods or Techniques Used: BOR, IDFG and Boise NF personnel participated in cooperative trapping efforts in all major tributaries to Deadwood Reservoir. Adult bull trout captured in the traps were surgically implanted with radio telemetry tags. Tag locations were monitored via aerial and ground telemetry tracking at regular intervals throughout the year. BOR crews also electrofished tributary streams within the basin, above and below the dam. The Peterson et al. (2002) sampling protocol was used in 2005-2007 and will be used in future samples. Bull trout were also PIT tagged, fin clipped, and scale sampled.

Realized/Expected Results: Bull trout distributions varied throughout the basin, and the dominant subspecies was westslope cutthroat trout (above the dam). The presence and dominance of the cutthroat are a result of the heavy stocking of the species. A report of the summer survey is available from the BOR website (http://www.usbr.gov/pn/programs/usrb/index.html) or by contacting the Forest fisheries biologist.

Payette River Bull Trout Genetics Study – Phase 1

Objective/Purpose of Project: The Payette Basin bull trout genetics study is a cooperative effort between the BOR, USFWS, and Boise NF. A memorandum of understanding was signed with the following objectives: 1) examine the amount of genetic diversity and genetic population structure among bull trout populations in the Payette River Basin; 2) conduct a more fine-scale genetic analysis of populations above and below Deadwood Dam to determine the genetic effects of isolating populations above the dam; and 3) examine the effects that smaller barriers such as culverts have on migration patterns and gene flow within the Payette River Basin.

Methods or Techniques Used: Tissue samples were collected during field surveys by personnel from the BOR, the Forest Service and the USFWS. Fin clips were taken from all fish collected and preserved, and DNA was extracted from a subset of 300 tissue samples. All individuals were genotyped[7] at a core set of 12 microsatellite loci[8] that were recently identified as a standard set of loci

[7] A "genotype" is the genetic constitution of an individual or group.

for bull trout population structure analyses. Software was used to identify alleles[9] at each locus and to determine the multi-locus genotype of each fish.

Using a variety of measures, we determined the amount of genetic variation that exists in each population sampled in the study area. We were also able to compare levels of genetic diversity observed in the Deadwood and Payette rivers with levels of genetic variation observed for other bull trout populations throughout the species range. We estimated the degree of genetic population structure among populations in the study area using F-statistics and other measures of genetic differentiation as in Spruell et al. (2003).

Using these data, we examined how the differences we observe between bull trout above and below culverts compare to the differences between other populations in the Payette Basin. We also used measures of geographic distance between populations to perform analyses of genetic isolation by distance. This allowed us to compare genetic diversity and population structure between populations that are closer to and further away from barriers in the Deadwood and Payette River basins to examine the effect that a population's proximity to a barrier may have on genetic diversity and population structure.

Realized/Expected Results: This study examined levels of genetic variation at 12 microsatellite loci within and among 20 bull trout populations in the Deadwood and Payette River systems. We observed that levels of genetic diversity, including number of alleles per locus, allelic richness and observed and expected heterozygosity, were lower than we had observed in other bull trout populations. Genetic diversity was significantly lower in populations located above Deadwood Dam compared to populations below Deadwood Dam and was also lower in populations located above culverts compared to populations below culverts in the same stream. When we compared patch size and occupied bull trout habitat to allelic richness, we did not observe a significant relationship between these two factors and allelic richness. Our overall estimate of genetic variation among populations was relatively high (Fst = 0.273). We observed significant levels of genetic variation among all populations, including populations located above and below culverts. Data suggest that there are three groups of populations within the system: populations located above Deadwood Dam, populations located below Deadwood Dam above Big Falls, and populations located below Big Falls. Populations located above barriers tended to show greater levels of genetic differentiation from other populations in the study area when compared to populations below barriers. Data suggest that large and small scale barriers have significantly influenced how genetic diversity is partitioned within this system. We conclude that bull trout populations in this system would benefit from management activities that allow for increased connectivity among populations.

In 2007, a Boise NF monitoring crew collected fin clip samples from one additional local population in the Payette River Basin (Baron Creek) and one local population from the adjacent core area (Sulphur Creek in the upper Middle Fork Salmon River). These samples were sent to the USFWS laboratory in Abernathy, Washington for processing in phase 3 of the study (2008). In 2007, the USFWS also published the results from phase 2 of the Payette River bull trout genetics study; a final report was issued in early 2008 (DeHaan and Ardren, 2008).

A third cooperative project, the Boise River Bull Trout Cooperative Project, was completed in 2006. This multiyear cooperative project with the BOR was designed to describe the life history, migration patterns, migration timing, and population (numbers) of adfluvial bull trout in the Boise River upstream of Lucky Peak Dam. This study provides an accurate depiction of the migration patterns

[8] A "locus" (plural "loci") is the position in a chromosome of a particular gene or allele.
[9] An "allele" is one of a group of genes that occur alternatively at a given locus.

and timing, habitat use, and population and genetic composition of the bull trout population in the Boise River. This information will contribute to bull trout recovery planning and status review. Data from this study have been analyzed and a final report is available at the BOR website (http://www.usbr.gov/pn/programs/usrb/index.html).

Objective TEOB06: *Develop an agreed-upon process with NOAA Fisheries and USFWS for project-level consultation that addresses multiscale analyses and tracking of environmental baselines.*

Accomplishment: The Boise NF, NOAA Fisheries, and USFWS agreed on August 26, 2004 to a "Framework" for implementation of the 2003 Forest Plan that will inform project level consultation. The process, developed in coordination with Rocky Mountain Research Station, addresses multiscale analyses of risks and threats to species and their habitat and tracking of habitat environmental baselines. In 2007, progress continued on applying the process to additional subbasins, following 2006's application of the process to one subbasin. Spatial products depicting current, historic and relative change in habitat for some species of conservation concern were drafted in anticipation of populating "Framework." Other spatial products that were drafted include: distribution, risk factors, fire regimes and habitat patch dynamics. Additional details about "Framework" are discussed under item 3, "Population trends of the management indicator species will be monitored and relationships to habitat changes determined," later in this document.

In light of the potential effects of extensive wildfires on the Forest in 2006 and 2007, in 2008 and 2009 Forest managers focused on updating vegetative baseline conditions across all subbasins within the Forest's administrative boundary (refer to page 35 of this report). As was done in pilot subbasins in 2006 and 2007, quantitative and spatial products depicting current, historic and relative change in potential vegetative groups (PVGs) and related habitat for focal species were assessed in detail and compiled by each 5th level hydrologic unit (HU) within a subbasin. Resulting products began to be incorporated into project level analyses in 2009 and were also used to support Forest Plan amendments proposed in 2009 to integrate findings of a wildlife conservation strategy. In 2008 aquatic resource baselines also continued to be updated. The aquatic resource subbasin baseline updates are expected to be finalized in 2010/2011.

Objective TEOB23: *Develop operational resources (maps, keys, desk guides, etc.) within 1 year of signing the ROD, to coordinate TEPC species concerns and practical mitigations, and include these resource tools in the Fire Management Plan. Consult with NMFS and USFWS on operational resources on an annual basis. As part of this process consider the following relative to initial attack:*

a. Guidelines on how resource tools will be provided to initial attack personnel.
b. Locations or identification of occupied TEPC plant habitat, TEPC fish-bearing streams, surface water with direct delivery to TEPC fish-bearing streams and associated RCAs.
c. Criteria and potential mitigation concerning decisions to place incident bases, camps, helibases, helispots, and other centers for incident activities within occupied TEPC plant habitat or RCAs.
d. Criteria and potential mitigation concerning decisions to use draft hoses in TEPC fish-bearing streams that do not have appropriate screening.
e. Criteria and potential mitigation concerning decisions to use chemical retardant, foam, or other additives in RCAs where surface waters have direct delivery to TEPC fish-bearing streams.
f. Criteria and potential mitigation concerning decisions to use heavy equipment in RCAs

Accomplishment: The 2009 Fire Suppression Operation Guidance map was presented to the Level 1 Team (USFWS, NOAA Fisheries, Boise NF) for review on January 23, 2009 (Level 1 Consultation Notes, on file). The Fire Suppression Operation Guidance map is handed out in Resource Advisor training on the Forest and provided to fire suppression staff before the beginning of each fire season.

Operational resources were finalized on the Boise NF in FY 04, with development of a map entitled "Fire Suppression Operations Guidance 2004 Fire Season (Initial and Extended Attack)." In 2007, the 2005 Fire Suppression Operation Guidance map was again presented to the Level 1 Team review. There were no alterations from the 2006 guidance. The Level 1 Team agreed the guidance was sufficient to avoid or minimize adverse effects to TEPC species from fire suppression. This resource guidance is called the "Fire Suppression Operations Guidance 2007 Fire Season (Initial and Extended Attack)."

In 2006, the Boise and Sawtooth NFs developed a Programmatic Biological Assessment (BA) for Wildfire Suppression and Wildland Fire Use activities. This BA was submitted for informal consultation, which concluded with letters of concurrence from the USFWS on August 11, 2006 and NOAA Fisheries on August 30, 2006. This BA, and an accompanying Biological Evaluation (BE) for sensitive species, provide a checklist to measure compliance with the design measures in the analysis and can be used to complete consultation on large fires on the two Forests. During the process to incorporate the programmatic BA/BE guidance, it was discovered that the Appendix B checklist did not include wildlife design mitigations. The Boise NF coordinated with the Sawtooth NF and both Level 1 Teams to correct this and include the appropriate wildlife information. Level 1 reviews and feedback on March 12, March 14, and April 16, 2007 resulted in agreement by both Forests and Level 1 Teams that the guidance was sufficient to avoid or minimize adverse effects to TEPC species from fire suppression (Level 1 Consultation Notes on file).

AIR QUALITY AND SMOKE MANAGEMENT Objectives (Forest Plan, page III-16)

Objective ASOB01: *Comply with federal, state, and local requirements relating to the Clean Air Act. This includes, but is not limited to, participating in the respective state's Smoke Management Programs, and following the State Implementation Plan.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. The State of Idaho has a voluntary Smoke Management Program. The Boise NF is a member of the Montana/Idaho Airshed Group. Idaho Department of Environmental Quality (DEQ) has certified to the Environmental Protection Agency (EPA) that the operations of the Montana/Idaho Airshed Group meet the basic requirements for a smoke management program as outline in the Interim Air Quality Policy. In 2007, as in 2006, all prescribed burns were conducted with "burn day" recommendations from the Monitoring Unit of the Airshed Group. No conflicts or smoke intrusions were reported in the Impact Zones (i.e. smoke sensitive areas identified by the Airshed Group). No particulate matter exceedences or emergency episodes were attributed to smoke from the Forest's prescribed fire operations.

Objective ASOB02: *Within five years or within the timeframe required by the respective State Implementation Plan, develop emissions data and trend information for fire use to be stored in a centralized database. Use data to document meeting Regional Haze requirements established by the State.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. Emissions data for prescribed fires is being collected through the Airshed Management System (AMS). The AMS is a web-based tool that all Montana/Idaho Airshed Group members use to request burn day recommendations and report actual acres accomplished. This data is archived and available to Idaho DEQ. There is no emission data collection system for wildland fire use. As of September 2008, the Idaho DEQ anticipated adopting a Regional Regional Haze SIP by December 2008. This plan should outline what data requirements, if any, are needed to report emissions from wildland fire use.

Objective ASOB05: *When developing and implementing fire use projects, inform the public about potential smoke impacts to health and safety.*

Accomplishment: In FY 2008 and 2009, the Boise NF, in partnership with local land management agencies, again produced the annual "Southwest Idaho Prescribed Fire" booklet, which outlines yearly plans for individual prescribed fire projects, along with project-specific notification. This booklet is distributed to an extensive list of local, county and state officials and regulatory agencies. The Forest also maintains a website (rxfire.com) and telephone "hotline" that are updated weekly with the size, location and timing of anticipated burns. The hotline provides an opportunity for callers to provide feedback and/or voice concerns about smoke or other impacts of current projects. In addition, the Forest includes information in the state's game hunting regulations about the benefits of prescribed fire for wildlife habitat and potential hazards or conflicts regarding smoke.

SOIL, WATER, RIPARIAN AND AQUATIC RESOURCES Objectives (Forest Plan, pages III-19 to III-21)

Goal SWGO09**:** *Promote integration of planning, analysis, implementation, and monitoring efforts that support ESA, Magnuson-Stevens Act, and Clean Water Act requirements.*

Accomplishment: An approach to monitoring bull trout as a management indicator species (MIS) was developed with the Sawtooth NF, Intermountain Regional Office, Rocky Mountain Research Station, IDFG, and BOR in 2004, and annual monitoring began in 2005. This collaborative monitoring effort supports ESA by tracking the trend in bull trout population distribution through time, which is used to measure progress toward recovery of the species. Data collected on the Boise and Sawtooth NFs will be assessed against data collected in future years to establish population distribution trend within the two planning units. Additional detail on the bull trout monitoring is provided in item 3, "Population trends of the management indicator species will be monitored and relationships to habitat changes determined," described later in this document.

In FYs 2008 and 2009 Boise NF personnel continued cooperating with research silviculturalists from the Rocky Mountain Research Station in Moscow, Idaho on their study examining the fuel and vegetation management effects on erosion and sediment delivery at the drainage scale in the Boise Basin Experimental Forest.

This collaboration with research complements that undertaken in earlier years. For example, in 2004, a 40-acre section of a thinning project on the Boise Experimental Forest within the Idaho City RD was treated using a 235 Cat tracked excavator with a brush buster head. Dr. Russell Graham and Dr. Teri Jain are testing this method of fuels reduction, termed "chunking." Soil disturbance data was collected to determine if Forest Plan standards were met using this method of treatment. This investigation will occur over a 5 to 10-year period. This research is also within a Wildland Urban Interface (WUI) and Burned Area Emergency Rehabilitation (BAER) subwatershed.

Objective SWOB05**:** *Cooperate with the State, Tribes, other agencies and organizations to develop and implement Total Maximum Daily Loads (TMDLs) and their implementation plans for 303d impaired water bodies influenced by National Forest System management.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. In 2007, a "Green Lidar" flight of the Casner Creek restoration channel on the Lowman RD was completed. The Forest Service's Rocky Mountain Research Station will process the data and provide the Forest with GIS

files and photos for channel restoration planning in FY 2008. This restoration project is intended to improve aquatic habitat and ultimately reduce fine sediment in Bear Valley Creek.

During 2005 progress continued on the road sediment inventory within the South Fork Payette River (SFPR) subbasin. In 2004, the Boise NF originally entered into a partnership with the EPA and Idaho DEQ to assess the major sources of road induced sediment within the SFPR subbasin. There are approximately 35 subwatersheds within the SFPR subbasin, including several that are Forest Plan Aquatic Conservation Strategy (ACS)[10] priority subwatersheds.[11] The SFPR is included on the 1998 303(d) list for Total Maximum Daily Load (TMDL) development for Idaho, with emphasis on sediment. Although the SFPR has mixed ownership within most of its watershed area, the headwaters and tributaries are predominately within National Forest System lands.

This collaborative project focused on collecting site-specific information on nearly 450 miles of roads within the SFPR. Forest Service-sponsored crews (Student Conservation Association interns) identified major sources of sediment tied to roads and road corridors, and delineated transport routes from roads to receiving streams. Accurately estimating management-induced sediment delivered to a stream system is critical in developing a TMDL that can be implemented successfully, regardless of ownership. The Idaho DEQ also collected the BURP[12] data necessary to initiate this TMDL.

In 2005 the large amount of field data was corrected and analysis began to determine the location, amount of sediment and sediment delivery associated with these roads. During this same time the Rocky Mountain Research Station was finalizing both the GIS-based road inventory process, and the GIS-based road sediment delivery model ("Geomorphic Road Analysis Inventory Package"). Over 7,100 drainage features associated with the 450 miles of roads were identified. Results of the road inventory and sediment analysis will be presented to both the EPA and Idaho DEQ during 2006.

Objective SWOB11**:** *Coordinate with state and local agencies and tribal governments annually to limit or reduce degrading effects from stocking programs on native and desired nonnative fish and aquatic species.*

Accomplishment: No additional reporting has been done for FYs 2009, 2008, or 2007. In FY 2005, subsequent to initial coordination efforts between the Forest Fishery Biologist and IDFG, the State of Idaho revised its fish stocking policy and began stocking sterile trout where there is a risk of hybridization. In FY 2004, the Forest fisheries biologist attended a coordination meeting entitled "Management of Fish and Wildlife in Wilderness" with IDFG on December 4, 2003 in Boise. These

[10] The Forest Plan **Aquatic Conservation Strategy** (ACS) strategy contains eight components, which collectively provides management direction (integrated throughout resources sections of the Plan), analysis and treatment priorities/strategies to maintain and restore characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats. How these components are applied at the subwatershed and site-specific levels will affect the types and outcomes of management actions and will, therefore, be an overriding factor that influences potential effects for SWRA resources. (Forest Plan, Appendix B, ACS).

[11] **ACS Priority Subwatersheds:** This restoration priority rating, in conjunction with the restoration type and overall priority watershed classification, provides the focus for the long-term ACS recovery of listed fish species and TMDL watersheds. (Forest Plan, Appendix B, ACS, Component 7)

[12] **Beneficial Use Reconnaissance Project (BURP):** The DEQ is responsible for implementing the 1972 Federal Clean Water Act and ensuring whether a person, entity, or discharge is in compliance with state Water Quality Standards and Waste Water Treatment Requirements for protection of aquatic life and other beneficial uses. Section 303(d) of the Clean Water Act requires states to develop a list of water bodies that do not meet water quality standards. The DEQ conducts biological and physical habitat surveys of water bodies under the Beneficial Use Reconnaissance Project (BURP), the primary purpose of which is to determine the support status of designated and existing beneficial uses.

meetings constituted an initial step toward greater coordination between IDFG and the Forest Service regarding fish stocking in alpine lakes on NFS lands.

WILDLIFE RESOURCES Objectives (Forest Plan, pages III-25 to III-26)

Objective WIOB01: *During fine-scale analyses, identify and prioritize opportunities for restoration of habitat linkage to promote genetic integrity and wildlife species distribution (see Appendix E).*

Accomplishment: In FY 2008 and 2009, activities focused on raptor and songbird fall migration monitoring at Lucky and Boise Peaks, fisher hair snare efforts, and participation in the the Boise River Wildlife Linkage Partnership (BRWLP):

Raptor and Songbird Fall Migration Monitoring at Lucky and Boise Peaks, Idaho

The conservation of migratory habitat is an important component to maintaining wildlife distributions both on the Boise NF, as well as across the range of these migrant species. By contributing funding towards the maintenance and operation of the Idaho Bird Observatory, the Forest Service is contributing to the long-term monitoring (since 1996) of migrating raptors and songbirds that use the Boise NF, Idaho and the western United States. The Idaho Bird Observatory operates one station on the Boise NF and another station adjacent to the Forest. In 2009, the Boise NF continued to cooperatively work with the Idaho Bird Observatory to conduct avian migration monitoring through support with funding. The Boise Ridge is one of the few known sites where diurnal raptors, forest owls, and passerines concentrate during fall migration. Collected information provides an index to migratory bird population trends, as well as information on migration timing, abundance, habitat use, and stopover ecology on both NFS and State lands in the Boise Front area. Fall migration occurs from mid-August through late October. Data on songbirds is collected beginning in late July and continues through the fall. In 2009, a total of 5, 748 landbirds representing 61 species were captured; 1,223 diurnal raptors representing 10 species were banded; and 182 forest owls representing 4 species were banded (Kaltenecker et al 2009).[13] Details on the 2009 migratory season monitoring effort can be found in the Idaho Bird Observatory final report (Kaltenecker et al 2009). This report summarizes numbers of species captured, work effort output, new species captured, repeated captures, number of visitors to the stations, number of volunteer hours, and analyzes the trend information to date.

Fisher Hair Snare Efforts

Surveys for fishers were conducted on the Forest in 2008 and 2009 following the Schwartz et al (2006) U.S Rocky Mountain Fisher Survey Protocol.[14] In general the protocol is based on the following:

- A Sample Grid was placed over all fisher habitat in the Rocky Mountains (as defined by GAP analysis)
- This Grid is composed of 5 mile x 5 mile (25 mile^2) cells called survey units.
- Survey only those cells in the fisher geographic range with > 50% habitat
- Deploy a minimum of 4 stations per grid for 21 days.

[13] In FY 2007, a total of 5, 771 landbirds representing 56 species were captured; 925 diurnal raptors representing 18 species were banded; and 126 forest owls representing 6 species were banded (Kaltenecker et al 2008). Details on the 2007 migratory season monitoring effort can be found in the Idaho Bird Observatory final report (Kaltenecker et al 2008). This report summarizes numbers of species, work effort, new species captured, repeated captures, number of visitors to the stations, and number of volunteer hours; and provides an analysis of the trend information to date.

[14] Surveys for fishers were conducted on the Forest in 2007 following the same protocol. Three cells on the sample grid were selected on the Emmett Ranger District to deploy hair snare traps. Results from this effort did not detect any fisher.

- Stations should be spaced 0.5 miles apart. Placement of the first station is flexible, but placement of the next 3 stations is conditioned on the placement of the first.
- Stations should be placed in a microhabitat appropriate for fisher (lots of structure, mature trees, riparian areas, etc.)
- Each station consists of 1 hair snare (triangle or square design with gun brushes), collect hair samples
- Send samples to Rocky Mountain Research Station for identification

Seven cells (#326, 546, 858, 624, 625, 777, and 858) on the sample grid were selected on the Emmett, Cascade, and Idaho City RDs to deploy hair snare traps. Results from these efforts did not detect any fisher; however, multiple wolverines, a Forest sensitive species, were detected in grids 858 and 625 on the Idaho City and Cascade RDs, respectively. The Forest will continue to conduct hair snare surveys on remaining grids to determine the distribution of fisher.

The Boise River Wildlife Linkage Partnership (BRWLP)

This partnership is a collaborative group of organizations, agencies, and individuals working to provide, maintain, and establish effective wildlife crossings and other mitigation enhancements through the Warm Springs Avenue and State Highway 21 corridor (22-miles) to maintain habitat connectivity and to reduce wildlife-vehicle collisions and the undesirable impacts they have on people, wildlife, and other resources the Boise River supports. Partners include members of the public, IDFG, Idaho Transportation Department, Boise County, Ada County Highway District, Ada County Parks and Waterways, Rocky Mountain Elk Foundation, the City of Boise and the Boise NF.

Each year 150-210 collisions with mule deer and 5-10 collisions with elk are recorded in this section of roadway. Increased levels of traffic and development in this corridor threaten wildlife connectivity between summer and winter range and compromise safe travel for vehicles on this section of roadway. The elk and deer affected by vehicle mortality on their winter range are animals which inhabit the Boise NF throughout the rest of the year. This section of roadway was identified as a priority area in Idaho to reduce wildlife-vehicle risks.

In 2009, federal stimulus funding was requested by Idaho Department of Transportation to develop a wildlife crossing at Milepost 18 on State Highway 21 to reduce wildlife-vehicle collisions and restore habitat connectivity.

In previous years, the Boise NF was involved in other efforts identifying conflicts between wildlife corridors and human corridors. The IDFG, ITD, and Federal Highway Administration (FWHA) have cooperatively worked on two statewide wildlife-highway projects, including development of a web-based, wildlife-highway mortality database, and wildlife-highway linkage area identification.

All of this work compliments activities undertaken in earlier years, including the Region 4 Flammulated Owl Conservation Assessment, which was initiated as a special earmark in FY 2006. Species Conservation Assessments are one tool to improve management of fish, wildlife, and plant species in the Intermountain Region. Most Forests in the Intermountain Region were assigned a species for which to complete a Conservation Assessment; the Boise NF was assigned the flammulated owl. Under a Challenge Cost Share Agreement, the Idaho Bird Observatory was funded to complete the Conservation Assessment.

Objective WIOB03: *Prioritize wildlife habitats to be restored at a mid- or Forest-scale, using information from sources such as species habitat models, and fine-scale analyses. Initiate restoration activities on priority wildlife habitats to move current conditions toward desired conditions.*

Accomplishment: Projects included restoration of whitebark pine restoration; aspen; big-game winter range; riparian habitat; and habitat restoration with native plant material:

Whitebark Pine Restoration

Whitebark pine is declining throughout its range, primarily as a result of fire suppression and subsequent competition with other conifer species, an introduced pathogen (white pine blister rust), and the mountain pine beetle. Whitebark pine communities are unique high-elevation habitats. The pine seeds for this tree species are large and have a high fat content, providing an excellent source of food for a variety of wildlife at these harsh, high elevation sites. Clark's nutcracker populations are closely tied to the presence of large-seeded conifers. Whitebark pine regeneration occurs via the germination of un-recovered nutcracker caches of species such as the Clark's nutcracker. The decline and loss of whitebark pine habitat on the Boise National Forest is an ongoing concern due to its high value as a food resource.

Pistol Whitebark Pine Restoration Project – Cascade RD: The Pistol Whitebark Pine Project was implemented in FY 2008. This project removed competing conifers in whitebark pine habitat. Within 30 feet of immature whitebark pine trees, competing conifers greater than 3 feet tall with a 5-inch or less diameter were cut, while those between 5-8 inches dbh were girdled. This project enhanced the sustainability of whitebark pine across a 50-acre area by increasing this area's resilience to mountain pine beetle attacks and lowering the risk of tree mortality from a wildfire event.

Scott Mountain Whitebark Pine: This approximately 850-acre project on the Lowman and Emmett RDs reduced competing vegetation and fuel hazards around existing whitebark pine trees, protected crop-tree sized whitebark pine from mountain pine beetle attack, and encouraged whitebark pine regeneration (natural and artificial) on Scott Mountain. The project consists of several types of treatment including full release, modified release, cone tree release, mountain pine beetle brood removal, piling and burning slash, burnout for caching, planting seedlings, and carbaryl spraying. Full release consists of cutting down all small-sized and girdling larger-sized lodgepole pine and subalpine fir trees. Modified release and cone release consist of cutting down all small-sized and girdling larger-sized lodgepole pine and subalpine fir that exist within a fixed distance of live whitebark pine. Slash is either lopped and scattered or hand-piled and burned depending on the density. Burn-outs consist of creating small openings ½ to 2 acres in size to mimic natural fire and encourage Clark's nutcracker seed caching. Brood removal consists of falling and peeling trees that have been attacked by mountain pine beetles. This activity is timed to kill broods developing under the bark and prevent emergence of adult beetles, effectively reducing local mountain pine beetle populations. Whitebark pine seeds/seedlings will be planted in some areas. Carbaryl will be sprayed on the boles of many cone-producing whitebark pine to prevent mortality from mountain pine beetles.

Whitebark pine "ghost trees"
Photo: Nadine Hergenrider

Several treatments were implemented during the summer of 2008 including: 368 acres of release, 57 acres of hand-piling (slash), 34 trees felled and peeled for brood removal, and carbaryl spraying of 520 trees across 400 acres. In 2009 treatments included mountain pine beetle brood removal and thinning preparation for burnout activities.

Aspen Restoration

Aspen is an important browse species for elk during winter, fall and to a lesser extent summer. Recent literature suggests that aspen has declined up to 70 percent in Idaho, primarily through the absence of fire that facilitates conifer encroachment.

Elk calf in aspen stand.
Photo: Scott Bodle

Crawford Habitat Project: This Cascade RD project enhanced existing aspen stands through use of prescribed fire in spring 2009. With housing developments and grazing to the west and south of the project, pockets of aspen habitat are becoming increasingly important on the landscape. Conditions in fall 2008 were too dry to safely implement the burn. The underburn that was implemented is expected to improve promote regeneration of the small groups of aspen found in draws and side slopes throughout the 120-acre project area, and reduce competition by conifers. The large clone at the south end of the project area did not burn under the spring conditions and will require a fall burn in the future in order to improve its vigor.

Whiskey Aspen Project: This Mountain Home RD project removed 75 percent of encroaching conifers on 80 acres of aspen habitat in 2009. In conjunction with implementation of this project, 500 acres of habitat were surveyed for aspen. Aspen stands were inventoried using Region 4 USFS field forms to assess health of the stands and age class. Each stand was perimeter mapped and will contribute to development of an aspen vegetation map.

Winter Range Restoration

Lower Johnson Project: Approximately 10,900 acres of elk and mule deer winter range exists on the Cascade RD near the community of Yellow Pine, including a portion along the East Fork South Fork Salmon River and along the lower reaches of Johnson Creek. This winter range habitat is the only true winter range on the Cascade RD. A total of 78 percent (8,545 acres) of this winter range burned in the 2007 Cascade Complex Fire. Of these burned acres, 2,128 acres burned at high intensity and 2,972 acres burned at moderate intensity. The loss of browse vegetation within the areas burned at moderate or high intensity may result in increased nutritional stress for elk and mule deer wintering in the lower Johnson Creek area until browse species recover. Because nearby winter range on the Payette NF also experienced considerable losses during the 2007 fire season, this habitat on the Boise NF is important and a restoration priority. While replanting efforts within the forested habitat speeds the recovery of seral tree species, this project addresses the lack of browse species (i.e. understory species such as bitterbrush) and targets bitterbrush planting to speed the recovery of winter browse within stands that burned with high or moderate intensity. Approximately 200 acres of burned bitterbrush habitat was identified for planting and a sowing order was placed with the Lucky Peak Nursery for 74,000 container shrubs to be planted in the spring of 2009. All 74,000 bare root bitterbrush seedlings were planted over four days in spring 2009. The plantings will be monitored in spring 2010 to assess survival.

Riparian Habitat Restoration

Native Cottonwood and Willow Stooling Bed Establishment for Riparian Plant Community Restoration: In 2008 cottonwood and willow stooling beds were established at the Lucky Peak Nursery to provide a continual supply of native plant materials for riparian community restoration the

Boise NF. Cottonwoods and willows are key plant community components in riparian ecosystems on the Boise NF. Stooling beds can provide a reliable and continual supply of source-identified native plant material for rooted cuttings, poles and soil bioengineering techniques for bank stabilization (such as fascines, brush mattressing or layering), without depleting the local supply. Cottonwoods and willows are both fast growing species, and harvestable cuttings should be available from the stooling beds within 2-3 years. Approximately 2000 rooted cuttings/year are anticipated to be available for outplanting after the beds reach full productive capacity. High productivity for the cottonwood/willow beds is expected for about 10-15 years, with replacement of material or bed rotation potentially needed after that time. Funding is currently being sought to expand the stooling bed project to encompass a wider range of elevation bands and watersheds, including additional areas of the Boise and surrounding National Forests, other public land agencies that the Nursery serves, and Forest partners in joint restoration projects. Additional species (i.e. dogwoods, spirea, snowberry) adapted to this method of propagation could also be added. Plant materials made available through these efforts will aid in the restoration of the native riparian communities that once dominated the lower elevation river/stream systems of the Boise NF. The project follows national directive and policy on Vegetation Ecology (Forest Service Manual 2070) to restore self-sustaining, weed resistant native ecosystems that support a diverse range of species (including those listed or rare), and protect soil and water resources using native plant materials, as well as that on Ecological Restoration and Resilience (FSM 2020), which aims to re-establish and retain ecological resilience on Forest lands.

Mores Creek Watershed Restoration Project

Eight planting events were held in 2008 to restore degraded riparian habitat along Mores Creek in "Phase II" of this project. Over 700 people participated. Nearly 400 containerized cottonwood, dogwood, alder, willow and thousands of pole cuttings were planted. Most of the work conducted in 2008 was in-stream boulder structures, j-hooks and plantings. Nine large woody debris structures, nine barbs, eight j-hooks, 10 boulder clusters, and 1,700 feet of in stream rock placement was completed. Approximately 0.5 mile of floodplain was created in 2008 and 3,000 cubic yards of mine tailings were removed. University of Idaho students monitored the project, which was continued by another in FY2009. The first annual "Dam Party" attracted 50 volunteers to remove user-developed in-stream dams inhibiting kokanee movement upstream. Kokanee were seen further up Grimes Creek for the first time in several years. The first annual "Kokanee Kraze" was held in Idaho City in August 2009 with education/information booths by various agencies.

Poorman Maintenance Prescribed Burn for Ponderosa Pine Habitat

The Poorman Project on the Emmett RD encompasses roughly 3,500 acres of drier Douglas-fir and ponderosa pine habitats immediately north of the Banks-Lowman Highway. Treated with prescribed fire during the mid-1990s, this area is ready for its first maintenance burn. The primary emphasis for wildlife habitat improvement is to maintain forest characteristics in a condition favoring white-headed woodpeckers, flammulated owls, and winter range habitat for elk and deer. In 2008 stand exam data was collected on approximately 5,082 acres to help inform the NEPA analysis for this project.

Habitat Restoration with Native Plant Material

Under a Challenge Cost Share Agreement, the IDFG collaborated with the Boise NF to collect select grass, forb and shrub seed. Using IDFG volunteers and members of the Idaho City RD's Youth Conservation Corps, the 2008 collection focused on two different watersheds within the Idaho City RD. Seed collection in the Crooked River 5th field watershed was conducted at sites originally established in 2007, with targeted species appropriate to the habitat types in the watershed, including those included in the proposed Becker Vegetation Management project area. The Lower Grimes Creek corridor, a heavily-used section of stream for camping, fishing and other dispersed recreational activities, was a second focus area for seed and plant materials collection. Development of a native

seed/plant material source for this area was recommended in the Grimes Creek Dispersed Recreation Management Plan. The process included determining species to be collected and setting targets for collection volume (i.e., enough plant materials to restore 10 acres upland/5 acre riparian vegetation/1 mile streambank); identifying and marking high priority areas for seed collection or plant donor material; completing ecological site evaluations/plant association identification (to be entered into seed collection database); checking seed/plant phenology; recruiting and coordinating volunteers; harvesting seed/plant propagules, pre-processing of bulk plant materials; and delivering materials to the Lucky Peak Nursery. In addition, wetland plant plugs were extracted from a donor area on Clear Creek (Grimes Creek tributary) and replanted nearby within a user-defined travel corridor traversing Grimes Creek wetlands. Large rocks were used to further deter access through that corridor. Alder, wood's rose, red osier dogwood and sedge seedlings grown at the Lucky Peak Nursery from previously collected local seed were also planted along the creek banks in areas where unauthorized vehicle use was occurring and at a popular dispersed recreation site near the mouth of Grimes Creek. Noxious weeds were removed to reduce spread and reduce competition to newly planted seedlings.

Over 200 pounds of bulk seed was collected in the summer of 2008 from a variety of forbs, shrubs, grasses and wetland graminoids. In 2009, alder seed was collected and processed at the Lucky Peak Nursery. This seed will be used for propagation of container stock/plugs, direct seeding at disturbed sites, or seed increase to make larger volumes of seed available for planned and future projects in the Crooked River and Grimes Creek watersheds. It is expected that seed and plant materials collected during the 2008 field season will provide enough site-specific native plant materials to restore 10 acres upland/5 acre riparian vegetation/1 mile streambank. Stock or seed produced from this collection is expected to available for use beginning in 2010 or 2011. Plugs taken from local donor material in the Grimes Creek watershed and the nursery grown native seedlings were planted at disturbed areas on the Grimes Creek floodplain. Additional plant materials and barriers are needed to further deter motorists from accessing closed routes and to stabilize banks at heavily used sites along the creek.

These projects complement those undertaken in previous years. In FY 2007, four projects to restore riparian habitat were planned and/or undertaken, including the Tripod Meadows Restoration and the Third Pole Integrated Watershed Restoration projects on the Emmett RD, the Sixshooter Road Decommissioning project on the Emmett RD, and the Dollar Creek Restoration project on the Cascade RD. These projects also complement another wildlife habitat enhancement project, the Warm Springs Wildlife Burn, undertaken on the Idaho City RD in FY 2006 and designed to rejuvenate mountain brush communities on big game winter range.

In FY 2008 and 2009, the Forest also continued work on its Wildlife Conservation Strategy (WCS). During Forest Plan Revision, wildlife habitat families that have declined from historic conditions were identified for the Southwest Idaho Ecogroup (SWIE) and Boise NF. Based on an updated multi-scale analysis, the Forest is now prioritizing restoration activities this planning period (i.e., 10-15 years) for those habitat families and associated species identified as being of greatest concern. The process will also prioritize longer-term (i.e., 15+ years) needs of other habitats that have experienced varying levels of decline. In late 2008, the Forest decided to delay the WCS so that an update of the vegetation baseline conditions could be completed and incorporated.

This multi-scale analysis was developed using the principles and science generated in support of the Interior Columbia Basin Ecosystem Management Project (USDA Forest Service et al, 2003a, b; Raphael et al. 2000; and Wisdom et al. 2000), as was the analysis supporting decisions in the 2003 Forest Plan. In addition, this updated analysis incorporates new information generated after the revised Forest Plans were implemented in September 2003. New information being incorporated includes mid-scale assessments such as the Comprehensive Wildlife Conservation Strategies for the

State of Idaho and Utah, respectively (IDFG 2005; State of Utah Natural Resources 2005), and the Conservation Plan for the Greater Sage Grouse in Idaho (2006 Public Review Draft).

The WCS, together with the existing Aquatic Conservation Strategy (ACS) and other Forest Plan direction, will provide a comprehensive strategy for managing the biophysical elements of the Forest.

Documentation concerning this comprehensive WCS will be completed through an environmental analysis documented in an Environmental Impact Statement (EIS). A Notice of Intent to prepare this analysis was published in the Federal Register in September 2007, with corrected NOIs published in December 2008 and April 2009. A decision is anticipated in July 2010.

Objective WIOB04: *Coordinate animal damage management with the Animal and Plant Health Inspection Service (APHIS), in compliance with USDA Wildlife Services' most current direction for southern Idaho.*

Accomplishment: The Forest wildlife biologist meets annually with the Animal and Plant Health Inspection Service (APHIS) to review actions taken over the prior year and to review the annual operating plan for the current year. In 2008 the acting Forest wildlife biologist met with APHIS during February. In 2009 the annual meeting took place on April 17, 2009 at the offices of the Wildlife Services-APHIS staff. The Forest range staff officer also attended these meetings.

Objective WIOB06: *Enhance public awareness of wildlife habitat management and species conservation through educational and interpretive programs.*

Accomplishment: As in 2004, 2005, 2006 and 2006, the Boise NF in 2008 and 2009 hosted an International Migratory Bird Day event with the IDFG, the Idaho Bird Observatory, the National Wildlife Federation Habitat Program and the Golden Eagle Audubon Society at the MK Nature Center in Boise. The 2008 and 2009 International Migratory Bird Day events marked the sixth and seventh years, respectively, that the Boise NF helped host this event. Approximately 750 people participated in the event in 2008 and 2009, respectively. The Emmett RD wildlife biologist coordinated the Forest's participation in the event. The Boise NF staffed three demonstration tables. These illustrated varying adaptations that birds have for catching their food ("Fill the Bill"), some of their amazing physical attributes ("Bird Olympics"), and some of the challenges they face during migration ("The Great Migration Challenge"). In addition to International Migratory Bird Day, educational presentations were conducted on all RDs and in the Supervisor's Office during FY 2008 and 2009. Presentations included nature walks, bird watching trips, classroom visits, informative handouts and interest group talks, and covered topics as diverse as bald eagles, ecosystem management, wildlife winter adaptations, invasive species, and "kids in the woods." Educational resources regarding wildlife and wildlife habitats were also made available to answer public questions.

As noted under WIOB01, the Forest also continued funding towards the maintenance and operation of the Idaho Bird Observatory, thereby supporting not only continued long-term monitoring of migrating raptors and songbirds but also the educational opportunities provided to the public who come to observe and volunteer, and in doing so, enhance their awareness of wildlife habitat management and species conservation.

An interpretive display developed for the Lowman RD front office was developed in 2008 to provide an opportunity for the public to learn about wildlife and wildlife habitats such as whitebark pine. Plaster casts were made of several wildlife species tracks. A chipmunk skeleton was placed in a Riker mount. Whitebark pine cones and bear scat with whitebark pine cone fragments were collected. A

brochure describing how to make plaster casts of tracks was developed. All items are on display in a lighted glass-front cabinet, along with trivia related to the tracks, the skeleton, or whitebark pine. The brochure is available for anyone interested in making their own plaster casts from tracks. Tracks include those made by black bear, coyote, domestic dog, wolf, mountain lion, deer, elk, moose, bald eagle, turkey vulture, blue heron, raven, and Canada goose.

The *Snow School* was again offered in 2008 and 2009. The *Snow School* consisted of multiple programs providing an opportunity for Idaho schoolchildren to learn to appreciate and understand the winter environment on the Boise NF. The programs were developed in partnership with Bogus Basin, Winter Wildlands Alliance, Boise Watershed, Foothills Learning Center and numerous other local partners. Boise NF staff helped lead snowshoe tours at Bogus Basin for kids and teachers. Participants looked at animal tracks, snow crystals, and different plant communities. Programs focused on plant and animal adaptations to winter, in addition to human safety and winter survival. These programs continue to be very popular.

In 2008 and 2009 an environmental education event was held at the Cascade RD to connect students in the Cascade community with wildlife and their habitats. The objective was to teach young people about the wildlife species that live in the nearby Forest, with a focus on fisher, wolverine, pine marten, and bald eagle. A portion of the day was spent visiting several bald eagle nest sites and viewing bald eagle adult and nestling behavior. Upon arriving at a site, participants were asked to try to find the nest themselves with binoculars and spotting scopes. After a few stops at different nests they became adept at finding the nests themselves. The group also viewed and identified numerous waterfowl on Cascade Reservoir, from herons to pelicans to western grebes to wood ducks. In the afternoon the group traveled to the Warm Lake area to teach the kids how to construct a fisher hair-snare cubby trap, as well as set up a digital motion camera to photograph species such as fisher, wolverine or marten that might visit the trap. Students were taught how to choose a strategic place for a fisher trap, how to bait it, camouflage it, and how to set the camera so it detects the animal at the trap.

Informational kiosks have been constructed and installed at the Mores Creek Summit parking area and the Rabbit Creek trailhead to foster an increased public awareness and appreciation of resource values at high elevations and Tread Lightly/Leave No Trace principles that encourage responsible riding, and a decrease in off-trail use and resource damage by motorized vehicles. Interpretive materials were prepared for the panels in 2009. They provide information and images on the ecology of high elevation plants and animals, and the Tread Lightly and Leave No Trace principles, emphasizing appropriate OHV riding etiquette. An area map developed in 2009 assists users in selecting roads/trails appropriate for their specific type of use. Log barriers defining the parking area were installed at the Rabbit Creek trailhead. Multiple tracks that led from the previously ill-defined trailhead have been blocked, and new erosion control waters bars are in place. The kiosk was located in such a way as to block closed routes and to funnel traffic to a single track.

For more detailed descriptions of the many interpretive and education presentations conducted in 2008 and 2009, the Wildlife, Fish, and Rare Plant Management System, a reporting database, is available to the public on the internet at http://www.fs.fed.us/biology/managementsystem/index.html. The site includes descriptions of educational and interpretive programs on the Forest and photos of some of the events described above.

Objectives WIOB08 *Continue to map locations of species occurrence and habitat for MIS and Region 4 Sensitive species during fine- and site/project scale analyses. Incorporate information into a coordinated GIS database, including FAUNA, and coordinate with the Idaho Conservation Data Center.*

Accomplishment: Activities that helped accomplish these objectives were focused on summer wildlife field crew surveys; sage grouse telemetry study; great gray owl nest platforms and monitoring; and goshawk monitoring, as summarized below:

Summer Wildlife Field Crew Surveys

As in earlier years, a portion of the wildlife program funds were used to pay for two summer seasonal biological technicians to assist the Forest wildlife biologist and Districts with wildlife program work in FY 2008 and 2009. In 2008 a four-person wildlife crew worked on four of the five ranger districts: Emmett, Mountain Home, Idaho City and Cascade to collect species occurrence and habitat data for MIS and Region 4 sensitive species, often in association with restoration projects. On the Idaho City RD, 134 stations in the Becker project area were surveyed for flammulated owls (sensitive species). Detections were made at 81 stations and the area surveyed encompassed approximately 12,763 acres. In addition, wildlife habitat surveys were completed on approximately 4,123 acres (87 stands) in the Coulter project area; 1,191 acres (27 stands) in the Becker project area were surveyed for snags/possible flammulated owl nest trees; and 319 acres were surveyed for northern goshawks (sensitive species). Three northern goshawk nest sites were visited to assess occupancy and reproductive status on the Idaho City RD. On the Cascade RD, approximately 9 acres of cliff were surveyed for peregrine falcons and habitat data was collected on 70 point count stations for seven MIS woodpecker survey routes (Alpha, Bull Creek Hot Springs, Sloan's Point, Warm Lake, Yellowpine, Rice Peak, and Log Mountain). On the Emmett RD, crews surveyed the Tripod Meadows area for northern Idaho ground squirrels (federally threatened species); checked two northern goshawk nests for occupancy and reproductive status; monitored the bald eagle nest at Sagehen Reservoir for reproductive status; surveyed 43 stations in four locations for flammulated owls and found 12 detections; and collected habitat data at 40 points on four MIS survey routes (Lightning Ridge, Anderson Creek, E. Fork Horn Creek, and Rattlesnake Trail). Work conducted on the Mountain Home RD included surveying 30 stations for flammulated owls in the Shafer and Cottonwood areas; checking one northern goshawk nest for occupancy and reproductive status in Cottonwood; and surveying approximately 1,100 acres for potential burrowing owl, pygmy rabbit, and greater sage grouse habitat.

In 2009, two 2-person seasonal wildlife crews worked on all five Ranger Districts to collect species occurrence and habitat data for MIS and Region 4 sensitive species, often in association with restoration projects. Their efforts resulted in the location of: two northern goshawk nests; one flammulated owl nest; and two bald eagle nests. During the field season 113 calling stations were surveyed for northern goshawks and 80 calling stations for flammulated owls. Forty flammulated owls were detected during surveys. Surveys of 13 talus slopes in the Trinities, Rice Peak, and Cabin Peak areas were conducted to identify occupied habitat and distribution on the Forest for pika, a species under review by the USFWS in 2009 to determine if the species is warranted for listing. Peregrine falcon surveys were completed in the Needles area of the Cascade RD. Crews completed surveys for northern Idaho ground squirrels on West Mountain; 500 acres of aspen surveys on the Mountain Home RD and set out 14 fisher hair snares and three remote cameras to survey for fisher on Idaho City and Mountain Home RDs. In addition, crews collected habitat data on point count stations for seven MIS survey routes. Lastly, surveys were conducted for potential burrowing owl, pygmy rabbit, and greater sage grouse habitat. These species are species of greatest conservation need in Idaho (IDFG 2005) and/or sensitive species on the Forest. This work complements work accomplished in 2006 and 2007, during which the wildlife crew documented and mapped new species locations for MIS and Region 4 Sensitive species. Occurrence information is provided to the Idaho Conservation Data Center by District wildlife biologists throughout the year.

Wolverine Winter Recreation Study
In 2009 the Forest, along with the Payette and Sawtooth NFs and the Rocky Mountain Research Station, began pursuing a greater understanding of the impacts of winter recreation on wolverine by initiating an aerial survey across the three Forests to document the presence and distribution of wolverine, snowmobile, and skier activity. At issue is the concern that winter recreation may disturb or displace reproductive denning females. The survey area was delineated by the distribution of potential wolverine habitat overlaid by a 10 km x 10 km grid. Each of 146 cells was over-flown by helicopter wherein observers recorded instances of wolverine tracks and snowmobile and skier presence. Approximately 40 hours of helicopter time was required to survey all grid cells. Surveys confirmed spatial and temporal overlap between the species and winter recreation activity. Wolverine tracks were observed in 20 grid cells; evidence of snowmobile activity occurred in 84 cells; and skier presence was evident in 14 cells. These results support the initiation of an investigation to evaluate the relationship between wolverine and winter recreation. This investigation will begin implementation in 2010.

Amphibian Surveys
Six amphibian species are known to occur on the Lowman RD including Idaho giant salamander, long-toed salamander, Columbia spotted frog, western (boreal) toad, Pacific chorus frog, and Rocky Mountain tailed frog. Few surveys have been conducted and only incidental records of the species have been documented. In 2008 surveys were conducted to determine the presence of sensitive and focal species at proposed stream restoration and culvert replacement sites, and to begin surveying for and documenting breeding sites. In addition, monitoring occurred during implementation of the Wapiti Creek Aquatic Organism Project where a double culvert was replaced with a single, bottomless arch. Formal surveys were conducted along portions of Fir, Bear Valley, Casner, and an unnamed creek in Bear Valley. In addition, breeding was documented at a number of pond, seep, and spring sites. While the two focus species were spotted frogs (sensitive species) and western toad (Boise NF focal species), all amphibians were documented. The surveys resulted in numerous detections of western toad and spotted frogs. Pacific chorus frogs and long-toed salamanders were also detected. Breeding was confirmed at 20 different sites.[15] Seventy-six tailed frog larvae were captured and moved during the stream diversion on the Wapiti AOP project.

Sage Grouse Telemetry Survey
No additional reporting has been done for FYs 2008 and 2009. In 2007 the Boise NF entered into an ongoing study begun in 2006 by the BLM and IDFG to obtain baseline information on greater sage grouse movement and habitat use by radio collaring birds at leks during the breeding season.

This work supplements that undertaken in FY 2005 and 2006. In April 2005, the Boise NF partnered with the BLM to conduct aerial surveys on NFS and BLM lands for sage grouse lek sites. The purposes of this project were to identify active leks in areas where little or no information on sage grouse exists, and to assess the presence of the species on existing leks. Aerial surveys in 2005 were conducted in the Danskin Mountain and Little Camas Prairie areas. No activity was observed on historic leks; however, three new leks were documented. A total of 23 birds were counted on the lek site that may be on BLM lands, while 41 birds were counted on the lek site that may be on the Boise NF, and the lek on private lands had 19 birds. Two of the three leks require further validation to confirm land ownership since each was close to either BLM or NFS lands.

Because survey protocols generally require repeat surveys over a distinct timeframe to successfully locate lek sites, a repeat of this project was planned for 2006 to ensure the Boise NF lands were

[15] 4 Pacific chorus frogs; 10 western toads; 8 Columbia spotted frog; 1 Rocky Mountain tailed frog; and 5 long-toed salamanders.

adequately evaluated. However, 2006 spring weather conditions affected the availability of survey days. Equipment breakdowns resulted in more delays, pushing the survey period to the end of the breeding period window. To avoid collecting poor quality data, no surveys were conducted during the 2006 breeding season.

Great Gray Owl Nest Platforms and Monitoring

The great gray owl is identified by the Regional Forester in Region 4 as a sensitive species on the Boise NF indicating a concern for the species. On the Lowman Ranger District, Bear Valley, with its extensive mature forests intermixed with large natural meadows historically provided breeding habitat for great gray owls. The Red Mountain Fire in 2006 and the Sheep Trail Fire in 2007 significantly reduced the availability of nesting sites for great gray owls. Nesting habitat has been further reduced as mountain pine beetles move into the area from the east near Stanley. Fifteen nest platforms, which include seven nest platforms installed in 2007,[16] along with the remaining eight platforms installed within two Sale Improvement Areas from 2000 and 2001, were monitored during June 2008. A heavy snow year and cool spring delayed snow melt and access to the sites until the second week in June. None of the platforms were occupied at the time of the June visits. No evidence of recent use was found at any of the sites, including those used consistently in past years. The nesting platforms installed in 2007 enhanced 700 acres of habitat.

In 2007 nests were monitored in early June. One nesting platform was lost in the Red Mountain fire. Four of the remaining nest boxes were occupied in 2007. This is the highest number of occupied platforms recorded since installation.

In previous years, the nesting platforms were checked in 2000 and 2001 for use and in 2005 were monitored for the first time since. Of the nine platforms, in 2005 two were occupied by great gray owls and a third showed evidence of prior use (feathers and pellets at the nest site). One nest had three young still in the nest and the other nest had one owl nestling at the time of the first visit. A return visit made to each of the occupied nests prior to the end of June found the owls had fledged from the nest with three young, one of which was located within a short distance of the nest. This monitoring verified that great gray owls were able to use the artificial nesting platforms and successfully fledge young from them.

Monitoring efforts for the Lowman RD great gray owl nesting platforms in spring 2006 was delayed by late snowmelt in Bear Valley; however all nine nesting platforms were relocated in late-June. No evidence was found to suggest that any of the nests had been used in 2006. One nest tree had died during the past year. Another nesting-platform tree was within the 2006 Red Mountain Fire perimeter. Although monitoring in 2006 did not occur until late June and in 2005 at this same time great gray owl young had fledged from the nests, evidence of nest use should have been present if the platforms had been utilized this season.

Goshawk Monitoring

The northern goshawk is identified as a Forest sensitive species by the Regional Forester in Region 4. Monitoring of known northern goshawk nest sites occurs across the Forest. The first check is made in May and subsequent visits occur in June to August to determine survival and to document juvenile locations post-fledging. Broadcast calls are sometimes used to locate goshawks post-fledging. On the Lowman RD nest sites were visited at least once to determine whether the nests were occupied,

[16] Great gray owls do not build their own nests. The species uses any suitable available site, including abandoned stick nests from other large species; large, broken-topped snags; mistletoe platforms; and artificial nesting platforms. The objective of the project is to enhance nesting opportunities for great gray owls displaced by the effects of the fires and mountain pine beetle activity.

whether young were present in the nests, and to determine the number of young that survive to fledging. A total of 116 calling points were surveyed in 2008. One sharp-shinned hawk, three Cooper's hawks and 1 'possible' northern goshawk were detected. Goshawk surveys were conducted in the Clear Creek Stewardship Project area and in the Road Fork nesting territory. In addition, a spur off NFS road 500 was surveyed after a sighting of a goshawk was reported. Known nesting territories were also monitored. Thirteen nests in four territories were monitored. None were occupied in 2008.

On the Emmett RD during 2008, seven sites were surveyed for northern goshawk reproductive activity. No activity was detected at six historic nest sites; one site was active, however no nest was located. In 2009, the District wildlife biologist position was vacant and no sites were monitored.

One new goshawk nest was located in 2007. Only one of three historic goshawk nesting territories was occupied in 2007. Based on sign at the occupied nest site, eggs were laid and young hatched, but is unknown whether the young survived to fledging.

On the Emmett RD during FY 2006, eight sites were surveyed for northern goshawk reproductive activity. One historic nest site was documented as active, and at three historic nest sites northern goshawks were detected but their current year nest sites were not located. One goshawk was detected at a suspected new nest site; no nest was found. No detections were found at remaining sites.

One northern goshawk nest on the Cascade RD, discovered in 2004, was monitored in 2006. Although the pair was present in 2005, they did not appear to have returned in 2006. This nest was blown out of the tree sometime in 2005 and surveyers could not locate this or alternate nests. In addition to monitoring this nest site, the 2006 wildlife field crew completed approximately 265 northern goshawk survey points over 3,900 acres on the Cascade RD, as described above.

This mapping of species occurrence and habitat locations complements other activities accomplished in previous years, including flammulated owl research, conducted in partnership with Boise State University, and development of a peregrine falcon model in conjunction with the IDFG.

Garden Valley Rocket Box Bat Houses

In August 2007 bat houses mounted on a barn at the Garden Valley Work Center were re-located so the barn could be painted. Following relocation, the roughly 100 bats that were displaced did not use the houses, likely because the houses had been relocated to a site with different characteristics than the barn site (less open foraging area, lower height of roost from ground, cooler aspect and exposure). Bats were subsequently detected in another shed within the compound following the relocation. An alternative design bat house that could be placed near the barn but without attaching it to the structure was needed. Three rocket box bat houses were purchased and installed on stand-alone poles during the spring of 2008 to attract displaced bats. Although the houses were checked for occupancy periodically throughout the summer, bats were first observed using one of the houses at the end of August 2008. Wasps have built nests in portions of the structure, reducing the amount of space available for the bats. Houses will continue to be monitored and cleaned and occupancy is expected to increase during subsequent years. In 2009, because the District wildlife biologist position was vacnt, these structures were not monitored or maintained.

Cottonwood Guard Station Bat Houses

A maternity bat colony currently occupies the historic Cottonwood Guard Station on the Mountain Home RD. This site will be sealed during the winter of 2009 once the bats have left for their winter hibernacula. In 2008 eight bat houses were installed before the fall bat departure to familiarize them with the new roost habitat.

Bat Surveys

Bat surveys were conducted at two abandoned mines in partnership with the IDFG in 2009. Because of the difficulty in analyzing bat call data without a good reference library, in 2009 a contract with the Idaho Conservation Data Center at the IDFG was entered into to develop a Boise NF Bat Call Library. The purpose of this project is to create a sound catalog of calls emitted by positively identified bat species recorded on the Forest. Calls from this library can contribute to a larger effort to create a bat call library for all of Idaho.

Objective WIOB09: *During fine-scale analyses, identify and prioritize opportunities for restoring degraded MIS and Sensitive species habitat.*

Accomplishment: As in earlier years, in 2008 and 2009 several projects designed to restore degraded MIS and sensitive species habitats were identified. Many of these projects integrate wildlife resource restoration needs with vegetation and fuels resources, including the following on the Lowman and Emmett RDs:

Lowman RD

The Wapiti Blue project integrates habitat restoration, fuels reduction, fish habitat improvements, and recreational improvements. The District wildlife biologist was actively involved in designing the project and coordinating efforts with other resources. Wildlife enhancement proposals include release and restoration of aspen, and restoration of low elevation ponderosa pine forests (white-headed woodpeckers, flammulated owls). Funding in 2008 and 2009 continued to support accomplishment of planning (NEPA) for this project and to ensure consistency with the anticipated Forest's Wildlife Conservation Strategy.

Bear Valley, which provides habitat for several endangered, threatened and sensitive species, had been free of noxious weeds until about 2003 when two small infestations of rush skeleton weed were discovered, one in Sack Meadows and a second at the head of Bear Valley Creek near the Clear Creek (NFS 582) road. Since that time, rush skeletonweed has become established along 13 miles of the Clear Creek road. Seed from these roadside infestations was likely inadvertently transported by vehicles into Bear Valley. A recent project treated the skeletonweed plants in Bear Valley and all noxious weeds along the Clear Creek portion of the NFS 582 road to reduce the potential for weed spread into Bear Valley. Implementation of this project will reduce the existing small, populations in Bear Valley and the potential spread of noxious weeds, thereby allowing native plant communities to continue to provide habitat for a variety of wildlife.

The Casner Creek Prescribed Burn Project is part of a larger landscape, integrated resource project that includes treatments for restoration of vegetation, enhancement of wildlife habitat, reduction of fuels, removal of a fish barrier, and decommissioning of roads not needed for future management. The objectives for the burn include reintroducing fire as an ecological process to the low-elevation, dry ponderosa pine and Douglas-fir forests; maintaining and promoting development of mature, ponderosa pine dominated stands; reducing fuels and the potential for stand-replacing fire events; and encouraging sprouting and regeneration of decadent aspen clumps. The project is being implemented in two phases. The first phase treats the forested, southeast- and west-facing slopes using high fuel moisture and/or snowfields on more northerly aspects to control fire spread. The second phase treats portions of the northerly aspects and the transition areas between aspects where dense stands of Douglas-fir dominated. Phase I was implemented on May 10, 2008. Rocky Mountain Elk Foundation (RMEF) provided funds in support of the project and implementation of Phase I. Fire was ignited from a helicopter using a mount Plastic Sphere Dispenser (PSD) that drops small, chemically-filled plastic spheres. A low to moderate intensity fire was reintroduced to the landscape, effectively reducing ground fuels in the treatment area (needles, litter, and twigs) and preparing the area for

Phase II burning. Most tree mortality occurred in the smaller diameter tree classes (ladder fuels). A mosaic pattern of fire effects occurred in both the overstory and understory vegetation, resulting in a diversity of structure and age classes. Perennial herbs, grasses, and shrubs are responding with new growth and shoots from established root systems or seed banks.

The Clear Creek Stewardship Project is an integrated resource project with multiple resource objectives to be identified by vegetation, fuels, wildlife, fish, watershed, and recreation. The project is in the early planning phase, and wildlife funds are being used to conduct initial wildlife surveys and to identify wildlife project objectives. Surveys were conducted for several sensitive or MIS species.. Data was collected at new sites for goshawks and pileated woodpeckers. Roads and trails were inventoried to identify concerns or problems related to wildlife and access management. Potential wildlife projects were identified and include restoration of low-elevation old forests, broad-elevation old forest, aspen, whitebark pine, riparian (Lowman Fire), and ungulate winter range. One new goshawk nesting territory was located and data collected at the new nest site. A pileated woodpecker nest was located and site data collected. Additional flammulated owl breeding habitat was identified. The information and data will be used to develop a proposed action; and will also be used in verifying models and assumptions used during project analysis.

This work complements that undertaken in previous years on the Lowman RD:

- The Oxbow Aspen Restoration Project is part of a landscape-scale prescribed burning project to re-introduce fire disturbance in a declining aspen stand and encourage aspen sprouting. The first phase of this project was implemented in early May 2006. Fire burned through the aspen with moderate intensity and successful sprouting is anticipated.

- During planning for the Rock Creek Integrated Resource Project, several roads were identified for decommissioning. The roads were contributing to degradation of aquatic and terrestrial habitat through direct sediment input, fragmentation of habitat, conversion of habitat to road, and loss of snags. Approximately 6.1 miles of roads were closed and rehabilitated to reduce erosion, allow vegetative recovery of the road bed, improve riparian conditions, and reduce the loss of snags to firewood gathering. A road (2.3 miles) located within a riparian area was rehabilitated by re-contouring (200 feet), repairing the drainage, breaking up the roadbed, placing woody material, and seeding and mulching. Road closures will reduce the risk of snag loss of at least 60 acres of habitat for two sensitive species: flammulated owl and white-headed woodpecker.

Emmett RD

The Scriver Creek Integrated Restoration Project is a multi-resource effort that will benefit wildlife, hydrology, vegetation management, and fuels reduction. The NEPA analysis for this project was initiated in 2007, and some NEPA work occurred in 2009. Baseline wildlife surveys have been conducted in 2006 and 2007. Sensitive species documented in the project include white-headed woodpecker, flammulated owl, and northern goshawk. The pileated woodpecker, a management indicator species, has been documented in the project as well. Camera bait-station surveys did not detect any rare furbearers. In 2008, a follow-up survey was completed to gather habitat and reproductive data for the northern goshawk nest site in this project; in addition further flammulated owl surveys occurred. Restoration of ponderosa pine habitat and fire processes in the southwest portion of this project area is a priority in this project. Benefits to wildlife species will result from thinning stands that are currently denser than they were historically.

The Third Pole Integrated Watershed Restoration Project is a collaboration of multiple resources including wildlife, watershed, fisheries, recreation and range to improve habitat in the Upper Squaw

Creek watershed. NEPA analysis for this project was completed in 2007. Wildlife habitat is being improved by closing roads; closing, improving and relocating dispersed recreation sites; and improving riparian fencing and revegetating stream banks in the Third Fork and main stem Squaw Creek stream systems. Wildlife concerns due to negative road-associated factors[17] were used to design the proposed actions for this project. In 2008, 7.7 miles of road were decommissioned and 1.9 miles were converted to trail (0.4 mi) or changed from a seasonal closure to a yearlong closure (1.5 mi). Decommissioned roads were signed as closed to motorized vehicles and either recontoured and/or ripped or left to natural reclamation. Seed and straw mulch were applied to disturbed portions to encourage re-vegetation. In 2009 two gates were installed on roads that will now be managed as year-long closures. Approximately 1,400 acres of habitat have been improved to date. MIS and sensitive species such as the white-headed woodpecker, flammulated owl, and pileated woodpecker will benefit from this project.

The Big Pine Habitat Restoration Project is a multi-resource effort to benefit wildlife, timber management, and fuels reduction. Activities in 2008 included conducting some continued baseline wildlife data collection (pre-project proposal), and interdisciplinary team meetings and a field review. The northern goshawk site found in 2007 was assessed for occupancy and reproductive status in 2008. Similar to the Scriver Creek Project, this project will begin to restore vegetative conditions to their historic range of variability by opening up stand canopies and favoring retention and development of medium and large tree size classes. This can benefit wildlife species such as the white-headed woodpecker and flammulated owl (sensitive species). Furthermore, the southern portion of this area coincides with big game winter range and could be managed to improve forage conditions.

These projects add to other accomplishments in previous years, including the Airline vegetation project on the Emmett RD, a multi-resource endeavor that will benefit wildlife, timber management, and fuels reduction.

Idaho City RD

The Becker Vegetation Management Project is a multi-resource effort for wildlife and vegetation restoration of ponderosa pine and mixed conifer forest communities. Field data was collected in 2008 for flammulated owls. A total of 134 calling stations covering 12,763 acres weresurveyed, and 81 flammulated owls were detected in the project area. Goshawk surveys were completed for 13 stands (319 acres); no birds were detected. Surveys for wildlife snags (potential nest trees for flammulated owls) were conducted on 1,197 acres (27 stands); 87 snags were marked as wildlife trees. This project will reduce uncharacteristic stand densities and begin to restore vegetative conditions to their historic range of variability by opening up stand canopies and favoring retention and development of medium and large tree size classes. This will benefit wildlife species associated with these conditions such as the white-headed woodpecker and flammulated owl, as well as mule deer, elk and cavity nesting species. In 2009, 13 flammulated owl stations were surveyed in the project; two owls were detected. NEPA planning for this project continues.

Similar to the Becker Vegetation Management Project, the Coulter Project is proposed as a multi-resource effort for wildlife and vegetation restoration. Data collection for this project was initiated in 2008; 4,123 acres (87 stands) were surveyed for wildlife habitat. In 2009 goshawk (sensitive species) calling surveys were conducted; 46 points were surveyed. A total of 22 calling stations were surveyed for flammulated owls (sensitive species); 13 birds were detected.

[17] Snag reduction, downed log reduction, habitat loss and fragmentation, negative edge effects, harassment or disturbance from humans, and displacement or avoidance of habitat.

Surveys for northern goshawks and flammulated owls (both sensitive species) were conducted in the Little Ophir project area in 2009. One goshawk nest was found in the project. Additional goshawk surveys were conducted to determine use of the area by this species. A total of 63 stations were called for northern goshawks; no further detections were recorded. A total of 45 flammulated owl calling stations were surveyed; 25 birds were detected in the project. Snag surveys were conducted throughout the project area.

This project adds to other accomplishments in previous years, including the Mores Creek Rehabilitation Project, an integrated project for vegetation, soil and water, fisheries and wildlife resources to improve riparian habitat conditions along portions of Mores Creek near Idaho City where long-term effects of historic gold dredge mining continue to retard the development of riparian vegetation and normal stream dynamics due to remnant cobble piles created during the dredging process.

Cascade RD

The Spruce Creek project includes a component to enhance aspen on 89 acres and whitebark pine across 556 acres. Proposed habitat enhancement would be accomplished by removing competing conifers in both vegetative communities. Planning for this project may resume after the Forest Plan amendment adopting the WCS is completed (see objective WIOB03 above).

Objective WIOB10: *Update appropriate NRIS database modules for sensitive species' occurrence and habitat on a biennial basis to incorporate the latest field data.*

Accomplishment:

The Forest's ability to complete data entry into the NRIS WILDLIFE corporate database (formerly known as FAUNA) continues to be challenged by staffing and funding. In the interim, individual Ranger Districts have continued to maintain District databases. On the Lowman RD all previous survey and sighting records for documentations of Threatened, Endangered and sensitive species; Boise NF focal species; and Idaho species of greatest conservation need were reviewed. Records with adequate location information were put into a local GIS database in preparation for transfer to the WILDLIFE database. In addition, all new sightings and surveys were entered so that the database remained up-to-date. Habitat data was also collected at three pileated woodpecker and seven northern goshawk nesting sites.

Objectives WIOB11 and 12: *Work with Idaho Department of Fish and Game to address their species plan objectives when Forest Service management activities may affect those objectives. (WIOB11) Implement temporary, seasonal, or permanent area and transportation route closures through special orders to address big game vulnerability and public access needs. Coordinate closures with appropriate state agencies, other federal agencies, and tribal governments. (WIOB12)*

Accomplishment: The Forest continued to work with the IDFG in 2008 and 2009 to ensure appropriate components of the Idaho State Comprehensive Wildlife Conservation Strategy are incorporated or referenced in the upcoming Forest Plan amendment to include a Wildlife Conservation Strategy.

In FY 2008, the Forest completed a travel management analysis for the Mountain Home RD and in FY 2009, for the Emmett and Idaho City RDs. These decisions completed designation of a system of motorized routes to provide public access while protecting other important resources, including big-game vulnerability.

The South Fork Salmon River Cabin Creek Road Rehabilitation Project on the Cascade RD closed 9.8 miles of road in the Upper South Fork Salmon River drainage to prevent access on to the NFS road systems 401C, 487, and 467A. Because this area burned in 2003, elk hiding cover within this drainage is currently severely limited. NFS roads 487 and 467A were decommissioned, and their roadbeds re-contoured and littered with slash for the first quarter mile. This project has resulted in increased elk and mule deer security within an approximately 852-acre area. Since decommissioning, neither the 487 nor the 467A road has experienced motorized vehicle use.

NFS road 401C was evaluated for recontouring but is visible for greater than a quarter mile in length and has some live regeneration in the road prism beneficial to retain. Instead ponderosa pine, Douglas fir and Englemann spruce saplings were planted on approximately 2 acres between the paved NFS road 474 and the open view of NFS road 401C. The area will be monitored for unauthorized access throughout the next next years until the saplings become established and are large enough to block the view of the NFS road 401C road.

Also on the Cascade RD, the South Fork Salmon River Recreation Access Management Project is a larger-scale project with multiple smaller implementation components, one of which involves decommissioning approximately 18.4 miles of existing spur roads within the Dollar Creek subwatershed. This activity would significantly reduce elk, mule deer and other wildlife species' vulnerability within the watershed from unauthorized off-road vehicle (ORV) use occurring on these closed roads. The Dollar Creek drainage, its headwaters, and small high elevation basins have historically been an important elk and deer rearing area, likely because of its broken topography, mosaic of foraging and cover habitat created by recent wildfire activity, and its relative remoteness. The Dollar Creek drainage is also an important migration corridor in the fall/early winter for elk moving from the Six Bit, Trail, Curtis, and Gold Fork drainages. The drainage has been a popular destination for elk hunters both on foot and on horseback during the bow and rifle seasons, and hunting camps are commonly present downstream from the North Fork Dollar Creek from August through October. Most hunters prefer to park their vehicles, camp at the existing developed area near the North fork of Dollar Creek, and access the Dollar Creek Way trail (NFS trail 04114). Some road decommissioning was completed in FY2009, with the remainder anticipated in FY2010.

These projects complement those undertaken in previous years. For example, the multi-funded Lowman RD access management program that manages seasonal road and trail closures that help reduce disturbance to wildlife during vulnerable periods of their life and/or improving habitat conditions such as disturbance in elk calving areas, deer/elk winter ranges, and at bald eagle nest sites. Fall road and trail closures reduce the vulnerability of big game species, especially deer and elk, to harvest during the fall hunting season and help to support IDFG’s deer/elk population objectives. About 21 structures and closures are monitored each season. Travel management signs and gates are assessed and maintained and closures are monitored for effectiveness. If closures are ineffective, plans are developed and implemented to make the closure more effective. The District wildlife biologist, recreation forester, and roads coordinator work cooperatively in these efforts. The Squaw Creek Corridor Elk Vulnerability Reduction Project on the Emmett RD benefits elk and deer by reducing vulnerability during the hunting season through effective access management on roads that currently have closure orders.

VEGETATION RESOURCES Objectives (Forest Plan, page III-30)

Objective VEOB01**:** *During fine-scale analysis, identify and prioritize areas for regeneration of:*

a. Aspen in both climax and seral stands and as a seral component of coniferous stands
b. Native herbaceous understory in shrub communities
c. Woody riparian species
d. Western larch
e. Whitebark pine

Accomplishment: The Boise NF completed the Lime Creek Aspen Restoration Project on the Mountain Home RD. In addition to projects focused on restoring aspen, the Forest has been engaged in a number of efforts to restore whitebark pine. These include cone collection, silvicultural treatments to release trees from competition with climax species such as subalpine fir, tree planting and spraying carbaryl to help protect trees from mountain pine beetle attacks. Of particular focus was the Scott Mountain area where various components of the Scott Mountain Whitebark Pine Restoration project have been implemented. In addition, trees that have been identified through a national effort as potential candidates for development of blister rust resistant seed stock were sprayed across the Forest. The Lowman RD has also been collaborating with The Wilderness Society to conduct regeneration monitoring in the 2007 Red Mountain wildfire area to identify and quantify potential whitebark pine germination from Clark's nutcracker seed caches. Western larch was also planted on the Forest. In 2008 and 2009, approximately 460 acres of western larch were planted on the Cascade RD.

Objective VEOB05**:** *Promote partnerships and cooperation with state and federal agencies, tribal governments, and with other interested groups through coordination, cost sharing, and cross-training for assistance with vegetation inventory, classification, monitoring, and other activities as needed.*

Accomplishment: The Boise NF has continued vegetation inventory and classification work within riparian and sagebrush habitats in partnership with the Idaho CDC. These efforts, and their importance to future Forest Plan project implementation decisions, are briefly discussed below:

Riparian Habitat Inventory and Classification Project
In partnership with the CDC and the Payette NF, the Boise NF is implementing a large-scale Riparian Habitat Inventory and Classification Project on the Boise NF. Data collection for this project, initiated as a pilot study in 2002, was completed in 2008. A draft classification is expected in the spring of 2011 for field testing. This project will contribute to further understanding of wetland and riparian resources on the Forest, including habitats that may support special status species or unique plant communities. It will also serve to support a habitat predictive model developed by the CDC for the federally listed species *Spriranthes diluvialis* (Jankovsky-Jones and Graham 2001). In addition to documenting wetland and riparian plant associations, information on condition, management needs, and opportunities for protection is also being noted.

This project will also help collect information about habitat for mountain quail, a sensitive species on the Boise NF. Populations in the northern Great Basin have experienced significant declines and range reduction over the past 50 years, and 2003 survey efforts indicate mountain quail populations on the Boise NF are very nearly extirpated The intent of this project is to assess the distribution and relative suitability of riparian habitats for mountain quail on the Boise NF and, using geophysical, climatic, and biological variables, calculate an ecological profile of occupied sites which will then be used to develop an inductive model for mountain quail distribution.

Upland Non-Forest Classification and Inventory Project
In partnership with the CDC and the Sawtooth NF, the Boise NF is implementing a Upland Non-Forest Classification and Inventory Project on the Boise and Sawtooth NFs. Work on this project was initiated in 2002. An interim classification was completed in 2004 with a final in 2008. The classification was field tested summer of 2009 resulting in establishment and data collection from additional sample plots. Funding was provided to integrate this additional information and refine the classification which is expected to be completed in 2011. Although approximately one-fourth of the Boise NF and half of the Sawtooth NF are composed of non-forested upland plant communities, these habitats have previously received little attention. This project will increase our knowledge of the location and composition of upland non-forest habitats on the two Forests, including areas that may support special status species such as sage grouse. Information on habitat condition, threats, and management opportunities is also being collected. The Forest also initiated work on a non-forested vegetation field inventory that will supplement the current forested vegetation field inventory. In 2009 the primary emphasis was on identifying the methodology and attributes that will be included in the data collection, which is planned to begin in 2010. Once the initial data collection is complete, future non-forested vegetation inventory will be conducted on a schedule similar to the forested vegetation, which is a complete re-inventory every 10 years based on a re-sampling of 10 percent of the established plots per year.

Boise Front Sagebrush Ecosystem Project
In partnership with the CDC, the Boise NF is developing a study, related to the Sagebrush Habitat Inventory and Classification project described above, to focus specifically on sagebrush habitat in the Boise Front. Work began on this project in 2006, with a final report in 2008. This area is important because of its proximity to human development and disturbances, frequent fires over the past 40 years, amount of rare plant and animal species, and critical winter range for big game. Information on habitat condition, threats, and management opportunities will be collected. Habitat protection measures such as removing weeds or unauthorized trails will be implemented as needed.

Objective VEOB07: *Maintain current mid and fine-scale inventories of vegetation conditions developed during the forest plan revision process to aid in developing vegetation treatment priorities or needs.*

Accomplishment: In the first years of implementing the revised Forest Plan (2003-2006), about 140,500 acres were affected by wildfire. Few acres burned in FY 2008 and 2009. However, in 2007 alone, nearly 218,000 acres burned – almost double the previous three years' total (Table 1). The cumulative total (358,362 acres) represents about 16 percent of the NFS acres within the Forest's administrative boundary.

Table 1. Boise NF Acres[18] Affected by Large Wildfires: 2003–2009

Year of Wildfire	Acres Affected
2003	40,051
2004	0
2005	1,132
2006	99,323
2007	217,856
2008	152
2009	2,256
TOTAL	**360,770**

These fires affected vegetation in different ways, ranging from low severity/intensity underburns that burned understory vegetation but did not kill larger overstory trees, to high severity/intensity burns in which both understory vegetation and large overstory trees were killed.

[18] NFS acres within the Boise NF administrative boundary. "Large wildfires" are those greater than 1,000 acres.

To address the long-term need for updated vegetation information, the Forest Supervisor initiated development of a new integrated vegetation classification, mapping and field inventory product in September 2007. Changes resulting from wildfire, bark beetle mortality and management activities that that affect vegetation will be addressed in this analysis.

This product will provide key information needed to determine progress toward achieving vegetative desired future conditions. Data collected through this effort will help identify areas that contain aspen, western larch and whitebark pine. It will also provide important information as to where the extensive wildfires since 2003 have contributed to achieving desired conditions, or where they may have moved away from desired conditions.

However, this new integrated product will require completion of several phases and is not expected to be available until late 2011 or 2012. Table 2 summarizes products to be acquired or developed.

Table 2. Timeline for Integrated Vegetation Classification, Mapping & Field Inventory Products

Product	Year to be Developed
Aerial Photo Acquisition	2008
Vegetation Classification	2008-2009
Vegetation Map Product	2010-2011
Map Accuracy Assessment (field verification)	2011
Field Inventory Intensified Grid	Complete update in 2008, then 10% plots updated/year

In addition to this long-term product, the Forest Supervisor decided to complete a parallel process in the short-term to support ongoing Forest Plan amendments associated with the WCS (refer to the discussion under objective WIOB03). This "vegetation refresh" product was completed in 2008. The "refresh" captured vegetative changes resulting from wildfires and silvicultural treatments up through 2007. In total, 431,250 acres were adjusted. The results from this effort provided the baseline for the WCS analysis. Table 3 displays the comparison of the vegetative baseline used for the 2003 Forest Plan analysis with the vegetative baseline used in the WCS analysis and the change between the two. The results of this analysis shows that since the Forest plan was signed in 2003, disturbances have had the most affect on the grass/forb/shrub/seedling, sapling and small tree size classes, and the greater canopy cover classes within the medium and large tree size classes. For example, in the medium and large tree size classes disturbances reduced the total acres minimally, but within the tree size class, acres shifted from moderate and high canopy cover classes into low.

Table 3. Acres of Tree Size Class by Canopy Cover Class in 2003 versus 2008 and Percentage Change

Tree Size Class	Canopy Cover Class	2003 (Acres)	2008 (Acres)	Change (%)
Grass/Forb/Shrub/Seedling		353,280	520,980	+47%
Sapling	Low	80,140	72,420	-10%
	Moderate	54,150	45,500	-16%
	Total	**134,290**	**117,920**	**-12%**
Small	Low	178,740	162,160	-9%
	Moderate	282,890	204,510	-28%
	High	86,230	70,140	-19%
	Total	**547,860**	**436,810**	**-20%**
Medium	Low	87,830	118,100	+34%
	Moderate	323,490	267,360	-17%
	High	59,580	52,160	-12%
	Total	**470,900**	**437,620**	**-7%**
Large	Low	25,570	36,320	+42%
	Moderate	111,060	100,000	-10%
	High	43,240	36,570	-15%
	Total	**179,870**	**172,890**	**-4%**

Disturbances since the "refresh" have been minor compared to previous years. Changes up through 2007 will be reflected in the long-term vegetation map product.

As part of the development of the WCS, the Forest developed a *Vegetation and Wildlife Habitat Restoration Strategy* based on the "refreshed" data. This strategy is intended to help identify short-term and long-term priorities for achievement of conditions that contribute to the desired forested vegetative communities and wildlife habitat for species of conservation concern. The Strategy is expected to be incorporated into the Forest Plan through an amendment adopting the Wildlife Conservation Strategy. Environmental analysis and public involvement for this amendment is currently underway with an expected decision in the summer of 2010.

BOTANICAL RESOURCES Objectives (Forest Plan, pages III-32 to III-33)

Objective BTOB07**:** *Maintain annually a list of Forest Watch plants that identify species of concern (see appendix C for list of species).*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. In 2007, several name changes (scientific and common) to species on the Boise NF list were made in accordance with updated taxonomy or nomenclature.

In 2006, the Boise NF dropped one species, *Carex buxbaumii*, from the Forest Watch plants list, because this species is more common than previously thought. One species was added: Indian Valley sedge *(Carex aboriginum)*. In 2005, the Boise NF dropped three species from the Forest Watch Plants list (*Botrychium lunaria, Primula wilcoxiana,* and *Stylocline filaginea*), because the species were more common than previously thought. In 2004, eight species were added to the Boise NF's Forest Watch list (*Botrychium crenulatum, Botrychium lunaria, Botrychium multifidum,*

Botrychium virginianum, Carex flava, Epilobium palustre, Hierochloe odorat, and *Triantha occidentalis* ssp. *brevistyla* (*Tofieldia glutinosa* ssp. *brevistyla*); no species were dropped.

Objective BTOB12: *As a means of proactive management, seek funding for, prioritize preparation of, and prepare Conservation Agreements and Strategies to maintain or restore habitats of Sensitive plant species.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. Idaho douglasia, (*Douglasia idahoensis*), a Region 4 sensitive species, is endemic to Idaho. Nearly three-fourths of the populations of this species occur on the Boise NF. In 2004, the CDC initiated a conservation assessment for *Douglasia idahoensis*. In developing this conservation assessment, Boise NF and Idaho CDC staff visited numerous Douglasia sites on the forest, and documented population size, area and condition, range expansions, habitat quality and potential, threat potential and imminence, associated species and plant communities, physical site description. In 2006, as part of our continued effort to evaluate the status of this species, Boise NF and Idaho CDC staff again visited *Douglasia* sites to document population size, area and condition, range expansions, habitat quality, and threats. Suggestions for *Douglasia* conservation needs will be identified, which will be incorporated into a revised Conservation Strategy expected to be completed in 2009. Habitat protection measures such as reducing impacts from OHVs will be implemented as needed.

Objective BTOB13 and BTOB14**:** *Cooperate with researchers, ecologists, geneticists, and other interested parties to develop seed zones or breeding zones for native plants (BTOB13). Collect seeds of native plants to be used in rehabilitation and restoration activities. Collect seed in accordance with seed zones or breeding zones. Develop long-term storage facilities for collected seeds such as the seed bank at the Lucky Peak Nursery (BTOB14).*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. In partnership with the Idaho CDC and Lucky Peak Nursery, the Boise NF is implementing a native seed collection project on the Forest. Dozens of IDFG volunteers have contributed to the success of this project. Since the project was initiated in 2002, we have collected over 820 pounds of raw seed, resulting in 250 pounds of cleaned seed stored at Lucky Peak Nursery. In addition, several acres are being cultivated to increase the amount of seed for selected species of native forbs, grasses, and shrubs. This project is expected to continue through spring of 2011. By collecting and propagating local native species and then using these materials in revegetation, we are helping to maintain biodiversity and control the invasion of exotic species on the Forest.

NONNATIVE PLANTS Objectives (Forest Plan, pages III-35 to III-36)

Objective NPOB03**:** *Develop strategic noxious weed management plans for Coordinated Weed Management Areas. Cooperate on a regular basis with federal agencies, tribal governments, the State of Idaho, county weed organizations, state and local highway departments, and private individuals in establishing Coordinated Weed Management Area strategic priorities, and locating and treating noxious weed species.*

Accomplishment: The administrative boundary of the Boise NF falls primarily within five Cooperative Weed Management Areas (CWMAs): Boise Basin, Boise Foothills, Frank Church-River of No Return, South Fork Boise River, and Upper Payette River. Coordinated accomplishments for CWMAs are reported in the winter following the field season of work. Information concerning programs and accomplishments by participating partners within the various CWMAs in which the Boise NF falls within, as well as throughout Idaho, are available from the Idaho Department of

Agriculture. Some of this information can be found on the Internet at http://www.agri.state.id.us/Categories/PlantsInsects/NoxiousWeeds/cwmas.php.

In 2008 and 2009, as in 2007, the Boise NF continued to cooperate with multiple partners involved in CWMA strategic priorities, and in locating and treating noxious weeds and nonnative invasive species on NFS lands. The species with the greatest number of acres infested on the Boise NF include Canada thistle, Dalmatian toadflax, rush skeletonweed, and spotted knapweed. Rush skeletonweed is a species of particular concern. An estimated 100,000 or more acres in the Boise NF and over 3 million acres in Idaho are infested with this species to varying degrees. The Forest cooperates with universities, other agencies and research organizations through the Rush Skeletonweed Task Force to help develop and introduce other biological agents for controlling rush skeletonweed.

In 2006, the Forest began the process of digitizing weed infestations and storing digital maps and associated records in the NRIS Terra Invasives Database. Data entry was completed in 2007 for most noxious weed species. However, accurate information for widespread species (rush skeletonweed and Canada thistle) are not complete for the Forest. Additionally, the noxious weed list for Idaho was expanded in 2007 by the State Legislature to 57 species. Additional data may need to be entered into the database for some infestations of newly listed weeds. With these data, the Forest will also be able to update the estimate of Boise NF land infested with non-native invasive plants (current estimate is 111,100 acres infested at varying plant densities).

Projects developed and implemented at the District level included analysis of existing populations and potential for spread of noxious weeds. Efficacy monitoring is also recorded in the FACTS treatment database. Review of several of these data indicate that the project level analysis, mitigation and weed management activities are effective in preventing the introduction of new non-native invasive plant infestations and in controlling the spread of these species as a result of project activities. Prevention of infestations from dispersed recreation use and use of roads and trails is more problematic. Herbicide use on confined areas of noxious weed infestations appears to be successfully reducing the existing infestation and spread of most noxious weed species on the Forest. Use of biological agents on infestations of spotted knapweed and Dalmatian toadflax are effectively controlling large scale infestations of these two species. However, neither herbicide application nor application of existing biological agents are currently generally effective in managing rush skeletonweed infestations.

An additional challenge is the approximately 219,000 acres of wildfire that burned in 2007. Rehabilitation and noxious weed management actions were planned in 2007 to be carried out in 2008 and later years to prevent new infestations of noxious weeds and insure that existing infestations do not spread as a result of wildfire suppression activities and wildfire impacts.

Table 4 lists the acres of noxious weed infestation and treatment by District over the past few years. No additional reporting has been done for FY 08 and 09.

Table 4. Noxious Weed Acres Infested and Treated: 2004 - 2007, by District

	Mtn. Home*	Idaho City	Cascade	Lowman	Emmett	TOTAL
2004						
Infested	76,095	11,520	5,574	3,921	12,705	109,826
Treated	2,399	2,679	134	694	2,878	8,795
2005						
Infested	86,593	9,614	5,572	4,099	6,555	112,463
Treated	1,648	2,040	50	698	351	4,828
2006						
Infested	N/A	N/A	N/A	N/A	N/A	N/A
Treated	3,362	1,893	90	496	1,705	7,546
2007[1]						
Infested	5,571	4,418	476	5,395	1,711	17,558
Treated	2,268	706	57	861	1,059	4,951

N/A = Not available because not all records have been entered into the NRIS Terra Invasives database.
[1]Data from NRIS Invasives Database as of May 2008. Most 2007 infestations for rush skeletonweed have not been added to the database. The total infestation for all weeds except rush skeletonweed and Canada thistle is estimated at 11,100 acres. An estimated 100,000+ acres of NFS lands are infested with rush skeletonweed.

FIRE MANAGEMENT Objectives (Forest Plan, pages III-38 to III-39)

Objective FMOB02: *During project planning, identify appropriate areas where prescribed fire could be used to meet management objectives. These areas may include intermingled landownership, and areas of concentrated investments, structures, or other resource concerns.*

Accomplishment: No additional reporting has been done for FY 08 and 09. In FY 2007, the Forest used prescribed fire for restoration and hazardous fuels reduction on about 11,500 acres[19]. This total is an increase from those in FY 2006, 2005 and 2004, when prescribed fire treated between 6,000 and 7,500 acres. Of the increased acreage, most (4700 acres) resulted from the Lime Creek Aspen Restoration Project on the Mountain Home RD, developed and implemented in collaboration with the Fairfield RD, Sawtooth NF. This project used prescribed fire to top kill the aspen and trigger resprouting of the clone. Project monitoring has shown that this treatment has indeed been successful in restoring aspen in the Lime Creek area. As in previous years, prescribed fire was largely used to restore fire as an ecological process in Fire Regime I (frequent, non-lethal) and Fire Regime IV (infrequent, lethal).

Of the 13,075 acres of fuels treatment on the Boise NF in FY 2007, about 88 percent were treated with prescribed fire. In many of these treated areas, mechanical treatments such as thinning, piling, mastication/mulching and/or biomass removal were first undertaken to help assure that the prescribed fire could be successfully completed.

[19] The data used to monitor Forest progress towards meeting fire- and fuels-related Forest Plan objectives is from the Forest Activity Tracking System (FACTS). This reporting system replaced the National Fire Plan Operations and Reporting System (NFPORS). As in NFPORS, accomplishment in FACTS is recorded in "acres of treatments" on a "footprint." The footprint is the actual physical area on the ground for which one or more treatments (e.g., thinning and piling) may be completed in a fiscal year.

Although prescribed fire is also used as a tool for reducing fuels (slash) created by timber harvest activities and to prepare sites for tree planting, these acres are not included in the totals above.

Objective FMOB03: *Following identification of areas where wildland fire use is appropriate within management areas, aggregate common areas between management areas to fully describe the extent of wildland fire use implementation areas to be included in the Fire Management Plan. Develop the necessary implementation information for the areas and include in the Fire Management Plan.*

Accomplishment: In FY 2008 and 2009, the Forest implemented six wildland fires for resource benefits (WFU) resulting in a total of 2,163 acres burned. Three of the fires were less than one acre; the largest, the Eightmile Creek WFU on the Lowman RD, was 1,260 acres. WFU implementations also occurred on the Cascade and Idaho City RDs.

The Boise's WFU program is unique in Idaho and the Forest Service's Intermountain Region because it is entirely outside designated Wilderness. About 25 percent of the Forest, all of which is on the eastern portion adjacent to the Frank Church – River of No Return and Sawtooth Wildernesses, specifically allow WFU. Managing fires out of designated wilderness presents a host of challenges due to the complexity of uses and presence of developments, investments, and other types of features that require protection. The strategies and tactics used to implement WFU within the context of the Forest Plan direction reflect the increased flexibility in managing naturally ignited wildfires for a broader range of objectives that can change as fires spread across the landscape encountering different fuels, weather, and topography while concurrently incorporating sound risk management regarding firefighter and public safety, natural and cultural resources, values to be protected, and social/political concerns.

In FY 2007, the Forest implemented a large and successful WFU in the Trapper-Flat WFU subunit. The Trapper Ridge WFU started on July 17 and over several weeks, burned a total of 20,159 acres (18,850 on the Boise NF, the remainder within the Sawtooth Wilderness). Fire personnel managed the Trapper Ridge WFU with the benefit of "lessons learned" from the Forest's first two WFU fires, which burned a total of less than 100 acres on the Lowman and Idaho City RDs in 2006.

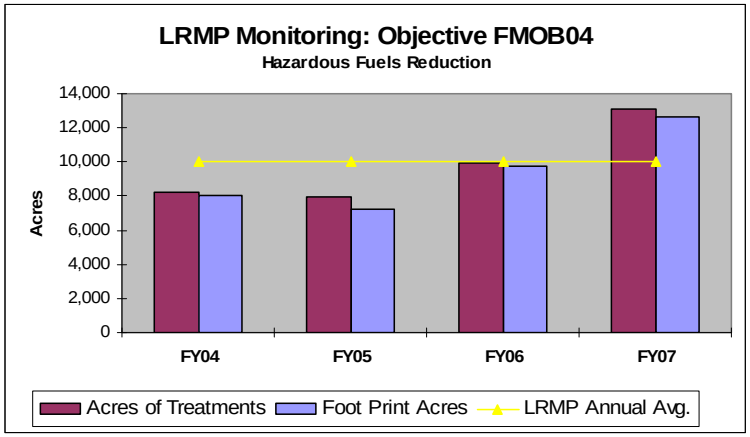


Figure 3. Hazardous Fuels Accomplishment: FY 04 – FY 07

Objective FMOB04**:** *Schedule and complete at least 100,000 acres of fuels management through prescribed fire and mechanical treatments in the next decade to achieve desired vegetation attributes and fuel reduction goals. Focus on wildland/urban interface (WUI) and areas in Fire Regimes 1, 2, and 3 (non-lethal, mixed1, mixed2) in Condition Classes 2 and 3 (moderate to extreme hazard rating).*

Accomplishment: No additional reporting has been done for FY 08 and 09. The Forest continues to focus fuels management efforts in the WUI, as well as areas outside the WUI in Fire Regimes I, II and III in Condition Classes 2 and 3. In FY 2007, about half of the acres (49 percent) treated were in the WUI. The remaining acres were outside of the WUI, with a focus on restoring the role of fire in Fire Regime I (frequent, non-lethal) and IV (infrequent, mixed).

Figure 3 shows acres of hazardous fuels reduction for each of recent fiscal years. As noted under objective FMOB02, in FY 2007, the Forest completed over 13,075 acres of treatments using both prescribed fire and mechanical treatments. Although not specifically accounted for here, other vegetation treatments also contributed to reducing hazardous fuels and/or moving vegetation towards desired conditions.

The data used to monitor Forest progress towards meeting fire- and fuels-related Forest Plan objectives is from the Forest Activity Tracking System (FACTS). This reporting system replaced the National Fire Plan Operations and Reporting System (NFPORS). As in NFPORS, accomplishment in FACTS is recorded in "acres of treatments" on a "footprint." The footprint is the actual physical area on the ground for which one or more treatments (e.g., thinning and piling) may be completed in a fiscal year.

Objective FMOB05: *Continue to identify high fire hazard areas in wildland/urban areas. Develop and prioritize vegetation treatment plans in coordination with local and tribal governments, agencies, and landowners to reduce the risk from wildfire.*

Accomplishment:

In FY 08 and 09, the Forest continued working with the Idaho State Fire Plan Working Group (ISFPWG), a multi-agency collaborative body that assists counties with their County Wildfire Protection Plans and their associated countywide working groups, disseminates information, and conducts oversight and prioritization of grant assistance programs to facilitate the implementation of the National Fire Plan in Idaho. In the Intermountain Region, the ISFPWG recommends, for the five National Forests in southern Idaho, which projects get funded above a "base" level, using a collaborative priority project selection process.

In FY 07, the ISFPWG selected two projects on the Boise NF for "above base" funding:

- The Pine-Featherville project will reduce fuels in the urban interface area along the main road corridor between the communities of Pine and Featherville on the Mountain Home RD, using a combination of mechanical thinning of small-diameter trees and prescribed burning of hand-collected piles. The project has strong support and involvement from the BLM, the Idaho Department of Lands, Elmore County and its Wildland Fire Mitigation Plan, the Southwest Idaho Resource Conservation and Development Council, and local residents.

- On the Idaho City RD, the Star Ranch project is designed to reduce hazardous fuels through commercial and precommercial thinning and prescribed fire. The small-diameter material is being used to make wood pellets and to generate fuel at a cogeneration plant in nearby Emmett, Idaho. The environmental analysis for this project was a collaborative effort that incorporated

several town meetings and extensive coordination with the adjacent Star Ranch subdivision. The subdivision received an $85,000 grant from the Idaho Department of Lands to treat hazardous fuels on private land, thereby enhancing the project's objective of reducing the area's vulnerability to uncharacteristic wildfire.

In previous years, the Forest participated in the development of four county wildland fire mitigation plans (CWMPs) as outlined in the May 2002 Idaho Statewide Implementation Strategy for the National Fire Plan. Boise County was the first to complete their plan (July 2003) which has been updated annually to incorporate completed projects and add new projects. Valley, Elmore and Gem counties all completed their initial CWMPs in 2004 and are in various stages of updating their plans.

TIMBERLAND RESOURCES Objectives (Forest Plan, pages III-42 to III-43)

Objective TROB01**:** *Provide timber harvest and related reforestation and timber stand improvement activities, to contribute toward the attainment of desired vegetation conditions. Annually, during the next 10 to 15 years:*

a) Harvest timber, other than by salvage, on an average of approximately 4,500 acres,
b) Reforest an average of approximately 2,000 acres; and
c) Complete timber stand improvement activities on an average of approximately 5,500 acres.

Accomplishment: The table shows the Forest's accomplishment in FY 2008 and 2009, as compared to earlier years:

Table 5. Timber and Related Activities – FY 2004 - 2009

Activity	Unit of Measure	FY 04	FY05	FY 06	FY 07	FY 08	FY 09
Timber harvest *	Acres	5,461	258**	4,577	2,378	3,096	3,713
Reforestation	Acres	1,294	2,698	2,269	1,562	2,630	9,211
TSI***	Acres	5,912	7,390	5,710	6,210	7,221	8,386

*Other than salvage; salvage is accounted for in the table below.
**Acres harvested are counted as "accomplished" only after all harvesting, slash disposal and related activities are completed. Most acres harvested in 2005 were recorded as "accomplished" after October 1, 2005 (i.e., in FY 2006).
***Timber Stand Improvement. Includes activities such as precommercial thinning.

Objective TROB02**:** *Make available an estimated 450 million board feet of timber for the decade, which will contribute to Allowable Sale Quantity (ASQ).*

Accomplishment: The table shows the Forest's accomplishment in FY 2008 and 2009, as compared to earlier years:

Table 6. Allowable Sale Quantity Accomplishment – FY 2004 - 2009

Activity	Unit of Measure	FY 04**	FY05**	FY 06**	FY 07**	FY 08	FY 09
Timber volume	MMBF*	21.7	14.9	26.1	11.1	8.0	20.1

*Million board feet

**In FY 04 and FY 05, ASQ accomplishment was based on volume offered (i.e., made available for sale). In FY 06 and subsequent years, the unit of measure changed to volume sold.

In FY 04, the total volume included 14.3 MMBF green and 7.4 MMBF salvage.

In FY 05, the total volume included 14.5 MMBF green and 0.4 MMBF salvage.

In FY 06, the total volume included 17.2 MMBF green, 4.1 MMBF salvage, and 4.8 MMBF "CWK2" volume. (CWK2 was a one-time appropriation in FY 06 used in part to supplement NFTM [Timber Management] funds. CWK2 funds helped produce both green and salvage timber in FY 06). In FY 2007, the total volume was entirely green timber.

In FY 2008 and 2009, the amount of salvage was not delineated from green due to changes in salvage and green timber sale funding that make delineation difficult.

Objective TROB03**:** *Utilize wood products (e.g., fuelwood, posts, poles, houselogs, etc.) generated from vegetation treatment activities, on both suited and not suited timberlands, to produce an estimated 217 million board feet of volume for the decade. This volume, when combined with ASQ, is the Total Sale Program Quantity (TSPQ). The TSPQ for the first decade is estimated to be 667 million board feet.*

Accomplishment: The table shows the Forest's accomplishment in FY 2008 and 2009, as compared to earlier years:

Table 7. Total Sale Program Quantity Accomplishment – FY 2004 - 2009

Activity	Unit of Measure	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09
Fuelwood, posts, houselogs, etc.	MMBF*	4.2	3.1**	3.7**	2.7	6.8	6.8
Timber sold (ASQ contribution)*	MMBF	21.7	14.9	26.1	11.1	8.0	20.1
TOTAL	**MMBF**	**25.9**	**18.0**	**29.8**	**13.8**	**14.8**	**26.9**

*From Table 6.
** Over 100 fuelwood permits sold in FY 2005 were not entered into the reporting database. The volume associated with these permits is reported in FY 2006.

RANGELAND RESOURCES Objectives (Forest Plan, page III-44)

This section contains no annual reporting requirements to be included in this year's report.

MINERALS AND GEOLOGY RESOURCES Objectives (Forest Plan, pages III-48 to III-49)

Objective MIOB02**:** *Develop and implement within 1 year standardized inspection, monitoring, and reporting requirements for minerals activities to provide for environmentally sound exploration, development, and production of mineral and energy resources.*

Accomplishment: As in 2004, 2005, 2006 and 2007, the Boise NF continued to utilize in 2008 and 2009 its standardized inspection/monitoring report to review mineral development areas to determine consistency with management direction in the 2003 Forest Plan. Developments determined not to be consistent were provided the information and requirements to bring the operation into compliance and the timeframe in which changes must occur. Followup consistency reviews will be completed based on the timeframes allowed for corrective measures to be taken. In 2006, the Forest began implementing interdisciplinary team plan reviews during the initial stages of plan approval. This practice has proved valuable in avoiding or minimizing resource issues early in the process.

LANDS AND SPECIAL USES Objectives (Forest Plan, page III-53)

This section contains no annual reporting requirements to be included in this year's report.

FACILITIES AND ROADS Objectives (Forest Plan, pages III-58 to III-59)

Objective FROB01**:** *Analyze road system needs and associated resource effects in accordance with the established agency policy direction for roads analysis.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. Established agency policy for analyzing road and bridge system needs (i.e., do they meet design standards and meet road management objectives) and whether they provide for public safety is found in Forest Service Manual (FSM 7700) and Forest Service Handbook (FSH 7709).

Between 2000 and 2004, 100 percent of the system passenger car roads (maintenance levels 3, 4, and 5) were surveyed (20 percent each year) to determine maintenance needs, including deferred maintenance[20] backlogs. The identified maintenance items pertain to both those needed to address public safety, as well as resource protection. The identified deferred maintenance needs, both critical and non-critical items, were placed into IWEB database (formerly INFRA) and subsequently carried forward for consideration in annual programs of work. In 2005 and 2006, 20 percent of the maintenance levels 3^2, 4, and 5 roads were again surveyed. Similar to previous years (with the exception of 2005), road condition surveys were completed on a sub sample of the maintenance levels 1 and 2 roads. In 2007, road condition surveys were only completed on a sub sample of the maintenance levels 1 and 2 roads.

[20] Deferred Maintenance - Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs of repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or noncritical at any point in time. Continued deferral of noncritical maintenance will normally result in increase in critical deferred maintenance.

At the end of FY 2007, the Boise NF transportation system had approximately 710 miles of operational maintenance levels[21] 3, 4, and 5 roads, 2,593 miles of operational maintenance level 2 roads, and 1,372 miles of operational maintenance level 1 roads (total of 4,676 miles). These totals represent a slight increase in the miles of road in maintenance levels 3, 4 and 5, and a significant decrease in the number of miles in maintenance levels 1 and 2.[22] The changes resulted primarily from adjustments to the inventory related to previous years' road decommissioning (the decommissioning occurred but was never reported in the IWEB database), current year road decommissioning, and jurisdictional clarification in the IWEB database (maintenance and operational responsibility). In 2007, approximately 477 miles of levels 3, 4, and 5 roads and 230 miles of level 2 roads received maintenance from either the Boise NF Road Crew, private contractor via a service contract with the Forest, or from purchasers and cooperators.

At the end of FY 2006, the Boise NF transportation system had approximately 674 miles of maintenance levels[23] 3, 4, and 5 roads, 2,532 miles of maintenance level 2 roads, and 1,621 miles of maintenance level 1 roads (total of 4,827 miles). These totals represent a slight decrease in the miles of road in maintenance levels 3, 4 and 5, and a commensurate slight increase in the number of miles in maintenance levels 1 and 2.[24] The changes result from transfer of some roads to Valley County jurisdiction, as well as more accurate calculation of road miles. In 2006, approximately 331 miles of level 2 roads and 458 miles of level 3 roads received maintenance from either the Boise NF Road Crew, private contractor via a service contract with the Forest, or from purchasers and cooperators.

The Boise NF transportation system includes 111 bridges. This figure has declined from recent years as the Forest has conveyed jurisdiction of several bridges to the counties at their request. These bridges are on a two-year inspection cycle, and thus, approximately 50 percent of the bridges were inspected to determine if they still support design uses (i.e. Road Management Objectives) and legal loads. Also, bridges are inspected for condition appraisal ratings according to National Bridge Inspection Standards (NBIS) and Forest Service Handbook (FSH 7709).

Bridges determined to have a structural load capacity less than the American Association of Highway and Transportation Officials (AASHTO) or the State of Idaho legal loads are posted to maintain safe operating levels. On the Forest, 11 of the 111 bridges are posted for load restrictions.

In 2007, two new bridges were constructed: Roaring River bridge (255-5.5) and East Fork Big Pine Creek (555-2.1). The Roaring River bridge is a large multi-plate steel arch open-bottom structure that replaced an existing corrugated metal pipe. The bridge was constructed to improve aquatic organism passage at the stream crossing. The East Fork Big Pine bridge replaced an existing timber bridge. The Van Wyck Creek Bridge (435A1) was closed to all motorized vehicles and converted to a trail bridge. The jurisdiction of the East Fork Swanholm Creek bridge (327-41.3) was conveyed to Atlanta Highway District. All bridges were determined to still support design uses and legal load limits or the posted restricted load limits.

[21] A description of maintenance levels 1-5 is located in FSH 7709.58, section 12.3. Generally speaking, maintenance level 3-5 roads are the main arterial and collector road system; where as level 1 and 2 roads are local roads that feed into the level 3-5 roads.
[22] At the end of FY 2005, the Boise NF had 820 miles of maintenance level 3, 4, or 5 roads, 2,470 miles of maintenance level 2 roads, and 1,537 miles of maintenance level 1 roads (total of 4,827 miles).
[23] A description of maintenance levels 1-5 is located in FSH 7709.58, section 12.3. Generally speaking, maintenance level 3-5 roads are the main arterial and collector road system; where as level 1 and 2 roads are local roads that feed into the level 3-5 roads.
[24] At the end of FY 2005, the Boise NF had 820 miles of maintenance level 3, 4, or 5 roads, 2,470 miles of maintenance level 2 roads, and 1,537 miles of maintenance level 1 roads (total of 4,827 miles).

In 2006, two new bridges were constructed: Silver Creek Plunge bridge (671W1-0.1) and Renwyck Creek bridge (609-3.3). All bridges were determined to still support design uses and legal load limits or the posted restricted load limits, with minor maintenance, except the Van Wyck Creek Bridge (435A1). The Van Wyck Creek bridge was determined to be unsafe and not to standard, and in 2007 it will be closed to motorized vehicles and converted to a trail bridge.

In 2005, 27 of the 136 bridges had technical load ratings reperformed to determine if the structural load capacity meets the safe load capacity for standard vehicles. Five of the 27 bridges required posting of load restrictions to maintain safe operating levels. In 2004, other than minor maintenance needs (e.g., replace object markers), all bridges except for one that crossed Trout Creek on the Cascade RD were determined to still support design uses and legal highway limits. The bridge at Trout Creek was determined to be unsafe and not to standard and was removed. Alternative routes are available to access those areas that the Trout Creek bridge connected. Future replacement of the Trout Creek bridge or other improvements on alternative routes is still to be determined.

Objective FROB05**:** *Coordinate transportation systems, management, and decommissioning with other federal, state and county agencies, tribal governments, permittees, contractors, cost-share cooperators, and the public to develop a shared transportation system serving the needs of all parties to the extent possible.*

Accomplishment: As in previous years, the Boise NF held coordination meetings with other agencies and partners in 2008 and 2009.

In 2007, the Forest conducted annual meetings on cost share road maintenance with its cost share cooperators, the State of Idaho, and with Potlatch Corporation which acquired the lands and cost share easements from Western Pacific Timber and the former cooperator Boise Cascade Corporation. The purpose of these meetings was to make efficient use of resources and funds to manage our shared road network, and to account for each party's traffic and non-traffic generated use and maintenance obligations.

Coordination meetings were held with Valley County, Atlanta Highway District, Bureau of Land Management, and Federal Aviation Administration (Cascade Maintenance Office). The purpose of these meetings was to discuss the cooperative Road Agreements, annual maintenance plans, and specific project agreements, thus making more efficient use of resources and funds to manage our shared road network.

In cooperation with local county governments and to clarify jurisdictional issues, the Boise NF in 2007 granted FRTA (Forest Roads and Trails Act) public road easements on 2.9 miles of the Willow One road (NFSR 438) in Valley County, and 7.6 miles of the Swanholm Road (NFSR 327) in Elmore County (Atlanta Highway District). Transferring the jurisdiction of these roads to the counties opens up new funding sources to assist with the deferred maintenance backlog for these 10.5 road miles and associated bridge (East Fork Swanholm Creek).

These easements compliment those that were undertaken in FY 06, during which Valley County was issued easements for seven road segments (total of 109 miles of road, including nearly 44 miles for the Stanley-Warm Lake road), and Boise County was issued an easement for one road segment (0.8 mile). Transferring the jurisdiction of these roads to the counties opens up new funding sources to assist with the deferred maintenance backlog for these 109 road miles and associated 26 bridges. Other accomplishments in 2006 included acquisition of four temporary right-of-ways across private lands for vegetation management purposes and four permanent right-of-ways across private lands; issuance of one FLMPA (Federal Land Policy and Management Act of 1976) private road permit, two FLMPA

private road easements, two Road Use Permits for commercial use of NFS roads, and four ditch easements.

Objective FROB06**:** *Identify roads and facilities that are not needed for land and resource management, and evaluate for disposal or decommissioning.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. The Forest completed a Facility Master Plan (FMP) in 2004. The FMP evaluated existing administrative facilities and identified unneeded facilities, which will be evaluated for disposal or decommissioning. In 2007, no buildings were intentionally decommissioned; however, three buildings burned in the Cascade Complex fire, including the Knox Ranch Lodge #1 (#1040), Knox Ranch Log Dwelling (#1041), and the Meadow Creek Toilet (#1677).

In 2006, four buildings were decommissioned, including the Lowman Ranger Station Trailers #1152 and #2652, Elk Creek Trailer Cover #1639, and the Idaho City Shed #1026. In addition, the ownership of Deadwood Dwelling #2826 was clarified and then transferred to the Bureau of Reclamation. These decommissionings follow the 2005 removal of the Mores Creek Guard Station barn from an administrative site, based on a master plan analysis that determined it was no longer needed.

Travel management decisions are identified through project level NEPA documents. Authorized and unauthorized roads are evaluated and unneeded roads are identified. In 2007, approximately three miles of authorized system roads were decommissioned and removed from the Forest transportation system and 17 miles of unauthorized roads were decommissioned on the Emmett RD. These roads were in the Middle Fork Payette River watershed. In addition, approximately 15 miles of maintenance level 1 road were converted to trails on the Cascade and Emmett RDs.

In 2006, approximately four miles of classified (authorized) system roads were decommissioned and removed from the Forest transportation system. These roads were located in the Rock Creek and Middle Fork Payette River watersheds, located on the Lowman RD and Cascade RD, respectively. In addition, approximately 3 miles of unauthorized roads were decommissioned on the Lowman RD.

In 2005, approximately 114 miles of classified (authorized) roads were decommissioned and removed from the Forest transportation system. Approximately 87 miles of unauthorized roads were also decommissioned. All of these roads were located in the Rabbit Creek area on the Idaho City RD.

Objective FROB11**:** *In the Forest's annual program of work, prioritize and schedule improvements to existing culverts, bridges, and other stream crossings to accommodate fish passage, 100-year flood flow, and bedload and debris transport. Include accomplishments in the biennial update of the Watershed and Aquatic Recovery Strategy (WARS) database.*

Accomplishment: No additional reporting has been done for FY 08 and 09. The Boise NF conducted comprehensive culvert inventories in 2003, 2004 and 2007. This inventory effort was accomplished using the San Dimas protocol, which was a condition for funding. The Intermountain Region of the Forest Service allocated funds for culvert inventories to four Idaho Forests that have anadromous fisheries. The Boise NF received $40,000 in each of the preceding three years for culvert inventory. Working together, the Sawtooth and Boise NFs established partnerships with the SCA, local Resource Conservation and Development Offices (RC&Ds), and Rocky Mountain Research Station to facilitate the culvert inventories. The SCA provided student interns to collect the data. The RC&D Offices provided logistical support, including laptop computers, GPS equipment and digital cameras. In addition to this logistical support, the RC&D Offices obtained permission to survey culverts on private property near the Boise NF boundary. A Rocky Mountain Research Station field crew

received San Dimas protocol training and subsequently surveyed 12 additional culverts on the Boise NF. The Boise NF crews completed 142 full assessments (culverts) and 169 partial assessments (fords and bridges) in 2003. Boise NF and Rocky Mountain Research Station crews completed a total of 181 full assessments and 144 partial assessments in 2004. These inventories were conducted based on priorities identified by the Intermountain Region. Priority 1 was culverts on streams with anadromous fisheries; priority 2 was culverts on bull trout proposed critical habitat streams; priority 3 was culverts on streams with cutthroat trout. The Boise NF completed all priority 1-3 culverts in 2003 and 2004.

The data obtained through this inventory was analyzed using specially developed software to identify fish passage barriers. All data collected was analyzed and incorporated into the 2003 and 2004 annual reports. The 2003 and 2004 analyses identified the 25 culverts that blocked access to the most habitat upstream and this information was used in the development of annual program of work.

In 2007, the Forest made significant progress toward attainment of FROB11. The Forest received grants totaling $234,538 for fish passage restoration, including culvert replacements on Wapiti, Fir and Foolhen creeks. The Roaring River culvert replacement project was completed, and the Wapiti Creek culvert replacement design was completed and contract awarded. In addition, environmental analysis for three Foolhen Creek culvert replacements was completed.

In 2006, the Boise NF implemented a contract to replace an identified barrier culvert on Renwyck Creek. In 2006, the Forest also awarded a contract to replace a barrier culvert on Roaring River (bull trout habitat) that was identified through the 2003 inventory. Implementation of this contract is scheduled for August-September 2007.

In 2005, the Boise NF implemented a contract to replace two of the barrier culverts on anadromous streams (Cub Creek and Casner Creek) that were identified through the 2003 inventory. In 2005, the Boise NF also awarded a contract to replace a barrier culvert on Renwyck Creek (bull trout habitat) that was identified through the 2003 inventory.

RECREATION RESOURCES Objectives (Forest Plan, pages III-62 to III-64)

Objective REOB12**:** *Annually update recreation databases for developed sites, dispersed areas, and trails.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. As part of the Recreation Site Facility Analysis (RFA) process, the developed recreation site data in the INFRA database was fully reviewed and updated by Forest recreation specialists. Data reviewed and updated included number and type of recreation sites, occupancy levels, and all operation and maintenance costs. Facility accessibility information for each developed recreation site was also added to the database during the update. As of September 2007 (the end of FY 2007), the RFA was essentially complete on the Boise NF.

Routine condition and deferred maintenance surveys were conducted for selected developed recreation sites and recreation buildings according to an established schedule and agency deferred maintenance protocols. The schedules for these inspections were developed in conjunction with recreation management standards and are based on inspecting approximately 20 percent of each recreation element every year.

In 2007, only three trails on the Forest were selected by the national sampling model for condition surveys. All three condition surveys were completed and the results reflected in the INFRA database.

These accomplishments add to those completed in 2006, during which condition surveys were assigned on only six trails on the Forest although only two were accomplished due to the resource and personnel impacts associated with the 2006 fire season.

No condition surveys were conducted for dispersed recreation sites other than toilet buildings that serve dispersed areas. These areas are also referred to as Concentrated Use Areas (CUAs). There were insufficient funds and resources to survey more than the toilet structures themselves. Because funding for dispersed recreation management generally does not allow the Forest to maintain a field presence sufficient to enforce regulations and manage dispersed recreation areas to the intended level, much of the field presence within dispersed areas is actually accomplished through fire crew patrols rather than recreation staff.

Objective REOB13**:** *Continue to improve accessibility on the Forest in compliance with all federal laws and agency guidelines.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. In 2007, accessible toilets were installed at the newly relocated Danskin boating access site on the South Fork Boise River and at Antelope campground at Sagehen reservoir. Both toilets provide barrier-free access and replace existing toilets that did not meet current accessibility standards. Across the Forest, a number of picnic tables and firerings were also replaced with newer versions that meet accessibility standards.

Objective REOB17**:** *Initiate a process of phased, site-specific travel management planning as soon as practicable. Prioritize planning based on areas where the most significant user conflicts and resource concerns are occurring. Identify and address inconsistent access management of roads, trails, and areas across Forest, Ranger District, and interagency boundaries.*

Accomplishment: In FY 2008, the Forest completed a travel management analysis for the Mountain Home RD and in FY 2009, for the Emmett and Idaho City RDs. These complement analyses completed in 2007 on the Cascade, Lowman, and Mountain Home RDs. Based on these decisions, Motor Vehicle Use Maps (MVUMs) that display the designated system of roads and trails open to motor vehicle use have or will be developed and made available to the public. These efforts implement the Forest Service's National Travel Management Rule for these portions of the Forest. Current Forest travel regulations are displayed on the Forest Visitor Map. With their focus on motorized routes, the new MVUMs will make it easier to determine motorized road and trail designations.

The Forest's travel management efforts also included a public advertising campaign developed with Idaho Recreation and Tourism Initiative partners that used billboards across the state and other vehicles to advise motorized recreationists to stay on trails.

Objective REOB22**:** *Provide networks of marked and designated snow machine, cross-country ski, and other winter travel routes and trailhead facilities, while meeting other resource goals and objectives.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. In 2007, a snowmobile trail grooming agreement between the Boise NF, Idaho Department of Parks (IDPR) and Recreation, and Valley County was reissued. This agreement maintains extensive snowmobile trail riding opportunities on a network of groomed trails comprising over 200 miles of trail on the Cascade and Emmett RDs. This trail system provides winter access to important winter recreation opportunities such as West Mountain, Warm Lake, and Sagehen Reservoir. The snowmobile trail

grooming is provided through a cost-share agreement between the Boise NF, IDPR, and Valley County and is established for a period of 5 years.

SCENIC ENVIRONMENT Objectives (Forest Plan, page III-67)

This section contains no annual reporting requirements to be included in this year's report.

HERITAGE PROGRAM Objectives (Forest Plan, pages III-69 to III-70)

Objective HPOB05**:** *Maintain an ongoing inventory to locate and identify historic properties on National Forest System lands.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. In 2007, no large scale inventories to located and identify historic properties were completed, due to the 2007 wildfires, a key staff resignation, and work on the Forest's historic lookouts.

In 2006, the Forest completed a third season of Basque Arborglyphs: Culture in the Carvings. This project is a partnership with the Cenarrusa Center for Basque Studies and the Basque Museum & Cultural Center to document the legacy of Basque sheepherders in Idaho. The Forest also completed 11 cultural resources surveys in support to other Forest programs (vegetation, fire, recreation, range, mining, and special uses management).

In 2005, the Forest completed a second season of Basque Arborglyphs: Culture in the Carvings. This project was hosted as a Passport in Time (PIT) project. Passport in Time is a USDA Forest Service program that invites the public to volunteer on historic preservation projects on the national forests. The Forest also completed 37 cultural resources surveys in support to other Forest programs (vegetation, fire, recreation, range, mining, and special uses management).

In 2004, the Forest initiated a PIT project to record Basque tree carvings on the Idaho City RD. The Forest has been involved in the program since 1992. The Forest also completed 50 cultural resources surveys in support to other Forest programs.

Objective HPOB07**:** *Evaluate cultural resources to determine their eligibility as historic properties for listing on the National Register of Historic Properties.*

Accomplishment: In 2009, 37 sites were evaluated for their National Register eligibility in consultation with the Idaho State Historic Preservation Office (SHPO). Three of those sites were determined eligible for listing on the National Register of Historic Places.

In 2008, 56 sites were evaluated for their National Register eligibility in consultation with the Idaho SHPO. Twenty of those sites were determined to be eligible for listing on the National Register of Historic Places.

In 2007, 194 sites were evaluated for their National Register eligibility in consultation with the Idaho SHPO. The dramatic increase over previous years is attributable to several large projects in archeologically sensitive areas. A total of 69 of those sites were determined to be eligible for listing on the National Register of Historic Places.

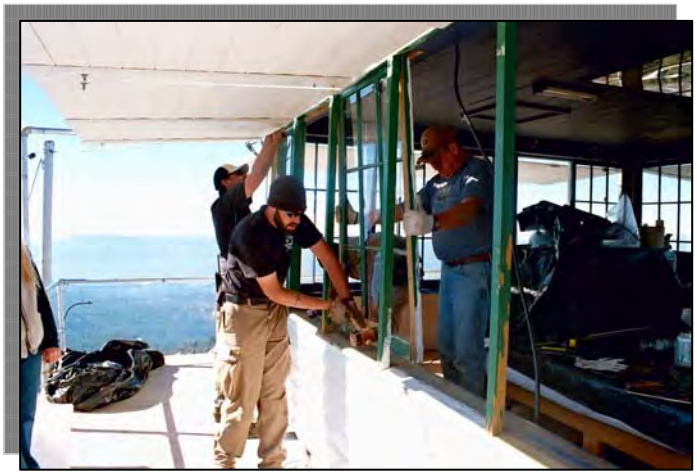
In 2006, 21 sites were evaluated for their National Register eligibility in consultation with the Idaho SHPO. Three of those sites were determined to be eligible for listing on the National Register of Historic Places.

In 2005, 33 sites were evaluated for their National Register eligibility in consultation with the Idaho SHPO. A total of 20 sites were determined eligible for listing on the National Register.

In 2004, 77 sites were evaluated for their National Register eligibility in consultation with the Idaho SHPO. Thirty-four of those sites were determined eligible for listing on the National Register.

Objective HPOB09**:** *Protect historic properties through stabilization and monitoring efforts. Monitor historic properties that may be adversely affected by management activities.*

Accomplishment: In 2009 and 2009, the Forest continued historic preservation maintenance projects at Scott Mountain Lookout and Deadwood Lookout. Civilian Conservation Corps (CCC) built the lookouts in the 1930s. Scott Mountain is still an active fire lookout. Deadwood Lookout is on the Forest's cabin rental program, and is very popular with the public.



Forest workers remove the Scott Mountain Lookout's original 1930s windows, preparing them for rehabilitation.

In 2006, two sites were stabilized consistent with the Secretary of Interior's Standards for the Treatment of Historic Buildings. Preservation maintenance work was completed at Barber Flat and Warm Springs Guard Stations, which are eligible for listing on the National Register of Historic Places. These facilities are on the Forest's cabin rental program. In addition, seven sites were monitored for NHPA Section 106 project compliance.

In 2005, four sites were stabilized consistent with the Secretary of Interior's Standards for the Treatment of Historic Buildings. Preservation maintenance work was completed at Cottonwood Ranger Station; and the Scott Mountain, Silver Creek and Deadwood lookouts. In addition, nine sites were monitored for compliance with NHPA Section 106 following project implementation.

In 2004, preservation maintenance occurred at Elk Creek Ranger Station and Dutch Creek Guard Station. Both historic properties are on the cabin rental program. In addition, 37 sites were monitored for NHPA Section 106 project compliance.

Objective HPOB10**:** *Curate artifacts and records, and make them available for study by qualified researchers.*

Accomplishment: No additional reporting was noted in FY 2009, 2008 or 2007. However, the Forest initiated curation on three major archeological collections and numerous small collections, which will yield data for future efforts.

In 2006, the Forest curated records produced for NHPA Section 106 compliance in support of Forest projects (64 total projects).

In 2005, the Forest curated records produced for NHPA Section 106 compliance in support of Forest projects (105 total projects). In 2004, the Forest curated artifacts from 144 previously documented sites into a collection database. This was hosted as a PIT project.

Objective HPOB15**:** *Expand heritage experiences and opportunities, including interpretive services, heritage tourism, environmental education and volunteer programs such as Passport in Time to provide positive heritage experiences.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. In 2006 the Forest conducted 12 presentations and/or fieldtrips focused on historic preservation with schoolchildren and other groups; hosted one interagency archaeological damage assessment course; and developed a webpage for the Emmett RD highlighting the history of area attractions.

In 2005, the Forest conducted one PIT project, two interpretive projects, ten classroom and on-site presentations with schoolchildren, six presentations to other groups, and three professional presentations. The interpretive projects consisted of exhibits at the Boise Airport celebrating the Forest Service Century of Service, and interpretive panels at Warm Lake. Presentations focused on the legacy of Chinese immigrants in Idaho, mining history, Native American history, and the history of the Southern Idaho Timber Protective Association. Heritage staff traveled as far as Jordan Valley, Oregon to provide educational presentations to schoolchildren.

In 2004, the Forest hosted three PIT projects, and five additional public outreach presentations for schools, clubs, and other groups.

Objective HPOB16**:** *Expand partnerships with individuals, local communities, and academic and private sector institutions to protect cultural resources and involve and educate the public.*

Accomplishment: No additional reporting has been done for FYs 2008 and 2009. In 2007, the Forest focused on its partnership with the Idaho Heritage Trust (IHT) for work at the historic Landmark Ranger Station. IHT developed architectural design plans for additions to two cabins at the site. These plans are consistent with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties and American with Disabilities Act (ADA) accessibility guidelines. The new additions will adapt the cabins for public winter recreation use and will relocate the existing bathrooms from the historic porches, which will eventually be restored to their original appearance.

In 2006, the Forest embarked on a major project to restore Historic Landmark Ranger Station to its original purpose as a working Forest Service administrative site and adapt it for public use and enjoyment. The National Trust for Historic Preservation has awarded the Boise NF two grants totaling $15,000 to conduct a historic structures condition assessment and prepare a master plan for Landmark Ranger Station. This is only the second time that the National Trust has ever awarded grants to a Forest Service project.

The Forest has formalized a partnership with the Idaho Heritage Trust to complete the condition assessment and master plan. The Trust is a 501(c)(3) non profit organization dedicated to "saving historic Idaho for tomorrow." The Trust provides grants and technical assistance to those interested in preserving historic properties, sites, and artifacts in the state. The Trust is contributing $12,000 to the project in FY06 and FY07.

In 2006 as in 2005, the Forest continued to maintain its partnerships with the Idaho City Historical Foundation, the Cenarrusa Center for Basque Studies, the Basque Museum & Cultural Center, and the Atlanta Historical Society.

TRIBAL RIGHTS AND INTERESTS Objectives (Forest Plan, page III-71)

Objective TROB01**:** *Meet annually with designated tribal representatives to coordinate tribal uses of National Forest System lands as provided for through existing tribal rights with the U.S. Government.*

Accomplishment: Three Federally recognized Native American tribes have expressed interest in management activities on the Boise NF:

- Nez Perce Tribe
- Shoshone-Bannock Tribes
- Shoshone-Paiute Tribes

These Plateau and Great Basin tribes have resource areas that drew groups together to share resources in particularly rich places. Within the administrative boundary of the Boise NF, these places include the South Fork Salmon River and Bear Valley areas, which have premier fisheries. The Camas Prairie and other areas are well-known plant gathering places, and big game are abundant across the Forest. Many places throughout the Forest were also major meeting areas, trade centers, or habitation sites.

The intergovernmental consultation process serves as the primary means for the Forest to carry out its trust obligations and meet Tribal Relations objectives. Through consultation protocols or processes established with each of these Tribes, the Forest strives to achieve objectives for Tribal Consultation important to meeting its trust obligations with these Tribes. These include:

1. Assuring Tribal and Federal Governments understand the technical and legal issues necessary to make informed policy and project decisions
2. Assuring federal compliance with treaty and trust obligations, as well as other applicable federal laws and policies pertaining to tribal culture, religion, subsistence, and commerce.
3. Providing the responsible official sufficient information on Tribal resource values during the NEPA analysis phase to (1) permit an adequate disclosure of effects (direct, indirect, and cumulative) upon Tribal resource values, and (2) inform decisions related to those effects.
4. Providing the necessary protection, or mitigation of adverse effects, to tribal resources, culture, religion and economy from federal undertakings, and as needed “resolve adverse effects”.
5. Developing and maintaining relationships and trust between tribal governments and federal agencies.

In FY 2008 and 2009, as in FY 2007, the Boise NF continued to meet with designated tribal representatives of the Shoshone-Paiute Tribes of Duck Valley to consult on activities on NFS lands that may affect tribal rights and interests at regular bi-monthly consultation meetings. In June 2007 the Boise NF and Shoshone-Paiute tribes confirmed their continued commitment to a productive consultative relationship by renewing, for another 5 years, the Memorandum of Understanding (MOU) for the “Wings and Roots” process. This consultation process has been in place since Forest Plan implementation began in September 2003, and was initiated in 1999.

The Tribal Relations program with the Shoshone-Paiute Tribes has been highly successful largely due to the relationships that have been built between Tribal and Forest leadership over the last decade through the Wings and Roots process. The Boise NF has been designated as the lead National Forest in Idaho for consultation with the Shoshone-Paiute Tribes largely due to the relationship that has developed. Various proposed projects, Forest Plan amendments and national topics (e.g. Section 8105 of the 2008 Farm Bill) are addressed through the Wings and Roots process. In addition to

regular in-office meetings, various on-site meetings or conference calls occur throughout the year to address concerns, and as needed, resolve potential or identified adverse effects to tribal interests and rights.

In 2008 and 2009, the Boise NF continued to implement consultation under a revised protocol established by the Nez Perce Tribal Executive Committee in 2007. The Forest continues to receive positive feedback, both directly and indirectly, on its commitment to furthering its Government-to-Government relationship with this Tribe.

An example of the commitment from both the Nez Perce Tribe and the Forest to work together to address common resource issues includes restoration activities in the South Fork Salmon River drainage. In 2009 the Nez Perce Tribe and Boise National Forest completed a modification to Master Participating Agreement (MPA) 09-PA-11041200-009 that resulted in development of a partnership to further restoration with focus on projects supporting recovery of ESA listed salmon, a cultural important fish species to the Tribe. Upcoming projects under the MPA include the spring 2010 replacement of fish passage barriers in the upper South Fork Salmon River that will help reconnect 12 miles of high quality spawning habitat for Chinook salmon, steelhead trout, and bull trout. The project will also provide access to cold water refugia for the next 10-20 years as the area recovers from the 2007 Cascade Complex wildfire, which substantially affected fish habitat. It is anticipated that the Tribe and the Forest combined will contribute nearly $1,000,000 in direct dollars and contributed personnel salaries and travel costs to support projects MPA in 2010.

A formal consultation protocol with the Shoshone-Bannock Tribe has yet to be completed. Until this protocol is completed, the Forest Supervisor and District Rangers on the Boise NF continue to communicate with the Tribal Council, as well as the appropriate Tribal staff contacts, through written and verbal communications. Through this interim process, the Shoshone-Bannock tribe identify when they believe proposed activities may affect their tribal rights and interests. As requested by the Tribe, additional staff discussions and/or consultation with the Tribal Council occur to assure the District Ranger or Forest Supervisor understands the potential implication of a decision to tribal rights and interests.

A recent example of the Shoshone-Bannock Tribe and the Forest's commitment to work together on resource issues include discussions initiated in late 2009 about salmon research activities on the Forest. Historically and currently salmon are culturally important to the tribe. A possible multi-year project, the Bear Valley Weir project, would be conducted by tribal members to collect time series information in Bear Valley Creek to examine migrational characteristics of wild Snake River spring/summer Chinook salmon and steelhead via PIT tagging. The study objective would be to determine whether consistent migration patterns are apparent and if so, to determine what environmental factors influence these patterns. The study would characterize migration behavior and estimate survival of different wild juvenile fish stocks as they migrate from natal rearing areas. The results of this study would contribute information to broader studies that are ongoing through NOAA's National Marine Fisheries Service and Bonneville Power Administration (BPA) important to the recovery of ESA listed fish species.

Additional information on Tribal consultation for the appropriate years is provided in the annual "Boise National Forest, Tribal Accomplishment Report." Included in this report are the specific National and local resource topics discussed with each tribe.

WILDERNESS, RECOMMENDED WILDERNESS, and INVENTORIED ROADLESS AREAS Objectives (Forest Plan, page III-74)

This section contains no annual reporting requirements to be included in this year's report.

WILD and SCENIC RIVERS Objectives (Forest Plan, page III-75)

This section contains no annual reporting requirements to be included in this year's report.

RESEARCH NATURAL AREAS Objectives (Forest Plan, page III-76)

This section contains no annual reporting requirements to be included in this year's report.

SOCIAL and ECONOMIC Objectives (Forest Plan, pages III-77)

This section contains no annual reporting requirements to be included in this year's report.

2. Documentation of costs associated with carrying out planned management prescriptions as compared with the costs estimated in the Forest Plan (Forest Plan, p. IV-5).

As described in Chapter IV of the Forest Plan, carrying out the intent of the Forest Plan is dependent on the funding allocated by Congress. During the implementation period of the original Forest Plan (1990-2003), funding was consistently lower than projections for most program areas. Consequently, the 1990 Forest Plan was implemented more slowly than projected.

To predict what was hoped to be a more realistic rate of implementation, the budget level used to develop the revised Forest Plan was based on average allocations to projects (does not include cost pools) from 2001 to 2003 for all programs except timber management (NFTM and SSSS) and hazardous fuels (WFHF). Timber management and hazardous fuels reduction were based on a 10 percent increase over average service level constraints from the Forest Service Budget Formulation and Execution System [BFES] for FY 2003.

Table 8 illustrates how the actual allocations for FY 2008 and FY 2009 compares with the predicted Forest Plan budget level, by program area, as well as the actual allocation for FY 2004, FY 2005, FY 2006, and FY 2007.

Table 8. Boise NF – Predicted Forest Plan Budget Level v. FY 2004- FY 2009 Actual Allocation

Fund Code	DESCRIPTION	Predicted Forest Plan (FP) Budget Level	FY 2004 Actual Allocation	FY 2005 Actual Allocation	FY 2006 Actual Allocation	FY 2007 Actual Allocation	FY 2008 Actual Allocation	FY 2009 Actual Allocation
BDBD	Brush Disposal	128,400	156,300	71,400	115,000	200,000	100,000	75,000
CNFC/ CMII	Facility Construction & Mtce	1,389,100	1,441,000	565,100	662,447[1]	683,546[4]	50,745	79,674
CP09	Facility Improvement & Mtce[2]	N/A	N/A	N/A	269,724	257,120	234,973	245,383
CMRD	Road Construction & Mtce	2,114,800	1,742,700	1,767,600	1,430,598	1,758,986[4,5]	1,542,918	1,520,446
CMTL	Trail Construction & Mtce	224,000	255,200	208,000	208,443	220,377[4]	338,488	353,884
CWKV	Sale Area Improvement	1,666,500	1,379,700	1,290,000	800,000	800,000	554,100	601,978
NFIM	Inventory and Monitoring	845,900	582,340	640,000	369,035	538,608	622,183	718,754
NFLM	Landownership Management	360,100	207,500	239,700	192,937	211,752	142,064	140,265
NFMG	Minerals & Geology Mgmt	403,000	359,240	332,000	386,692	356,895	276,356	253,810
NFPN	Land Management Planning – Maintenance level	297,000	250,500	166,300	172,567	85,468	65,714	101,835
NFRG	Grazing Management	309,200	461,300	380,550	337,163	364,398	425,781	379,112
NFRW	Recreation/Heritage Resources/ Wilderness Management	1,104,100	851,500	887,640	931,288	939,712	987,071	1,082,444
NFTM	Timber Management	3,300,000	1,581,000	2,149,100	1,963,927	2,878,322[5]	2,588,068	2,205,506
NFVW	Veg Mgmt/Watershed Imp/ Soil, Water, Air Mgmt	3,262,000	2,034,000	2,459,400	1,846,161	2,128,096	2,021,642	1,700,421
NFWF	Wildlife/Fish/TES Habitat Mgmt	931,100	681,600	682,000	802,941	759,635	942,656	867,117
RBRB	Range Betterment	26,800	42,500	35,400	42,448	40,941[4]	39,661	42,973
SSSS	Salvage Sale	1,985,000	1,155,000	209,290	200,000	50,000	50,403	107,998
RTRT	Reforestation Trust Funds	1,165,600	971,600	1,274,500	1,159,809	688,779	405,935	667,850
CWK2[3]	Special Projects	N/A	N/A	N/A	1,774,958	55,526[4]	0	15,000
WFHF	Hazardous Fuels	1,899,000	1,934,200	1,750,200	1,641,933	1,842,156	1,690,362	1,986,088
WFPR	Fire Preparedness	6,544,700	4,749,100	4,413,500	5,311,785	5,550,685	5,802,964	5,952,325
TOTAL		**27,956,300**	**20,836,280**	**19,521,680**	**19,842,409**	**20,411,002**	**18,792,084**	**19,097,863**

[1] Includes a one-time appropriation of about $150,000 for the Roaring River culvert replacement.
[2] CP09 is an assessment against project dollars, based on Full-Time Equivalents (FTEs) for improvement and mtce of administrative facilities. CP09 is new in FY 06.
[3] CWK2 is used to supplement NFTM, NFVW (reforestation), NFVW (noxious weeds) and CMRD (road maintenance).
[4] Includes carryover: $42,966 CMRD; $10,867 CMII; $9149 CMRD; $12,384 CMTL; $55,526 CWK2; $8903 RBRB.
[5] One-time appropriation for special projects: $116,800 CMRD; NFTM $282,888.
Note: Each fiscal year's figures are for that specific fiscal year only. Figures are from current budget year authority in FFIS. Includes "brokering" and earmarks, but does not include cost pools. Actual allocations by fund code and program emphasis will vary on an annual basis based on Forest priorities for a given year as well as the will of Congress.

As in earlier years, substantial differences in predicted allocations versus actual were seen in several funding areas in FY 2008 and 2009. During Forest Plan revision, the Boise NF received land management planning funds at a level needed to revise the Forest Plan. Now that the revision process has been completed, the Forest is being funded at a maintenance level that is less than the previous years when revision was ongoing. Reductions or additions in other funding areas reflect, in part, current National and Regional priorities of work for the Forest Service as well as reductions due to competing funding needs for other domestic and national security programs. Because funding for recent years of plan implementation appears to be well below the average anticipated for most funding areas, accomplishment of Forest Plan objectives and desired conditions may be delayed if this trend continues. However, the key measure of the success of obtaining funding to achieve Forest Plan objectives must be looked at and monitored over multiple years (5+ years) before an assessment can be made as to the implications to achieving objectives in the 2003 Forest Plan and their contribution to Forest Plan goals.

3. Population trends of the management indicator species will be monitored and relationships to habitat changes determined (Forest Plan, p. IV-6).

Table 9 below shows the management indicator species (MIS) selected by the Boise NF in their 2003 Forest Plan. The primary reason MIS are selected is because their populations are believed to indicate the effects of management activities. Other reasons are also considered (36 CFR 219.19(a)(1).

Table 9. Management Indicator Species for the Boise National Forest

Type	Common Name	Habitat	Management Concerns
Bird Species	Pileated Woodpecker	PVGs 2-9	Sufficient large trees, snags, and down logs
	White-headed Woodpecker*	PVGs 1, 2, 3, 5	Sufficient snags, and large trees with low crown density
Fish Species	Bull Trout	Perennial streams	Sediment in spawning and rearing areas, water temperature, habitat connectivity

*MIS for Management Areas 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, and 16 only.

Population trend monitoring for bull trout
An approach to monitoring bull trout as a management indicator species was developed with the Sawtooth NF, Intermountain Regional Office, Rocky Mountain Research Station, IDFG, and BOR in 2004.

Illustration by Joseph Tomelleri

For aquatic species, trend is typically monitored using relative abundance estimates over time in a select set of streams. However, the challenge with abundance data is that it is often influenced by sampling error and natural interannual variation in abundance (Platts and Nelson 1988; Maxell 1999; Ham and Pearsons 2000; Dunham et al., 2002). Previous work on bull trout and other salmonids highlight several limitations to monitoring abundance for detecting trends, including (1) low statistical power (Maxell, 1999; Ham and Pearsons, 2000), (2) errors in estimating abundance (Dunham et al., 2001; Peterson et al., 2004), (3) high natural variability in populations (Platts and Nelson, 1988), (4) lack of a connection between abundance and habitat (Fausch et al., 1988), and (5) the high cost of estimating population abundance using rigorous methods, such as mark-recapture.

Given these well-known limitations, an alternative population trend monitoring approach was needed. The alternate approach selected for bull trout is monitoring the spatial patterns of occurrence (distribution) through time. Monitoring distributions can be particularly appropriate for bull trout because it has very specific habitat requirements. Specifically, bull trout distribution is limited to cold water (Dunham et al., 2003), and suitably cold habitats are often patchily distributed throughout river networks (Poole et al., 2001). Dunham and Rieman (1999) found that bull trout populations in the Boise River basin were linked closely to available habitat "patches" or networks of cold water. A patch is defined for bull trout as the contiguous stream areas believed suitable for spawning and rearing (Rieman and McIntyre, 1995). Rieman and McIntyre (1995) analyzed bull trout in the Boise River and found occurrence to be positively related to habitat size (stream width) and patch (stream catchment) area, as well as patch isolation and indices of watershed disruption. Patch size (area) was the single most important factor determining bull trout occurrence.

Spatial patterns can also provide information on population persistence, local extinction and recovery (recolonization). The stability and persistence of metapopulations are related to the number, size, and relative distribution of populations (Dunham and Rieman, 1999). Bull trout populations in larger, less isolated, and less disturbed habitats appear more likely to persist and these habitats may prove critical as long-term refugia or cores for changing environments and future recolonization of restored habitats (Rieman and McIntyre, 1995). Large patches may persist because the populations are larger and because they support more diverse habitats for bull trout allowing some internal stability in the face of variable environments (Rieman and McIntyre, 1995; Dunham et al., 2003).

Based upon the above approach the following metrics for determining trend will be used:

1. The proportion of habitat patches that bull trout occupy within each subbasin through time.

2. The spatial pattern of occupied bull trout patches within each subbasin through time.

3. In the future, we will explore indices of abundance and distribution within individual streams as a metric useful for developing relationships with or exploring the linkages to local management.

<u>2008 and 2009 Monitoring Accomplishments</u>
Data was collected, but no reporting for FY 08 and 09 has been done.

<u>2007 Monitoring Accomplishments</u>
In 2007, the Forest fisheries biologist identified and stratified 179 bull trout patches on the Boise NF.[25] During the 2007 field season, Boise NF and RMRS crews completed MIS protocol surveys in 34 patches. Bull trout presence was confirmed in 21 patches; habitat was determined to be suitable but no bull trout were detected in eight patches; habitat was determined to be unsuitable or inaccessible in five patches.

<u>2006 Monitoring Accomplishments</u>
In 2006, the Forest fisheries biologist identified and stratified 178 bull trout patches on the Boise NF. During the 2006 field season, Boise NF and BOR crews completed MIS protocol surveys in 27

[25] The number of patches identified each year may vary, as new patches are discovered and stratified.

patches. Bull trout presence was confirmed in 14 patches; habitat was determined to be suitable but no bull trout were detected in 10 patches; habitat was determined to be unsuitable or inaccessible in three patches.

2005 Monitoring Accomplishments

In 2005, the Forest fisheries biologist identified and stratified 171 bull trout patches on the Boise NF. During the 2005 field season, Boise NF and BOR crews completed MIS protocol surveys in 29 patches. Bull trout presence was confirmed in 19 patches; habitat was determined to be suitable but no bull trout were detected in 10 patches.

2004 Monitoring Accomplishments

In 2004, the Forest fisheries biologist identified and stratified 170 bull trout patches on the Boise NF. During the 2004 field season, Boise NF and BOR crews completed MIS protocol surveys in 28 patches. Bull trout presence was confirmed in 15 patches; habitat was determined to be suitable but no bull trout were detected in 13 patches.

Data collected over the past four years were compared with data collected prior to 2004 to provide a preliminary indication of trend in bull trout distribution across the planning unit. The results are listed in Table 10.

Table 10. Comparison of Bull Trout Patch Strata: 2003-2007.

	Number of Patches				
Strata	**2003**	**2004**	**2005**	**2006**	**2007**
1 – Occupied	47	N/A	56	56	59
2 – Suitable/Unoccupied	64	N/A	62	59	59
3 – Unsuitable/Inaccessible	17	N/A	19	22	37
4 - Unsurveyed	50	N/A	42	41	24

The results displayed in Table 9 indicate an increase in distribution of bull trout over the last four years. Bull trout were probably present, but previously undetected, in many of the patches that were reclassified as occupied in the last four years. However, data from a few of these reclassified patches indicates recently founded populations, based on the limited number of age classes detected. Table 9 also shows an increase in the number of unsuitable/inaccessible patches. These patches were reclassified as unsuitable/inaccessible based on recently acquired data that documented unfavorable existing conditions, such as high water temperature, natural barriers, and/or high brook trout abundance. ***Based on these presence/absence data, occupied bull trout spawning and early-rearing habitat on the Boise NF increased from approximately 238 to 293 stream miles from 2003-2007.***

Population trend monitoring for pileated and whiteheaded woodpeckers

The primary goal of the Boise NF MIS/Landbird Monitoring Program is to estimate the overall population trends on the Forest for specific avian MIS; namely, the pileated woodpecker and the white-headed woodpecker. The secondary goal of this monitoring strategy is conduct an assessment of habitat relationships as they relate to population trends for those two species.

The monitoring strategy adopted by the Boise NF is modeled on standardized bird monitoring methods (i.e., Hamel et.al., 1996 and Ralph et.al., 1993), which is being applied on the National Forests in Idaho in Region 1, as well as the Payette and Sawtooth NFs in Region 4 (adjacent to the Boise NF). As such, the data collected from any one unit becomes not only relevant to its

particular Forest, but contributes to larger data sets which allow monitoring trends to be evaluated at multiforest scales, state-wide scales, or regional scales. The Region 1 protocols have been in place for 10 years and are well tested as to achieving their goal for establishing population trend data.

The adopted monitoring strategy is a population-based approach to bird monitoring that spreads survey locations randomly across the Forest, irrespective of habitat to determine an overall population trend for the Forest. Hutto and Young (2002) stated region-wide, long-term trends in population abundance can be achieved by sampling in a geographically stratified but otherwise random and unbiased manner using population-based monitoring designs. The ability to implement a purely random placement of points, however, can become labor intensive leading to high costs for implementation, and may require some modification in order to effectively implement the strategy. Additionally, while a completely random stratification provides a general view of bird populations in an area, rare habitats may be undersampled (Hutto and Young, 2002). Strictly habitat-based monitoring designs are not necessarily the solution either since they, too, can produce biased estimates of population trends since the sampling effort is concentrated only in habitats of interest. It appears then that a monitoring design that uses both geographically random stratification for transect identification and additional points to increase coverage in undersampled habitats would compensate for the weaknesses in following either one design wholly (Howe et al., 1995 in Hutto and Young, 2002).

The survey design for the Boise NF samples both potential and existing suitable habitat across the historic range of the pileated woodpecker and the white-headed woodpecker. Permanent monitoring points were established on each Ranger District in 2003. Points were initially mapped by the Forest and District wildlife biologists and individual points were then later marked in the field by the District wildlife biologists. During implementation of the survey in 2004 it was discovered that some points could not be monitored due to logistical problems (access, water noise, etc.). Those points were relocated and surveys completed by the District wildlife biologist during the appropriate timeframe. In 2005, all survey routes were monitored and there were no further relocations done.

Each year, a series of 50 transects, each consisting of 10 sampling points, are monitored across habitat suitable for these two species (total monitoring points equal 500 points). A number of points are capable of detecting either species due to the changes in habitat from historic to current. Points were set up to geographically stratify the monitoring across the Forest while making sure a minimum of 250 points occurred across the range of each species. Points fell in various cover types, landscapes, managed habitats, and heterogeneous mosaics, however, the adequate sampling of habitat types of interest, particularly for the white-headed woodpecker, was tracked and figured into the final selection of the transects. As long as the points are sampled over a specified period of time, overall population trends are relatively simple to calculate and are robust (Hutto and Young, 2002).

Since establishing the survey transects several large fires on the Forest have affected the forested vegetation for some survey areas. In particular, the Lightning, Cascade Complex, and Rattlesnake fire have altered forest canopy, structure, and snag density on certain routes. Habitat associated with points on these transects is being resampled to document the changed conditions. At the five-year monitoring interval, a review of the monitoring strategy will be completed to ensure it still meets assumptions regarding monitoring for these two species.

2009 Monitoring Accomplishments

All transects (500 points) were surveyed in 2009. A total of 28 pileated woodpeckers were detected at 26 points and 2 white-headed woodpeckers at 1 point. An additional 7 pileated woodpeckers were detected outside the monitoring interval on 7 survey routes; no additional white-headed woodpeckers were detected outside the monitoring interval.

2008 Monitoring Accomplishments
All transects (500 points) were surveyed in 2008. A total of 30 pileated woodpeckers were detected at 28 points and 2 white-headed woodpeckers at 2 points. An additional 2 pileated woodpeckers were detected outside the monitoring interval on 2 survey routes; no additional white-headed woodpeckers were detected outside the monitoring interval.

2007 Monitoring Accomplishments
All transects (500 points) were surveyed in 2007. Thirty-one pileated woodpeckers were detected at 27 points and 7 white-headed woodpeckers at 7 points. An additional 3 pileated woodpeckers were detected outside the monitoring interval on 3 survey routes; one additional white-headed woodpecker was detected outside the monitoring interval on another route.

2006 Monitoring Accomplishments
All transects (500 points) were surveyed in 2006. Twenty-six pileated woodpeckers were detected at 23 points and 3 white-headed woodpeckers at 3 points.

2005 Monitoring Accomplishments
All transects (500 points) were surveyed in 2005. Thirty-six pileated woodpeckers were detected at 32 points and 4 white-headed woodpeckers at 2 points.

2004 Monitoring Accomplishments
All transects (500 points) were surveyed in 2004. Pileated woodpeckers were detected at 14 points and white-headed woodpeckers at 5 points.

Annual point count data will be used to establish trend relationships for these two species over time. As of 2009 there are six years of point count data on the Boise National Forest.

Relating changes in habitat for management indicator species to changes in population trends
In 2004, the Boise NF, in cooperation with Rocky Mountain Research Station, NOAA Fisheries, and FWS developed a "Framework for Implementation of the 2003 Forest Plan." The focus of the current prototype process is threatened and endangered fish and wildlife species, including bull trout. Over time, framework will also be used in the process of building relationships between population trends and changes in habitat for the terrestrial MIS, and pileated and white-headed woodpeckers.

Framework contains six steps envisioned as a dynamic and iterative process for:

- maintaining up-to-date baselines (i.e., current conditions) for various resources,
- identifying the various threats and related risks to baselines for various fish and wildlife species of interest, and
- based on analyses of the probable influence of the various threats and risks to species and habitat, identify key conservation and restoration needs that are likely to provide the greatest strides toward the maintenance or improvement of species habitat and population numbers and distribution (i.e., desired conditions).

Specific to MIS species population trend and habitat relationships, the Boise NF "Framework" process will be used to correlate population monitoring transects or patches and their associated habitat information (both step 1 - existing baselines and step 2 - desired conditions). The Risk Analysis step (step 4) will then be used to predict positive or negative population responses of the species' of interest given changes in baseline conditions and/or modeled habitat variables.

4. Accomplishment of ACS priority subwatershed restoration objectives (Forest Plan, p. IV-6).

No additional reporting has been done for FY 2008 and 2009. Table 11 shows restoration accomplishments undertaken in Aquatic Conservation Strategy (ACS) priority watersheds, for FY 2004 through 2007. (See also section II.2 below, for more discussion of ACS priorities.)

Table 11. Restoration Completed in ACS Priority Subwatersheds: FY 2004 - FY 2007[26]

ACS Priority Subwatershed	FW or MA Objective(s) Addressed[27]	2004 Work Completed (as of Sept 2004)	2005 Work Completed (as of Sept 2005)	2006 Work Completed (as of Sept 2006)	2007 Work Completed (as of Sept 2007)
Upper Bear Valley	SWOB12, SWOB13, SWOB14, SWOB16, SWOB18, TEOB03, TEOB09, TEOB10 In FY 04, 1221, 1222, 1225, 1228 In FY 05, 1221, 1223, 1226	Contracted replacement of Cub and Casner Creek culverts to restore fish passage to 4 miles of stream habitat. Sedge/shrub planting (coop proj with IDFG to enhance streamside vegetation and improve streambank stability): 2 acres.	Replaced Cub and Casner Creek culverts to restore fish passage to 4 miles of stream habitat.		Green Lidar flight of the Casner Cr restoration channel. Planted willow, re-seeded streambanks around Casner, Cub Creek recently-replaced culvert arches as part of re-veg plan.
Lower Deadwood	In FY 04, TEOB03; 1321, 1326, 1350 In FY 06-07, FMOB02, FMOB04	Streambank and slope stabilization to reduce erosion and sedimentation associated with road work: 3 acres. Pidgeon Flat seeding for soil erosion/sedimentation stabilization: 1 acre.		Completed 900 acres of prescribed burning.	Completed 1093 acres of prescribed burning.
Bear Creek (SFBR subbasin)	SWOB16, MIOB01, MIOB08	Removal of old 12-inch diameter water quality monitoring well used as public disposal site: 1 ac			
Third Fork	SWOB12, SWOB13, SWOB14, SWOB16, SWOB18, SWOB19, TEOB03, TEOB09, TEOB10 1608, 1609, 1612, 1615 FMOB02 FMOB04, FMOB05	Replaced Rammage Meadows culvert with open bottom structure: 7 stream mi imp + 1 acre disturb area seeded Replaced Wilson culvert with open bottom structure: 6.1 stream miles improved + 1 acre of disturbed area seeded. [28]			Riparian planting at Squaw Creek AOP sites (0.25 stream miles enhanced at Rammage and Wilson creeks). Completed 394 acres of mechanical fuels treatment. Decommissioned 1.0 miles of authorized road as part of Upper Muir project.

[26] This table only includes restoration activities for ACS priority watersheds. Restoration activities for non-ACS subwatersheds are reported in Table 9. In addition, for this table, accomplishment of timber stand improvement (TSI), prescribed fire and mechanical fuels treatment is reported beginning in FY 2005.
[27] Forestwide objectives (management direction) begin with alphabetic characters, while objectives specific to management areas begin with numeric characters.
[28] These replacements were part of the Third Fork culvert replacement project and were jointly funded by the Forest Service ($35,000), US Fish and Wildlife Service ($15,000 Grant), and the RAC ($70,000 Grant).

ACS Priority Subwatershed	FW or MA Objective(s) Addressed[29]	2004 Work Completed (as of Sept 2004)	2005 Work Completed (as of Sept 2005)	2006 Work Completed (as of Sept 2006)	2007 Work Completed (as of Sept 2007)
Elk Creek	TROB01		Completed 99 acres of timber stand improvement (TSI) to move veg towards desired conditions.		
Upper Middle Fork Payette	In FY 05, TROB01 In FY 06, SWOB03, SWOB16, SWOB18, FROB04, FROB06, FROB12 1522, 1522, 1524, 1527 In FY 06, SWOB12, SWOB13, SWOB14, SWOB16, SWOB18, TEOB03, TEOB09, TEOB10		Completed 452 acres of TSI to move veg toward desired conditions.	Decommissioned 1.1 miles of 409F road, reduced sediment delivery to 1.3 miles of stream. Replaced two culverts on 409 road to restore Aquatic Organism Passage to 1.0 mile of stream.	
North Fork Gold Fork	TROB01		Completed 106 acres of TSI to move veg towards desired conditions.		
Squaw-Pole	FMOB02 FMOB04 FMOB05		Completed 670 acres of prescribed fire.		Completed 1106 acres of prescribed fire, 60 acres of mechanical fuels treatment.
Upper Mores Creek	FMOB02 FMOB04		Completed 100 acres of prescribed fire.		
Roaring River	SWOB12, SWOB13, SWOB14, SWOB16, SWOB18, TEOB03, TEOB09, TEOB10 0618			Contracted replacement of Roaring River culvert to restore fish passage to 4.5 miles of stream habitat.	Replaced Roaring River culvert to restore fish passage to 4.5 miles of stream habitat.
Bull Creek	SWOB16 1521, 1522, 1524, 1527			Removed 4 failing culverts at stream crossings and temporarily closed the Silver Creek Summit ATV trail.	

[29]Forestwide objectives (management direction) begin with alphabetic characters, while objectives specific to management areas begin with numeric characters.

ACS Priority Subwatershed	FW or MA Objective(s) Addressed[30]	2004 Work Completed (as of Sept 2004)	2005 Work Completed (as of Sept 2005)	2006 Work Completed (as of Sept 2006)	2007 Work Completed (as of Sept 2007)
Curtis Creek	SWOB03, SWOB05, SWOB13, SWOB16, SWOB18, SWOB19				Cascade Complex Burned Area Emergency Response (BAER): aerial straw mulching; removed/ replaced culverts and improved road drainage on authorized roads to address potential increase in post-fire runoff and erosion.
Upper Burntlog	SWOB03, SWOB05, SWOB13, SWOB16, SWOB18, SWOB19				Cascade Complex BAER: removed/ replaced culverts and improved road drainage on authorized roads to address potential increase in post-fire runoff and erosion.
Six-Bit Creek	SWOB03, SWOB05, SWOB13, SWOB16, SWOB18, SWOB19				Cascade Complex BAER: aerial straw mulching; removed/ replaced culverts and improved road drainage on authorized roads to address potential increase in post-fire runoff and erosion.

[30]Forestwide objectives (management direction) begin with alphabetic characters, while objectives specific to management areas begin with numeric characters.

5. Terms and conditions or reasonable and prudent measures that result from consultation under Section (a) of the Endangered Species Act (Forest Plan, p. IV-6).

Both NOAA Fisheries and the USFWS issued biological opinions in response to the Federal Action (i.e., proposed action or management strategy) outlined in the 2003 Forest Plan. However, only NOAA Fisheries issued reasonable and prudent measures and related terms and conditions with their biological opinion.

Reasonable and Prudent Measures (RPMs) are nondiscretionary measures to minimize take that may or may not already be part of the proposed action. They must be implemented as binding conditions for the exemption in section 7(o)(2) to apply. The Forest Service has the continuing duty to regulate the activities covered in this incidental take statement. If the Forest Service fails to carry out required measures, fails to require applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) that will become effective at the project level may lapse. To be eligible for an exemption from the prohibitions of Section 9 of the ESA, the Forest Service must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity. These terms and conditions are non-discretionary.

Illustration by Joseph Tomelleri

Three terms and conditions related to the three RPMs in the NOAA Fisheries biological opinion require annual reporting. They are identified below, along with the various years' accomplishments related to them.

- **RPM 1: Minimize the likelihood of incidental take by clarifying local sideboards pertaining to: D. Fire Management Timelines for Fire Operational Resource Guidance**[31]

  To clarify this sideboard, the Boise NF was to develop operational guidance before the 2004 fire season. As described earlier under TEOB23, operational resources were finalized on the Boise NF for the 2004, 2005, 2006, 2007, 2008 and 2009 fire seasons.

- **RPM 2: Minimize the likelihood of incidental take by maintaining the necessary linkages between the Boise National Forest Plan and broad-scale restoration/recovery strategies. To implement RPM 2 the Boise National Forest is required to: A. Provide an oversight and accountability body that links to IIT by continuing to work with the IIT and provide exchange of information regarding process that are local in scope, but have broad scale implications, such as subbasin planning, watershed analysis and monitoring.**[32]

[31] Although Terms and Conditions A-C, E and F under RPM 1 do not have annual reporting requirements pertaining to this report, Term and Condition D does.

[32] Although Term and Condition "B" under RPM 2 does not have an annual reporting requirement pertaining to this report, Term and Condition A does:

The Interagency Implementation Team (IIT) conducts monitoring at the level of the Forest Service Forest Plan or BLM Resource Management Plan for the salmon, steelhead, and bull trout listed in the Upper Columbia and Snake River Basins. Both implementation and effectiveness monitoring are conducted annually by the Forest Service and BLM administrative units, including the Boise NF, in a sample of sixth field hydrologic units (HUs).

The 2003 Forest Plan monitoring (Forest Plan, Chapter IV) was built with consideration of the current IIT monitoring being conducted across the planning unit. However, because the IIT *implementation* monitoring process is based on the specific direction found in Pacfish and Infish, it cannot be tied directly to the direction found in the Forest Plan. However, it is clearly possible to use the same or similar monitoring protocols to allow the Forest Plan *implementation* monitoring protocols to be aggregated to the basin level with the rest of the implementation monitoring data conducted on other administrative units. In 2006, the Boise NF worked with the IIT monitoring task team to provide greater alignment between Forest Plan and IIT monitoring, to make them as complementary as possible.

IIT *effectiveness* monitoring is conducted annually by a centralized unit across a sample of sixth field HUs within the basin on a 5-year cycle. IIT effectiveness monitoring involves collection and analysis of data on the channel and stream processes to assess how baselines are changing. Data collection for this effort is not dependent on specific direction, but is intended to answer the question "Are key biological and physical components of aquatic and riparian communities maintained, degraded, or restored in the range of steelhead and bull trout?" Essentially, this monitoring is intended to provide an indicator as to whether management strategies being implemented across the basin are resulting in the desired maintenance or improvement of the key biological and physical components considered. Data for the IIT effectiveness monitoring is stored in a database at the Forest Service Fish Ecology Unit, Logan, UT, and is available to the administrative units and Services.

As Boise NF and IIT personnel evolve the "bridge" between *implementation* monitoring efforts, the Forest continued to participate in the *effectiveness* monitoring program in 2007. In previous years, a report pertaining to the effectiveness monitoring, prepared by the Fish Ecology Unit, was attached to the Forest's annual monitoring report. In 2007, this report was not prepared.

The Boise NF, Sawtooth NF, and IIT staff collaborated on an Forest Plan effectiveness monitoring strategy to address five of the eight SWRA monitoring elements in Chapter IV: (1) Riparian condition, (2) Distribution of aquatic ecosystems, (3) Aquatic ecosystems stream flows, (4) Water quality and beneficial use status, and (5) Aquatic ecosystems. This strategy incorporates data from all of the IIT effectiveness monitoring sites within the Boise, Payette and Sawtooth NFs and identifies supplemental sites to be sampled using the same protocols. The PIBO program has sampled 20 supplementary sites on the Sawtooth NF and 18 on the Boise NF. These additional sampling locations were established to increase sample sizes in the three management categories used in the new Forest Plan. These sites will increase our ability to detect trends at the three-Forest (Sawtooth, Boise, and Payette) plan scale. Additional funding was provided by the Sawtooth and Boise NFs and these sites will be re-sampled on a five-year rotation. Power analysis indicates that this monitoring design is adequate to detect a 10 percent change in resource conditions in the subwatersheds in each of the three WARS priority strata over the life of the Forest Plans.

- **RPM 3: Minimize the likelihood of incidental take by implementing subbasin-specific direction as outlined for the … South Fork Salmon River subbasins. To implement RPM 3 the Boise National Forest is required to:**

  Terms and Condition "A" under RPM 3 does not pertain to the Boise NF. Term and Condition "C" does not have an annual reporting requirement pertaining to this report. However, Term and Condition B has two items pertaining to this report:

  - Term and Condition B.1 required the Payette and Boise NFs to revise the default sediment watershed condition indicator (WCI) values to something more appropriate for the South Fork Salmon River (SFSR). On July 13, 2005, the Payette and Boise National Forest Supervisors transmitted the final version of this white paper to NOAA Fisheries and documented interagency agreement on the white paper and use of its revised values for analysis of effects for future projects within the SFAR basin. The sediment WCI paper is entitled, *Developing Appropriate Sediment-Related Watershed Condition Indicators for National Environmental Policy Act Analyses and Biological Assessments in the South Fork Salmon River Basin* (Nelson and Burns 2005), and is available from the Boise NF.

    The analysis supporting the paper estimated what watershed condition indicators researchers could expect in streams functioning at the three categories defined in the Forest Plan (Functioning at Acceptable Risk, Functioning At Risk, and Functioning at Unacceptable Risk). The paper proposed four major categorical changes: (1) modifications to the indicator names; (2) combining indicators for salmonids where appropriate and rearranging species associations; (3) using free matrix counts in preference to cobble embeddedness measurements for interstitial conditions; and (4) eliminating or relegating surface fines to a support role.

    These proposed WCIs incorporate inherent variability so that risks to the aquatic system can be minimized when Forest projects are planned and implemented in the granitic portions of the SFSR. The two Forests will now proceed with use of the revised sediment WCI values for analysis in future biological assessments.

  - Term and Condition B.2 called for continuation of the current sampling, analysis, and annual reporting of sediment levels (core, free matrix/pebble count, and cobble embeddedness) in the mainstream and tributaries of the South Fork Salmon River for the duration of the revised Forest Plans. Boise NF personnel, in coordination with the Payette NF (the lead Forest for this effort) continued its sampling of sediment levels in the mainstream and tributaries of the South Fork Salmon River in 2008 and 2009. The report pertaining to this activity is now available as Attachment 1 of this report, and it includes information from 2003 through 2009.

II-2: Monitoring Elements Found in Table IV-2 of the Forest Plan with Annual Reporting Requirements

As described in Chapter IV of the Forest Plan, monitoring elements were designed around monitoring questions that need to be answered about Forest Plan implementation. These questions are key to determining if we are moving toward meeting the desired conditions identified in the Forest Plan. Following is a summary of the findings for those elements required to monitor and evaluate on an annual basis:

Safety of Administrative Facilities

Monitoring Question: Are administrative sites safe and accessible for visitors and employees including drinking water sources? (annual reporting)

Work Completed and Summary of Findings: Approximately 20 percent of administrative buildings are condition surveyed each year by Forest engineering personnel. Maintenance, accessibility, and health and safety needs are documented as part of these inspections. The IWEB data base (formerly INFRA) is the system of record for the maintenance needs, deficiencies, and estimated costs. Health and safety items are shown as one of the priority classifications. In addition to the condition surveys, health and safety inspections are performed annually by the Forest Safety Officer or District Facility Managers when opening remote facilities. Results of these inspections are kept in the permanent building files at the Forest Supervisor's Office. The accessibility status of all buildings is shown in the IWEB building module for each building.

Approximately 20 percent of drinking water systems are given in depth sanitary survey inspections each year. Sanitary surveys are required every five years at a minimum to assess the overall operational quality, function, and maintenance needs. Deferred maintenance needs are documented as deficiencies in the IWEB (INFRA) database. Results of all water monitoring tests are documented in the IWEB water module. Annually, water system operators perform a system condition inspection prior to seasonal opening of the water system. Results of these inspections are kept in the permanent water system files at the Forest Supervisor's Office.

Maintenance activities and priorities of administrative buildings and water systems are determined based on opening inspections, prior year condition surveys, and personnel reports during the season of operation. District safety inspections and actions focus on high risk issues like propane inspections, wood stove inspections, electrical system needs and other elements of constructed infrastructure. Accessibility guides are met when existing facilities undergo major renovation or new buildings are constructed. There was no change in accessibility status from 2006, 2005 or 2004.

In 2009, 147 water samples were taken and tested from 15 open administrative facilities. Two deficiencies related to the Safe Drinking Water Act occurred. All deficiencies involved water sampling that had been inadvertently missed, and these discrepancies have since been rectified. Overall, the monthly sampling collected and analyzed indicated all administrative-site water systems met Safe Drinking Water Act standards and Forest Service regulations.

In 2008, 136 water samples were taken and tested from 15 open administrative facilities. Four deficiencies related to the Safe Drinking Water Act occurred. All deficiencies involved water sampling that had been inadvertently missed, and these discrepancies have since been rectified. Overall, the monthly sampling collected and analyzed indicated all administrative-site water systems met Safe Drinking Water Act standards and Forest Service regulations.

In 2007, 128 water samples were taken and tested from 14 open administrative facilities. Eleven deficiencies related to the Safe Drinking Water Act occurred. All deficiencies involved water sampling that had been inadvertently missed, and these discrepancies have since been rectified. Overall, the monthly sampling collected and analyzed indicated all administrative-site water systems met Safe Drinking Water Act standards and Forest Service regulations.

During 2006, the Lowman Ranger Station water system was reconstructed to meet state and federal standards. In 2006, 14 administrative-site water systems were open, and 137 water samples were obtained. Overall, all administrative-site water systems met Safe Drinking Water Act and Forest Service regulations.

In 2005, the Warm Lake water system was improved to meet safety standards. In 2005, 10 administrative-site water systems were open, and 131 water samples were obtained. Nine samples were associated with Safe Drinking Water Act deficiencies. All deficiencies involved water sampling that had been inadvertently missed, and these discrepancies have since been rectified.

Safety of Developed Recreation Sites

Monitoring Question: Are developed recreation sites free of high-risk conditions? Do water systems meet Federal, State, and local requirements? (annual reporting)

Work Completed and Summary of Findings: Generally, all Forest developed recreation sites are inspected in the spring or early summer, in conjunction with opening for the summer season. Any identified hazards are removed or mitigated at this time. District safety inspections and actions focus on high-risk aspects such as hazard tree removal, propane and woodstove safety, electrical system needs, and other elements of constructed infrastructure. Developed recreation site maintenance activities are established based on the individual site needs as determined during pre-opening inspections, condition surveys, and user or staff reports during the operating season. Annually, health and safety inspections of rental facilities are performed by the Forest Safety Officer or by the District Facility and Recreation managers.

Water systems are managed and tested in accordance with the Safe Drinking Water Act and Forest Service regulations. A total of 20 percent of the drinking water systems receive in-depth sanitary survey inspections each year. Deferred maintenance needs are documented as deficiencies in the INFRA database. Results of all water monitoring tests are documented in the INFRA water module. Annually, water system operators perform a system condition inspection before seasonal opening of the water system. Results of those inspections are kept in the permanent water system files at the Supervisor's Office.

In 2009, 413 water samples were taken and tested from 64 open recreational facilities. Thirty-four samples were associated with Safe Drinking Water Act deficiencies. All deficiencies involved water sampling that had been inadvertently missed, and these discrepancies have since been rectified. The new well water system for Rainbow Point and Amanita campgrounds was completed. Water lines were replaced at Kirkam and Deadwood campgrounds.

In 2008, 413 water samples were taken and tested from 64 open recreational facilities. Twenty-five samples were associated with Safe Drinking Water Act deficiencies. All deficiencies involved water sampling that had been inadvertently missed, and these discrepancies have since been rectified. Beginning in 2008, a new well was installed for the Rainbow Point/Amanita campground water system.

In 2007, 419 water samples were taken and tested from 64 open recreational facilities. Nine samples were associated with Safe Drinking Water Act deficiencies. All deficiencies involved water sampling that had been inadvertently missed, and these discrepancies have since been rectified. Numerous recreation sites were temporarily closed to the public during wildfire emergencies in 2007 including most of the campgrounds in the South Fork Salmon River, Stolle Meadows, Warm Lake, and Johnson Creek areas.

Forest staff also worked to improve and upgrade a number of recreation water systems across the Forest. Two water system hand pumps at Sagehen Campground on the Emmett RD were replaced to correct several deferred maintenance needs. A new hand pump was installed on the existing well at Boiling Springs guard station, available to the public as a rental cabin. The hand pump replaced a

small recently-closed distribution system subject to several maintenance problems. All three hand pumps were ADA Simple Pumps, making the systems more accessible to the public. Part of the distribution system at the Barber Flat rental cabin on the Idaho City RD was replaced to correct system leakage.

In 2006, 463 water samples were taken and tested from 69 open recreational facilities Monthly samples collected from these water systems during the months that the systems were open for use determined that each of these systems were compliant with the Safe Drinking Water Act standards. Numerous recreation sites were temporarily closed to the public during wildfire emergencies in 2006, including the Middle Fork Payette River complex, the Deadwood Reservoir complex, Bull Trout Lake campground, Summit Lake campground and the Roaring River/Trinities Lakes complex.

In 2005, 71 recreation-site facilities were open, and 453 water samples were obtained. Forty-eight samples were associated with Safe Drinking Water Act deficiencies. All deficiencies involved water sampling that had inadvertently been missed, and these discrepancies were rectified.

Protection of Historic Properties

Monitoring Question: Are historic properties being affected by project activities? (annual reporting)

Work Completed and Summary of Findings: In 2009, two projects that received cultural resources clearance in a previous year were monitored during or following project implementation to determine if National Historic Preservation Act (NHPA) Section 106 compliance stipulations were met. The Forest Service, in consultation with the Idaho State Historic Preservation Office (SHPO), determined that the projects were implemented consistent with the requirements to avoid adverse effects to historic properties.

In 2008, one project that received cultural resources clearance in a previous year was monitored during or following project implementation to determine if NHPA Section 106 compliance stipulations were met. The Forest Service, in consultation with the Idaho SHPO, determined that the project was implemented consistent with the requirements to avoid adverse effects to historic properties.

One project that received cultural resources clearance in 2008, with a stipulation to avoid ground disturbance on one historic property, was implemented with a potential adverse effect to the site. The Boise NF is consulting with the Idaho SHPO and affected Indian Tribes to resolve this situation.

In 2007, six projects that received cultural resource clearance in a previous year were monitoring during or following project implementation to determine if NHPA Section 106 compliance stipulations were met. The Forest Service, in consultation with the Idaho SHPO, determined that the projects were implemented consistent with the requirements to avoid adverse effects to the historic properties.

In 2006, one project that received cultural resource clearance in a previous year was monitored during or following project implementation to determine if NHPA Section 106 compliance stipulations were met. The Forest Service, in consultation with the Idaho SHPO determined that this project was implemented consistent with the requirements to avoid adverse effects to historic properties.

In 2005, 97 projects were reviewed for their potential to affect historic properties. Five projects that received cultural resource clearance in previous years were monitored during or following project

implementation to determine if NHPA Section 106 compliance stipulations were met. The Forest Service, in consultation with the Idaho SHPO, determined that these projects were implemented consistent with the requirements to avoid adverse effects to historic properties.

In 2004, 91 projects were reviewed for their potential to affect historic properties. Twelve projects that received cultural resources clearance in previous years were monitored, and determined to be consistent with the requirements to avoid adverse effects to historic properties.

Watershed Restoration and Conservation Activities

Monitoring Question: Have restoration and conservation activities been focused in priority watersheds identified by the WARS process? (annual reporting)

Work Completed and Summary of Findings: The Watershed Aquatic Recovery Strategy (WARS) is a process that identified restoration priorities (high, moderate, and low) and restoration type (passive, active, and conservation) among the 650 subwatersheds across the Southwest Idaho Ecogroup.[33] This strategy provides the "blueprint" for recovery and protection of aquatic (both physical and biological) resources across the Ecogroup.

The intent of the WARS strategy is the movement of subwatershed functions, ecological processes, and structures toward desired conditions. The intent of WARS is also to: (1) secure existing habitats that support the strongest populations of wide-ranging aquatic species and the highest native diversity and geomorphic and water quality integrities; (2) extend favorable conditions into adjacent subwatersheds to create a larger and more contiguous network of suitable and productive habitats; and (3) restore soil-hydrologic processes to ensure favorable water quality conditions for aquatic, riparian, and municipal beneficial uses that will fully support beneficial uses and contribute to the de-listing of fish species and 303(d) water quality limited water bodies.

WARS identified subwatersheds with high aquatic integrity (strong populations of listed fish species and native cutthroat trout), high geomorphic integrity, and high water quality integrity. These subwatersheds received the highest priority for restoration; specifically, a conservation strategy that maintains and protects their high quality with minimal short-term risk from other management actions.

High priority subwatersheds were further prioritized to focus recovery efforts and provide a "blue print" as to which should be the highest priority for restoration or conservation during the planning period (next 10-15 years). ACS priority subwatersheds were identified for each subbasin to represent the "highest of the high" in terms of applying management direction and restoration prioritization, especially for short-term recovery objectives. This process is designed to focus management direction and restoration prioritization for the recovery of listed fish species, their habitats, and 303(d) impaired water bodies, and other soil, water, riparian and aquatic resources.

Restoration work includes that specifically targeted at aquatic conditions, and that undertaken to restore other resource conditions. Restoration occurs in ACS and WARS priority subwatersheds, and in other subwatersheds. Table 8 shows restoration work (both aquatic-specific and other) in ACS priority subwatersheds, while Table 9 displays restoration work (both aquatic-specific and other) in WARS priority and other subwatersheds.

[33] The Southwest Idaho Ecogroup is an Intermountain Region grouping of the Boise, Payette and Sawtooth NFs, which share similar ecosystem components. In the mid 1990s, the three Forests decided to revise their Forest Plans together and analyze the effects of this action in one Environmental Impact Statement (EIS).

Aquatic restoration can be measured by: a) how many projects were implemented; (b) how many acres were accomplished; and (3) how many dollars were spent. No additional reporting for FY 2008 and 2009 has been done. The information for previous years is summarized below and displayed in Table 11, which shows projects undertaken in ACS priority subwatersheds, and Table 12, which shows projects undertaken in non-ACS subwatersheds.

In FY 07, about 24 directly-related aquatic restoration projects and 27 indirectly-related aquatic restoration projects were completed. The FY 07 accomplishments supplement, and show a substantial increase over, what was accomplished in FY 06 and FY 05. In FY 2006, 17 aquatic restoration projects were completed, while in FY 2005, nine aquatic restoration projects were undertaken.

Although ACS and WARS high subwatersheds are the highest priority for restoration, not all restoration projects implemented or dollars spent in FY 05-07 occurred in these subwatersheds. This is due to several reasons. First, many of the aquatic restoration projects implemented in FY 06 and FY05 were planned several years ago under the previous Forest Plan and past planning efforts. Consequently, some projects were not planned with Forestwide or management area objectives or WARS emphasis in mind. Second, some restoration projects are driven by specific resource issues that must be addressed immediately or additional degradation may occur (i.e., Burned Area Emergency Response (BAER) emergency stabilization projects, sediment produced by a storm-damaged road or user-created trail). Finally, restoration projects may be driven by outside groups that have a specific interest in an issue or aquatic resource that falls outside of ACS priority subwatersheds. Even with these considerations, the projects implemented in FY 05 through FY 07 still addressed many key Forestwide or management area objectives in ACS or high priority subwatersheds (Tables 11 and 12). As Ranger Districts have time to more fully implement the 2003 Forest Plan and the WARS strategy, more projects likely will be implemented in ACS and WARS high priority subwatersheds.

Table 12. Other ACS Restoration Completed in Subwatersheds: FY 2004 -2007[34]

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Big Pine Creek subwatershed	SWOB03 SWOB16 SWOB18 1117, 1118	Active/Moderate	Seeding of disturbed areas associated with the debris torrent, road blowout road and channel reconstruction): 2 acres			Initiated data gathering with FHWA to prepare enviro analysis supporting Big Pine Creek Culvert replacement
Bridge-Bryan subwatershed	In FY 04, SWOB03 SWOB16 SWOB18 1522, 1528, 1539, 1548, 1550 In FY 06, SWOB16 1417, 1418	Active/High	Seeding of disturbed areas associated with the new MFPR trailhead and reconstruction of Boiling Springs CG: 1 acre		Blocked two user-developed ATV trails from Boiling Springs CG using fence posts and posted closed signs to reduce soil erosion and sediment delivery for 1 acre of watershed improvement.	
Cache subwatershed Wyoming subwatershed	SWOB16 1221, 1222, 1225, 1228	Passive/High	Sedge/shrub planting: coop w/IDFG to enhance streamside veg and improve streambank stability: 1 acre			Red Mtn Fire BAER: aerial straw mulching within six units totaling 1,480 acres
Cascade Reservoir subwatershed	FROB06 SWOB03 SWOB16 SWOB18 1826, 1842, 1844	Active/High	Decommissioning of unclassified user developed dispersed recreation road to reduce soil erosion and sedimentation: 1 acre.			
Lower Clear Creek subwatershed	SWOB16 1027,1028, 1032, 1036, 1047	Active/Moderate	Dispersed campsite restoration (8 acres), including shrub planting to improve riparian vegetation and increase streambank stability.			

[34] This table does *not* include restoration activities for ACS priority watersheds, which are reported in Table 10. In addition, for this table, accomplishment of timber stand improvement (TSI), prescribed fire and mechanical fuels treatment is reported beginning in FY 2005.

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Fir Creek subwatershed	In FY 04, REOB1, REOB11, SWOB16, TEOB07, TEOB09 In FY 05, SWOB16, REOB01; 1236	Active/High	Installed fencing along Bear Valley Creek at Fir Creek Campground to eliminate foot traffic from 900 feet of streambank. Labor provided by Trout Unlimited volunteers.	Planted shrubs along Bear Valley Creek within the Fir Creek Campground to enhance 0.25 miles of stream. Species included wild rose, shrubby cinquefoil, current and red-osier dogwood.		See Cache Creek subwatershed above.
Lower Bear Subwatershed within the North and Middle Fork Boise Subbasin	In FY 04/05, SWOB03 SWOB18 REOB05, SWOB16 In FY 04, 0723, 0725, 0728, 0761 In FY 05, 0741	Active/Moderate	Ten miles of road was converted to ATV Trail to reduce overall watershed impacts to the 40 acres directly affected by the road prism.	Relocated equestrian camping facilities to eliminate riparian impacts to Jennie Lake shoreline: 3 acres of cold-water lake habitat enhanced.		
Taylor-Lodgepole subwatershed	SWOB12, SWOB13, SWOB14, SWOB16, SWOB18, FROB04, FROB06	Active/Moderate	Eliminated one culvert that presented a barrier to fish passage in Hunter Creek. Restored access to 0.7 mile of stream habitat.			
Rabbit Creek subwatershed and Trapper-Trail subwatershed	In FY 04/05, SWOB03, SWOB12/13/14 SWOB14, SWOB16, SWOB18, FROB04/06 In FY 04/05, 0723, 0725, 0728, 0761	Active/Moderate	Decomm 43.9 miles of road and elim one culvert blocking fish passage in Rabbit Creek. Restored access to 0.4 mile of stream habitat. Road decomm = 120 acres back into production.	Approximately 114 miles of NFS road were decommissioned and removed from the Forest transportation system. In addition, about 87 miles of unauthorized roads were decommissioned.		

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Sagehen subwatershed	In FY 04, REOB05 SWOB03 SWOB16 SWOB18; 1608,1632,1640 In FY 05, TROB01	Active/Low	In-seeding of disturbed areas on Sagehen ATV trail associated with new construction and decommissioning of 4 miles of trail.	Completed 201 acres of timber stand improvement to move vegetation toward desired conditions.		
Two Bit Roaring subwatershed	In FY 04, SWOB03 SWOB16 SWOB18; 1929, 1930, 1932, 1953 In FY 05, TROB01 In FY 07, FMOB02 FMOB04 FMOB05	Active/High	Rehabilitation of user developed recreational fishing access trails to South Fork Salmon River 19 acres.	Completed reforestation on 297 acres that burned during the 2003 South Fork Salmon River wildfire.		Completed 41 acres of prescribed burning. Cascade Complex BAER: aerial straw mulching; removed/replace culverts and improved drainage on authorized roads to address potential increase in post-fire runoff and erosion.
Riordan Creek	SWOB03, SWOB05, SWOB13, SWOB16, SWOB18, SWOB19	Active/High				Cascade Complex BAER: approx 1,400 acres aerial straw mulching.
Upper Willow -SFBR subbasin Lower Willow -SFBR subbasin	SWOB16 REOB05 0144	Active/Moderate	Erosion/sedimentation control 2.5 miles/10 acres of new ATV trails.			Installed two bridges on Flat Cr, two culverts in intermittent streams, one culvert in Pole Creek to improve stream crossings in Danskin Trails area. Also rehabbed old Danskin Boat Launch, including areas of user-created road.

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Black Warrior	SWOB03, SWOB16, REOB01	Active/Moderate		Rerouted ATV trail to reduce sediment delivery to 2.3 miles of bull trout spawning/rearing habitat, with partner assistance.	Rerouted ATV trail to reduce sediment delivery to 3 miles of bull trout spawning /rearing habitat, with partner assistance.	Black Warrior ATV trail reconstruction reduced sediment delivery to 2.0 miles of Black Warrior Creek.
Swanholm-Hot	SWOB03, SWOB16, SWOB18, TROB01	Active/Moderate		Completed reforestation on 468 acres burned during the 2003 Hot Creek wildfire.		
Bald Mtn - Eagle	SWOB03, SWOB16 TROB01	Passive/High		Reforestation on 1,248 acres burned during the 2003 Hot Creek fire.		
Warm Lake Creek	In FY 05, SWOB03, SWOB16 TROB01 In FY 05-07, FMOB02 FMOB04 FMOB05	Active/High		Completed reforestation on 283 acres burned during the 2003 South Fork Salmon River fire. Completed 156 acres of mechanical fuels treatment; 143 acres of prescribed fire.	Completed 65 acres of mechanical fuels treatment. Completed 46 acres of prescribed burning. Summit Lake BAER: aerial wood straw mulching	Completed 101 acres of mechanical fuels treatment., 183 acres of prescribed burning. Cascade Complex BAER: aerial straw mulching; removed/replaced culverts and improved drainage on authorized roads to address potential increase in post-fire runoff and erosion.
Smith-Dunnigan	TROB01	Active/Moderate		Completed 131 acres of timber stand improvement (TSI) to move veg toward desired conditions.		
Lower Fall	In FY 05, TROB01 In FY 06, FMOB02 FMOB04 FMOB05	Active/Low		Completed 138 acres of TSI to move veg toward desired conditions.	Completed 333 acres of mechanical fuels treatment. Completed 50 acres of prescribed burning.	Completed 640 acres of prescribed burning.

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Feather River	TROB01 FMOB04 FMOB05	Active/Moderate		Completed 350 acres of TSI to move veg toward desired conditions.		Completed 5 acres of mechanical fuels treatment.
Hungarian-Beaver	TROB01	Active/Moderate		Completed 112 acres of TSI to move veg toward desired conditions.		
Big Five-Pool	TROB01	Active/Moderate		Completed 145 acres of TSI to move veg toward desired conditions.		
Browns-Mink	TROB01	Active/Moderate		Completed 399 acres of TSI to move veg toward desired conditions.		
Joe Daley-James	In FY 05, TROB01 In FY 05-06, FMOB04 FMOB05 In FY 06, SWOB03, SWOB16, MIOB01, MIOB08, 0518, 0546, 0547,	Active/Moderate		Completed 341 acres of TSI to move veg toward desired conditions. Completed 794 acres of mechanical fuels treatment.	Completed 20 acres of mechanical fuels treatment. Monarch Mill Site hazardous tailings removal and streambank reconstruction - reduced sediment delivery and heavy metal contamination to 1.5 miles of stream.	Monarch Mill site riparian planting (0.5 miles MF Boise River)
Pine	In FY 05, TROB01 In FY 06, SWOB03, SWOB16, REOB01 0413, 0429	Active/Low		Completed 428 acres of TSI to move veg toward desired conditions.	Relocated or closed dispersed recreation sites along lower Grimes Creek to reduce sediment deliver to 2.0 miles of stream.	Relocated or closed dispersed recreation sites along lower Grimes Creek to reduce sediment deliver to 3.0 miles of stream.
Macks Creek	In FY 05, TROB01 In FY 06, SWOB12/13, SWOB14, SWOB16, SWOB18	Active/Moderate		Completed 255 acres of TSI to move veg toward desired conditions.	Removed nine culverts from an abandoned road, restoring AOP to 7.0 miles of habitat in Macks Creek,	

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Lower Granite	In FY 05, TROB01 In FY 05-07, FMOB02 FMOB04 FMOB05	Active/Low		Completed 923 acres of TSI to move veg toward desired conditions, 141 acres prescribed burning; 65 acres mechanical fuels treatment.	Completed 754 acres mechanical fuels treatment. Completed 420 acres prescribed burning.	Completed 50 acres mechanical fuels treatment. Completed 101 acres prescribed burning.
Gregory-Johnny	In FY 05, TROB01 In FY 05-06, FMOB02/04	Active/Moderate		Completed 502 acres of TSI to move veg toward desired conditions, Completed 824 acres of prescribed burning.	Completed 300 acres of prescribed burning.	Completed 133 acres of prescribed burning.
Lower Elk	In FY 05, TROB01 FMOB04 FMOB05 In FY 05-07, FMOB02 FMOB04	Active/Moderate		Completed 539 acres of TSI to move veg toward desired conditions, 20 acres mech fuels treatment, 389 acres prescribed burning.	Completed 236 acres of prescribed burning.	Completed 541 acres of prescribed burning.
Granite-Illinois	TROB01	Active/Moderate		Completed 95 acres of TSI to move veg toward desired conditions.		Completed 175 acres of mechanical fuels treatment.
Fawn-Alpha	TROB01	Active/Low		Completed 134 acres of TSI to move veg toward desired conditions.		
Upper Big Creek	TROB01	Active/Low		Completed 160 acres of TSI to move veg toward desired conditions.		
Wolf	TROB01	Active/Moderate		Completed 101 acres of TSI to move veg toward desired conditions.		
Rock Creek	In FY 05, TROB01 In FY06, SWOB03, SWOB16/18, FROB04/06 FROB12 1027	Active/Low		Completed 361 acres of TSI to move veg toward desired conditions.	Decommissioned 3.1 miles of 594C Road and approximately 5 miles of unclassified roads - reduced sediment delivery to 1.0 mile of stream.	

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Danskin-Poorman	In FY 05, TROB01 In FY 06, FMOB02 FMOB04	Active/Moderate		Completed 242 acres of TSI to move veg toward desired conditions.	Completed 700 acres of prescribed fire.	
Alder Creek	TROB01 FMOB02 FMOB04	Active/Low		Completed 586 acres of TSI to move veg toward desired conditions. Completed 791 acres prescribed burning.		Completed 68 acres of mechanical fuels treatment.
Kennedy	TROB01 FMOB02 FMOB04	Passive/Low		Completed 271 acres of TSI to move veg toward desired conditions.		Completed 58 acres mechanical thinning to move veg toward desired conditions.
Cottonwood-Pine	TROB01	Active/Low		Completed 222 acres of TSI to move veg toward desired conditions.		
Second Fork	TROB01 SWOB12 SWOB13 SWOB14 SWOB16 SWOB18 TEOB03 TEOB09 TEOB10 In FY 07, FMOB02 FMOB04	Active/Moderate		Completed 169 acres of TSI to move veg toward desired conditions. Awarded contract to replace barrier culvert on Renwyck Creek (bull trout habitat) to restore fish passage to 4 miles of stream habitat.	Implemented contract to replace barrier culvert on Renwyck Creek (bull trout habitat) to restore fish passage to 4 miles of stream habitat.	Riparian planting at Renwyck Creek AOP site – 0.25 stream miles enhanced. Completed 420 acres mechanical thinning to move veg toward desired conditions. Decomm 1.0 mile of authorized road as part of Upper Muir project.

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
High Valley	In FY 05, TROB01 In FY 06, SWOB03, 1610, 1632	Active/Low		Completed 192 acres of TSI to move veg toward desired conditions.	Installed exclosure fence around approx 18 acres of Tripod Meadows to reduce impacts from dispersed recreation and re-established failed road closure berms on NFS road 626O. Closed 3 user-developed campsites and approx 1 mile of user-developed ATV trails near Sagehen Reservoir for 4 acres of watershed improve.	Dispersed Recreation management in Tripod Meadows reduced sediment and riparian impacts to 1.0 mile of Tripod Creek.
Tripod-Murray	TROB01	Active/Moderate		Completed 340 acres of TSI to move veg toward desired conditions.		
Bannock-Thomas	In FY 05, FMOB02 FMOB04 In FY 06, SWOB03, SWOB16, SWOB19, MIOB01,0866	Active/Moderate		Completed 113 acres of prescribed fire.	Implemented Phase 1 of Mores Creek floodplain restoration – improved 0.6 miles of stream habitat.	Mechanical streambank restoration of about 1 mile of stream, including riparian planting on 1 mile of Mores Creek..
Kirkham	In FY 05-06, FMOB02/04 In FY 05, SWOB12/13/16 In FY 06, FMOB04/05	Active/Moderate		Completed 204 acres of Rx fire. Removed diversion to restore connectivity to 3 miles of stream.	Completed 72 acres of prescribed fire, 62 acres of mechanical fuels treatment.	
North Fork Lime Creek	FMOB02 FMOB04	Active/Low		Completed 2668 acres of prescribed fire.		

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Pine	FMOB02 FMOB04	Active/Low		Completed 1080 acres of prescribed fire.		
Miller-Hulls Gulch	SWOB16 REOB01	Active/High		Decommissioned 6 miles of user-created trail, with partner assistance.		
Pierce-Mennecke	SWOB03 SWOB16 SWOB18 FROB04/06	Active/Moderate		Decommissioned 1 mile of road.		
Anderson Ranch Reservoir	0123 SWGO03 BTGO06 FY 2007: SWOB03, SWOB16/18	Active/Moderate		Restored 5 acres of wetland habitat.		Rehabbed user-created roads around Anderson Ranch Reservoir.
Clear Creek (170501120402)	FMOB04 FMOB05	Active/Low			Completed 1331 acres of mechanical fuels treatment.	Completed 1021 acres of prescribed burning, 249 acres of mechanical fuels treatment.
Dog-Nichols	FMOB04 FMOB05	Active/Moderate			Completed 50 acres of mechanical fuels treatment.	Completed 93 acres of mechanical fuels treatment, 43 acres of prescribed burning..
Lower Lime	FMOB02 FMOB04	Active/Moderate			Completed 2100 acres of prescribed burning.	Completed 2350 acres of prescribed burning.
Minneha-Wildcat	FMOB02 FMOB04	Active/Moderate			Completed 93 acres of prescribed burning.	
Pyle	FMOB04 FMOB05	Active/Moderate			Completed 372 acres of mechanical fuels treatment.	
Shirts	FMOB04 FMOB05	Active/Low			Completed 66 acres of mechanical fuels treatment.	
Silver Creek	FMOB02 FMOB04	Active/High			Completed 1273 acres of prescribed burning.	
Upper Granite	FMOB04 FMOB05	Active/Low			Completed 233 acres of mech fuels treatment.	Completed 305 acres of mech fuels treatment.
Warm Springs	FMOB02 FMOB04	Active/Low			Completed 67 acres of prescribed burning.	

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Banks	SWOB03, SWOB16, SWOB18	Active/Moderate			Parking Area at Banks River Access (across HWY 55 from Banks Store) was closed to public access with barricades and seeded.	
Lightning Creek	SWOB03, SWOB16 1417, 1418	Passive/High			Ripped and seeded and installed water bars on approximately 1.5 miles of user-developed ATV trail within the Airline Veg Mgmt project area.	
Tyndall-Stolle	In FY 06, SWOB16, SWOB18 1929, 1930, 1932 In FY 07, FMOB02/04/05	Active/High			Stabilized two areas of erosion and instability on the Kline Mtn. Road.	Completed 260 acres of prescribed burning. Cascade Complex BAER: aerial straw mulching; removed/replaced culverts and improved drainage on authorized roads to address potential increase in post-fire runoff and erosion.
Sixmile	SWOB03, SWOB16/18 FROB04, FROB06, FROB12, 1458	Active/High				Sixshooter road decommissioning reduced sediment delivery to 7.4 miles of Sixmile Creek. Decomm 3.4 miles of authorized road and removed 13.0 miles of inaccessible authorized road from transportation system.

Subwatershed	FW or MA Objective Addressed	WARS Restoration Strategy/Priority	Summary of FY 2004 Work Accomplished	Summary of FY 2005 Work Accomplished	Summary of FY 2006 Work Accomplished	Summary of FY 2007 Work Accomplished
Bear-Camp	SWOB12/13/14 SWOB16, SWOB18, SWOB19, TEOB03, TEOB09/10, 1029	Active/Moderate				Awarded contract to replace barrier culvert on Wapiti Creek (bull trout habitat) to restore fish passage to 3.6 miles of stream habitat.
Big Eddy	FMOB02 FMOB04	Active/Moderate				Completed 11 acres of mech fuels treatment.
Lightning Creek	FMOB02 FMOB04	Passive/High				Completed 609 acres of mech fuels treatment.
Rocky Canyon	FMOB02 FMOB04	Active/High				Completed 30 acres of mech fuels treatment.
Lewis-Clay	FMOB02 FMOB04	Active/Low				Completed 84 acres of mech fuels treatment.
Cottonwood Creek	FMOB02 FMOB04	Active/Low				Completed 922 acres of prescribed burning, 129 acres of mech fuels treatment.
Lambing-Trail	FMOB02 FMOB04	Active/Moderate				Completed 173 acres of mech fuels treatment.
Lower Rattlesnake	FMOB02 FMOB04	Active/Moderate				Completed 180 acres of mech fuels treatment.
Upper Rattlesnake	FMOB02 FMOB04	Active/Moderate				Completed 221 acres of mech fuels treatment.
Abbot-Shake	FMOB02 FMOB04	Active/Moderate				Completed 41 acres of mech fuels treatment.
Lower Trinity	FMOB02 FMOB04	Active/Low				Completed 3 acres of mech fuels treatment.
Wagontown-Schoolhouse	FMOB02 FMOB04	Active/Moderate				Completed 38 acres of mech fuels treatment.
Grouse Creek	FMOB02 FMOB04	Active/Low				Completed 19 acres of mech fuels treatment.

II-3: Summary of Monitoring Elements Found in Table IV-2 of the Forest Plan with Two and Three-Year Reporting Requirements

In earlier years' Monitoring and Evaluation Reports, the Forest reported on those elements with two- or three-year reporting requirements. The discussion of those elements is summarized below to provide continuity with previous years' reports.

Habitat for Terrestrial Threatened, Endangered, Proposed or Candidate (TEPC) Species, Both Plant and Animal

Monitoring Question: Are management actions providing for, or moving toward, the extent of vegetation components necessary to meet the needs of TEPC species? (two-year reporting)

Work Completed and Summary of Findings: As in FY 2005 and 2007, data collection and analysis for this monitoring element was not completed in FY 2009, due to competing work priorities during the field season.

Aquatic Ecosystems

Monitoring Question: Are management actions and Forest Plan direction effectively maintaining Watershed Condition Indicators (WCIs) when currently in the range of desired conditions, and restoring WCIs when outside the range of desired conditions, over multiple scales? (two-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or 2009 has been done. There have been four years of IIT effectiveness monitoring since the Forest Plan was signed in 2003. The IIT effectiveness monitoring effort sampled 17 [managed] integrator reaches and 1 [reference] integrator reach in 2004, 10 [managed] integrator reaches and 4 [reference] integrator reaches in 2005, 29 [managed] integrator reaches in 2006, and 15 [managed] integrator reaches and 1 [reference] integrator reaches in 2007. A total of 92 integrator reaches have been sampled on the Boise NF since the IIT effectiveness monitoring effort began in 2001. This monitoring effort uses a 5-year rotating panel design. The first year of repeat measurements on integrator reaches was 2006. A total of 27 integrator reaches had repeat measurements by the end of 2007. Repeat measurements will provide for more accurate identification and characterization of areas where WCIs are being maintained or restored.

The IIT effectiveness monitoring data is particularly useful in addressing the aquatic ecosystems monitoring question because the study design provides for comparison between managed and reference (unmanaged) reaches and because the sample units are integrator reaches, which theoretically manifest effects occurring at the subwatershed scale.

The functional condition of several WCIs can be assessed from IIT effectiveness monitoring data (e.g., streambank condition, sediment, large woody debris, temperature, and pool frequency). Table 13 summarizes the results from the 31 IIT integrator reaches sampled in 2004-2005 for these 5 WCIs, while Table 14 summarizes the results from those reaches sampled in 2006-2007.

Table 13. Status of 5 WCIs from 31 IIT Integrator Reaches (Managed and Reference) Monitored on the Boise NF in 2004-2005

WCI	Within Desired Conditions		Outside Desired Conditions	
	Managed	Reference	Managed	Reference
Streambank Condition	23 (92%)	6 (100%)	2 (8%)	0
Sediment	6 (24%)	1 (17%)	19 (76%)	5 (83%)
Large Woody Debris	17 (68%)	3 (50%)	8 (32%)	3 (50%)
Temperature	9 (36%)	2 (33%)	16 (64%)	4 (66%)
Pool Frequency	16 (64%)	3 (50%)	9 (32%)	3 (50%)

Table 14. Status of 5 WCIs from 45 IIT Integrator Reaches (Managed and Reference) Monitored on the Boise NF in 2006-2007

WCI	Within Desired Conditions		Outside Desired Conditions	
	Managed	Reference	Managed	Reference
Streambank Condition	36 (82%)	1 (100%)	8 (18%)	0
Sediment	17 (39%)	0	27 (61%)	1 (100%)
Large Woody Debris	26 (59%)	1 (100%)	18 (41%)	0
Temperature	6 (15%)	0	34 (85%)	0
Pool Frequency	44 (100%)	1 (100%)	0	0

The data presented in Table 13 indicate that, for the identified WCIs, the proportion of managed integrator reaches within and outside desired conditions is similar to (or more positive than) the proportion of reference (unmanaged) reaches within/outside desired conditions. Consequently, the data presented in Table 13 suggest than specified WCIs are being maintained in a similar condition in both managed and reference watersheds. In Table 14, comparison of conditions in managed and reference watersheds in 2006-2007 was not possible, because only one reference reach was sampled.

Certain management activities implemented in 2004-2006 restored WCIs that were outside the range of desired conditions:

- The Bear-Hunter road decommissioning project moved the road density WCI in the Bear River subwatershed from "functioning at unacceptable risk" to "functioning at risk," and restored the physical barriers WCI to "functioning appropriately."
- The Cub-Casner Creek culvert replacement project restored the physical barriers WCI from "functioning at unacceptable risk" to "functioning appropriately" in the Bear Valley subwatershed.
- The Wilson-Rammage Creek culvert replacement project restored the physical barriers WCI from "functioning at unacceptable risk" to "functioning appropriately" in the Third Fork subwatershed.
- The Roaring River culvert replacement project restored the physical barriers WCI from "functioning at unacceptable risk" to "functioning appropriately" in the Roaring River subwatershed.

Water Quality and Beneficial Use Status

Monitoring Question: Are management actions maintaining or restoring water quality to fully support beneficial uses, and native and desired non-native fish species and their habitats over multiple scales? (two-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or 2009 has been done. This question essentially has two parts. The first asks how well management actions and direction are maintaining or restoring water quality to fully support beneficial uses, and native and desired non-native fish species and their habitats. The second part asks what the trend of water quality is over time in relation to our management activities. The evaluation of management actions and direction is described above in the WCIs question and response. Therefore, only the evaluation of water quality trend and associated beneficial uses will be discussed below.

The Boise NF monitors water quality several ways. First, trend is determined using the PACFISH, INFISH Biological Opinion (PIBO) monitoring approach. As discussed previous, PIBO was selected because monitoring objectives are similar to the Forests and PIBO already has an extensive network of monitoring locations on the Boise NF, and the other Forests in the Ecogroup, to help determine trend.

PIBO data can assist in determining whether streams are meeting some of the criteria that protect beneficial uses. For example, salmonids spawning and cold water biota are sub-classifications of aquatic life beneficial use. Salmonids spawning and cold water biota are protected by criteria, for which the state of Idaho has two kinds, narrative and numeric. Numeric criteria are those criteria which protects when specific, quantifiable amounts of pollutants (water temperature, turbidity, etc.), and non pollutants (dissolved oxygen, pH) exceed numeric thresholds (i.e. maximum daily water temperature averages no greater than 66°F). PIBO collects information on a few of these attributes such as water temperature and inchannel sediment that can be used to gauge whether water quality changes are occurring.

As of 2007, several integrator reaches had been sampled across the Forest (refer to the WCI monitoring question above for more discussion). This sample size will likely allow for the detection of a 10 – 15 percent change in water temperature and inchannel sediment over the life of the Forest Plan (refer to "Answering SWIE LRMP Soil Water Riparian and Aquatic Monitoring Elements" review for a more detailed discussion on statistical considerations for estimating sample sizes).

Second, each year the Forest deploys temperature data loggers from mid-July and mid-September to establish baseline conditions within bull trout habitat patches. As of 2007, temperature loggers were deployed in several bull trout patches. All bull trout patches across the Forest will be sampled several times over the life of the Forest Plan. Consequently, the Forest will have temperature trend data for hundreds of sites to determine if maximum daily water temperatures exceed numeric criteria that protect salmonids spawning and cold water subclassification of the aquatic life beneficial use.

Finally, the Forest works closely each year with the Idaho Department of Environmental Quality (DEQ). IDEQ's Surface Water Program routinely monitors Idaho's waters through the Beneficial Use Reconnaissance Program (BURP) and assesses water quality using methods described in their Water Body Assessment Guidance (WBAG). Each year the BURP program sends crews to collect water temperature data, biological samples (e.g., fish, bacteria), chemical measures (e.g.,

specific conductivity, the ability of water to pass an electrical current), and habitat data from Idaho's surface water. The collected information is used to determine whether beneficial uses are being supported in Idaho's streams, rivers, and lakes.

Following completion of the 2008 PIBO monitoring and data collection, several locations will have been resampled, thus greatly assisting in determining trends in water quality and aquatic habitat.

Using BURP and other data and the methods described in the (WBAG), DEQ determines if each of Idaho's water bodies meets water quality standards and supports beneficial uses. DEQ submits an "Integrated Report" to EPA every two years that identifies and prioritizes the state's water quality problems. This report is based on the data collected through DEQ's monitoring programs and serves as a guide for developing and implementing plans to protect beneficial uses. This report provides an overall assessment to the Forest to gauge how well water quality and beneficial use are being maintained on water bodies within Forest boundaries.

Idaho's 2002 integrated report was completed by DEQ in April 2004 and was submitted to EPA for approval in July 2004. The final report was approved by EPA in December 2005. Based upon the findings in this report the Forest has 84 "assessment units" (AUs) that are not supporting a beneficial use because they are impaired by one or more pollutants. AUs are groups of similar streams that have similar land use practices, ownership, or land management. The methodology used to describe AUs can be found in DEQ's WBAG II.

As noted in the FY 2005 Boise National Forest Plan Monitoring report, the numbers of impaired water bodies in the 1998 and 2002 integrated reports cannot be compared because DEQ has changed the way it tracks water quality from stream segments to AUs. It was hoped that a better comparison could have been made when DEQ issued its 2004/2006 integrated report because each report will use the same AUs. To date DEQ has not issued any further integrated report. The 2008 draft 305b report is out for public response and will likely be finalized and approved by EPA in the next few months.

During 2008 the Boise National Forest was expected to comprehensively update all the subwatershed baselines and associated data. Therefore a later Forest Plan Monitoring Report should be able to use the comparison of the 2002 and 2008 integrated reports, the comparison of results from the PIBO re-sampled streams as well as the comparison of the 2002 and 2008 DEQ 305b reports to assist in answering this monitoring question.

Disclosure of Management Actions

Monitoring Question: Are proposed actions and associated effects being adequately disclosed in NEPA documents? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or 2009 has been done. In Section II-4 of this Report, as in the earlier reports, the results of annual project-level monitoring is summarized. The purpose of this annual project monitoring, in part, is to determine if actions implementing the Forest Plan and their associated effects are consistent with those described in the related NEPA documents.

Review of these yearly summaries, and more detailed documentation, of these annual project reviews indicate that several actions have been implemented as described in the associated NEPA

document, and impacts of the actions as observed in the field appear to fall within the range of effects described in the NEPA document.

However, monitoring has also identified situations where project design features were not implemented as described in the NEPA document, which then resulted in effects that were beyond those disclosed. For example, monitoring of the Paradise Valley Hazardous Fuels Reduction and Tollgate Hazardous Fuels Reduction projects described in Section II-3 found that project design features were not consistently applied to or developed for some riparian conservation areas (RCAs). As a result, the effects of treatments to streambank stability, large woody debris recruitment, and sediment filtering were beyond those disclosed in the NEPA document. Conversely, in the Silver Creek Integrated Resource Project, monitoring found that actions implemented to date were designed as planned and resulting effects appear to be less than disclosed in the NEPA document. In some cases, benefits of treatments were found to be more dramatic than disclosed in the NEPA document.

To correct improper design feature implementation on future projects, it will be important that NEPA design teams and implementation teams follow a more detailed review protocol of the key design features.

Tribal Participation with the Forest

Monitoring Question: Are current processes meeting the needs for consultation? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or 2009 has been done. As discussed under Objective TROB01 earlier in this report, the Forest has developed consultation protocols with the Shoshone-Paiute and Nez Perce Tribes that both parties have indicated meets their consultation needs. The Forest believes these protocols have, and will continue, to meet its Objectives for Tribal Consultation identified earlier in this report.

As discussed under Objective TROB01, the Forest Service and Shoshone-Bannock Tribe initiated work on a consultation protocol in 2005 and continued work on this protocol in 2006. However, consultation needs and objectives are being addressed through interim processes described earlier in this report. Until a protocol is completed, the Forest Service and Tribe continue to communicate through these interim processes to assure Forest Service officials understand the potential implication of a decision to tribal interests and rights, and as needed, provide necessary protection or mitigation of adverse effects to tribal resources, culture, religion and economy from federal undertakings to "resolve adverse effects."

Coordination with Tribes

Monitoring Question: Are traditional cultural resources and special interest areas being considered and maintained? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or 2009 has been done. National Register Bulletin 38 "Guidelines for Evaluating and Documenting Traditional Cultural Properties" provides the framework for the Forest Service to address traditional cultural resources, which is generally inclusive of special interest areas to each of the three Tribes whose rights or interests may be affected by actions on the Boise NF.

A wide range of historic property types, reflecting the diversity of the nation's history and culture, are recognized. This includes buildings, structures, and sites, as well as groups of buildings, structures or sites forming historic districts and landscapes. There are many definitions of the word "culture," but in the National Register programs the word is understood to mean the traditions, beliefs, practices, lifeways, arts, crafts, and social institutions of any community, be it a Native American Tribe, a local ethnic group, or the people of the nation as a whole.

One kind of cultural significance a property may possess is traditional cultural significance. "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices.

Unlike tangible resource properties that are more easily recognized, traditional cultural properties are often intangible and difficult to recognize. The successful tribal consultation processes that the Forest has with each of the three Tribes affected by Forest activities assures that the Forest sufficiently understands and considers the effects of their actions on traditional cultural properties and areas of special interest. Through consultation, adverse affects to these properties have been avoided, mitigated or otherwise resolved.

State and Local Government Participation with the Forest

Monitoring Question: Are current processes such as commission appearances, field reviews, etc., meeting coordination needs? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or 2009 has been done. The Forest coordinates with state and local agencies extensively, and an "open door" policy between elected officials, agency heads and resource specialists, and their Forest counterparts, is strongly encouraged and welcomed. Based on the level of coordination and direct and/or anecdotal feedback, current processes are meeting coordination needs. The Forest's coordination with state and local agencies generally falls within three areas of responsibility (regulatory, legal and/or policy commitments; partnerships; ongoing operational coordination), although there is considerable overlap and flexibility between these areas as agencies actively strive to develop and maintain productive working relationships.

Recreation Use Conflicts

Monitoring Question: Are conflicts rising between recreational uses? (three-year reporting)

Work Completed and Summary of Findings: The results for this element will be documented in a later Monitoring and Evaluation Report, which will reflect the recent change in the reporting period from "every three years" to "every five years."

Dispersed Recreation Use and Distribution

Monitoring Question: What level of use is occurring in dispersed sites and what impacts are occurring to other resource values? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. The results for this element were to be

documented in the FY 2008 Monitoring and Evaluation Report, which would reflect the recent change in the reporting period from "every three years" to "every five years."

Actual Daily and Seasonal Use versus Use Capacity

Monitoring Question: What level of use is occurring in special use areas, including recreation sites (e.g., downhill ski areas)? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. The results for this element were to be documented in the FY 2008 Monitoring and Evaluation Report, which would reflect the recent change in the reporting period from "every three years" to "every five years."

Developed Site Use and Distribution, and Resource Impacts to Sites

Monitoring Question: What level of use is occurring in developed sites and what impacts are occurring to other resource values? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. The results for this element were to be documented in the FY 2008 Monitoring and Evaluation Report, which would reflect the recent change in the reporting period from "every three years" to "every five years."

Level of Trail Maintenance Relative to Trail Use

Monitoring Question: Are trails being maintained for anticipated levels of use? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. The results for this element were to be documented in the FY 2008 Monitoring and Evaluation Report, which would reflect the recent change in the reporting period from "every three years" to "every five years."

Potential Impacts to Visual Resources

Monitoring Question: Are Forest management actions being designed and implemented to meet Visual Quality Objectives (VQOs)? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. Projects with activities that had potential to affect the scenic environment were selected for monitoring, with emphasis on those projects with visually sensitive travelways or use areas as identified in Forest Plan management area direction. Projects with vegetation management activities such as mechanical vegetation manipulation (thinning and harvesting) and prescribed burning have the greatest potential to affect the scenic environment and consequently were targeted for monitoring. Five different projects were selected for monitoring (four vegetation/fuels management and one streambank restoration project). Field investigations from sensitive viewpoints were used to determine the magnitude and intensity of change. Digital imagery captured before and after conditions.

All vegetation management projects reviewed incorporated specific design and mitigation elements to reduce the visual contrast, as appropriate to the desired visual quality objective. In

reviewing the "after" conditions, it appears that the projects are meeting the desired visual objectives within the allowable time frames.

Several major vegetation management projects planned since the 2003 Forest Plan have yet to be implemented and monitored. These will need to be assessed via future monitoring to validate assumptions and the effectiveness of specific design features.

Stewardship of Historic Properties

Monitoring Question: Are historic properties being managed to standard? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. The results for this element were to be documented in the FY 2008 Monitoring and Evaluation Report, which would reflect the recent change in the reporting period from "every three years" to "every five years." This change corresponds to new criteria for reporting historic properties managed to standard.

Gathering Activities on the Forest

Monitoring Question: Are forest gathering activities resulting in resource depletion (i.e., mushrooms, bear grass, huckleberries)? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. No permits for forest gathering activities have been issued in the first three years since the Forest Plan was implemented. Although some minor, incidental gathering for personal use may be occurring, it is likely that forest gathering activities are not resulting in resource depletion.

Botanical Species of Concern, Watch Species and Sensitive Species

Monitoring Question: Are Forest management actions affecting known sensitive species or watch species habitats at the project level? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. In previous years, three projects in known occupied plant habitat were monitored to determine if mitigation measures were effective at avoiding impacts to plant populations. The projects were Gregory Fire Salvage (Idaho City RD), Hot Creek Reforestation I, II and III (Idaho City RD), and Landmark Mountain Pine Beetle Salvage (Cascade RD). In each case, no impact to the plant population(s) was noted.

Soil Productivity

Monitoring Question: Are management actions and Forest Plan direction effectively maintaining or restoring long-term soil productivity? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. Results from District NEPA review and project-specific evaluations help identify compliance with the Forest Plan standards for detrimental soil disturbance (SWST02) and total soil resource commitment (SWST03). The primary intent of these two standards is to maintain or restore soil productivity during

implementation of ground disturbing activities, mostly through project design features and mitigations.

Since FY 2004, several projects that can help indicate management activities' impact on soil productivity have been wholly or partially implemented. Vegetation treatments (i.e., commercial and non-commercial thinning, mechanical fuels treatment, and prescribed fire) were reviewed to evaluate if Forest Plan direction (specifically SWST02 and SWST03) is effectively maintaining or restoring soil productivity; these projects included Lime Creek Prescribed Fire (Mountain Home RD, Boise NF and Fairfield RD, Sawtooth NF), Ten-Mile Fuel Reduction (Idaho City RD), South Fork Salmon Fire Salvage (Cascade RD), and Five-Mile and Wapiti Thinning (Lowman RD). In general, review determined that Forest Plan direction is effectively maintaining or restoring soil productivity.

Another aspect of the Forest Plan direction is active restoration of lands with impaired soil productivity (either from land management activities or naturally occurring events). Several projects that help create conditions leading to the soil productivity of disturbed areas, including trail decommissioning, seeding and access restrictions, were undertaken.

A third category of actions that protect soil productivity is through management decisions that eliminate or prohibit certain activities. The 2005 Travel Management actions on the Forest prohibited cross-country summer off-highway vehicle (OHV) travel by motorized vehicles. Motorized OHV travel during summer seasons is restricted to designated roads and trails and existing routes. This restriction reduces the potential for detrimental soil disturbance from OHV riders developing new routes and the dispersed uses associated with these routes.

Distribution of Aquatic Ecosystems

Monitoring Question: Are management actions maintaining or restoring the distribution, abundance, and habitat quality of management indicator and TEPC species? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. A summary of population monitoring for bull trout undertaken on the Forest over the past three years is included earlier in the FY 2006 Monitoring and Evaluation Report. In general, this monitoring relies on the proportion of habitat patches that bull trout occupy within each subbasin through time, and the spatial pattern of occupied bull trout patches within each subbasin through time.

Data collected over the past three years were compared with data collected prior to 2004 to provide a preliminary indication of trend in bull trout distribution across the planning unit. The results are listed in Table 9. The results indicate an increase in distribution of bull trout over the last three years. Bull trout were probably present, but previously undetected, in many of the patches that were reclassified as occupied (stratum 1) in the last three years. However, data from a few of these reclassified patches indicates recently founded populations, based on the limited number of age classes detected. Table 9 also shows an increase in the number of unsuitable /inaccessible patches. These patches were reclassified as unsuitable/inaccessible based on recently acquired data that documented unfavorable existing conditions, such as high water temperature, natural barriers, and/or high brook trout abundance. Based on these presence /absence data, occupied bull trout spawning and early-rearing habitat on the Boise NF increased from approximately 238 to 275 stream miles from 2003-2006.

Bull trout were selected as an MIS because they have the most restrictive habitat requirements of all salmonids. Therefore results from the bull trout monitoring provide a reasonable surrogate for chinook salmon and steelhead trout, currently listed as Threatened species.

Landslide Prevention

Monitoring Question: Are management actions and Forest Plan direction effectively preventing management-induced landslides? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. In previous years, landslide prone (LSP) assessments from project level NEPA analyses were reviewed, focusing on vegetation treatment activities (commercial and non-commercial thinning, and prescribed fire). A total of 11 landslide prone assessments were reviewed.[35]

To date, no landslides have been identified or known to have occurred where management activities have been implemented (i.e., Whites Flat project (Mountain Home RD); South Fork fire salvage (Cascade RD), and Mesa timber sale (Emmett RD). It may be inferred that project design features or mitigations that minimized the level of disturbance or eliminated treatments adjacent to or within high and moderate LSP areas have been effective at preventing or reducing management-caused landslides. However, this conclusion is founded, to a certain extent, on the fact that locations where management activities have been implemented have experienced normal weather conditions (average precipitation and snowmelt runoff), and no severe weather or storm events have influenced the occurrence of landslides in these areas.

Noxious Weed Prevention

Monitoring Question: Are Forest Plan standards and guides effect in preventing establishment of new noxious weed infestations? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. In previous years, based on field surveys, NEPA project analyses and reviews, and other methods, very few new acres of noxious weed infestation were reported in 2006. However, this low total may be a function of inventory and reporting procedures, and not indicative of true infestation numbers, as it is likely that new infestations are occurring, especially along transportation corridors and in recreation areas.

Typically, new infestations are identified by County and Forest personnel during weed treatment. For example, several rush skeletonweed plants were found in the upper headwaters of Bear Valley Creek at the end of a spur road within the BPA mine reclamation project. This was the first time rush skeletonweed has been located in the Bear Valley basin. Efforts were immediately undertaken to eradicate this infestation while it was very small and localized.

The Forest is beginning development of early detection & rapid response plans. This program places additional emphasis on detecting and eradicating new infestations in previously weed-free

[35] White Flat (Mtn Home RD); Star Ranch (Idaho City RD); South Fork Fire Salvage, Upper Middle Fork Payette TS, Kline Mountain Hazardous Fuels Reduction (Cascade RD); Rock Creek EA, Oxbow Prescribed Burn, Wapiti Blue Stewardship (Lowman RD); and Mesa Timber Sale, Muir Timber Sale, Hollywood Timber Sale (Emmett RD).

areas such as the Bear Valley basin described above. Plans will be developed in 2007 and implemented in 2008. The Idaho City RD is participating in this type of approach in the Sawtooth Wilderness in cooperation with the Sawtooth National Recreation Area. This management emphasis is consistent with changes in recent changes in State of Idaho noxious weed management Regulations.

Over the last decade, the Forest has observed new infestations primarily of rush skeletonweed, Dalmatian toadflax, spotted knapweed, and whitetop. Because of the large infestations and seed sources within and adjacent to the Forest for these species, it is highly likely that we will continue to observe their spread along roads, trails and waterways on the Forest.

In 2006, special emphasis was placed on identifying potential new populations of five weed species on the Forest (dyers woad, Japanese knotweed, yellow starthistle, purple loosestrife, and Eurasian watermilfoil). Dyers woad, Japanese knotweed, and purple loosestrife have been found on the Forest in previous years and eradicated. Yellow starthistle has been reported near the Forest on private lands. Eurasian water milfoil is present on the Forest in a few locations. The Forest and CWMAs are working to prevent establishment of new infestations of these species and monitoring eradicated infestations to ensure that any plants developing from latent seeds are immediately eradicated.

Noxious Weed Containment

Monitoring Question: Are Forest management strategies effective in preventing further expansion of established noxious weed populations? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. In 2006, the Forest began the process of digitizing weed infestations and storing digital maps and associated records in the NRIS Terra Invasives Database. This should provide the Forest with more accurate identification of invasive plant infestations, and better data for reviewing and comparing changes in infestations in subsequent years. This project will be completed during 2007.

Projects developed and executed at the District level included analysis of existing populations and potential for spread of noxious weeds. Review of several of these project level NEPA analyses indicate that the project level analysis, mitigation and weed management activities are effective in preventing the introduction of new non-native invasive plant infestations and in controlling the spread of these species as a result of project activities. Projects reviewed in 2006 include the Mesa project (Emmett RD) and the Lake Creek Aspen Restoration Project (Mountain Home RD).

Noxious Weed Control and Eradication

Monitoring Question: Are Forest management strategies effective in controlling or eradicating targeted populations of noxious weeds? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. As noted above, the Forest in 2006 began the process of digitizing weed infestations and storing digital maps and associated records in the NRIS Terra Invasives Database. This should provide the Forest with more accurate identification of invasive plant infestations, and better data for reviewing and comparing changes in infestations in subsequent years. This project will be completed during 2007. How these acres increase or decrease over the 10-15 year time period of the 2003 Plan will help indicate how successful the

prevention and control methods have been, and how related Forest Plan goals have been achieved.

Forage Utilization Levels

Monitoring Question: Are established utilization levels providing for desired ground cover, soil stability, plant vigor and composition? (three-year reporting)

Work Completed and Summary of Findings: As described in section I.3, no additional reporting for FY 2008 or FY 2009 has been done. Based on data from within-season grazing use "triggers" and monitoring from year-end grazing use, livestock grazing on the Forest in 2006 generally met the use standards identified in the Forest Plan (Forest Plan, standard RAST-01, p. III-45). Approximately 81,500 acres on 25 grazing allotments were measured to standard. Grazing use levels exceeded the Forest Plan standards on portions of seven pastures. To address this exceedance, District Rangers will modify management for 2007 during development of Annual Operating Instructions for these allotments, as appropriate.

II-4: Project Level Monitoring that Contributes to Forest Plan Monitoring Requirements

Project-level monitoring is designed to evaluate implementation and effectiveness of Forest Plan direction pertaining to achievement of resource objectives, proper use and effectiveness of management practices, assess impacts on site-specific resources of concern, and gather information affecting resource baseline conditions to assist in maintaining up-to-date baselines.

As part of the monitoring efforts, project level monitoring is scheduled each year on all Districts on the Boise NF. Field monitoring was designed to respond to all applicable **required** Forest Plan monitoring questions:

1) How well did the project meet its objectives?
2) Were the effects to other resources within the expected range?
3) Was the project design and mitigation effective?
4) Are actions proposed and associated effects being adequately disclosed in NEPA documents?
5) Have prescriptions, projects, and activities been implemented as designed and in compliance with the Forest Plan?

In addition, the field reviews answered some of the **optional** Forest Plan monitoring questions, as appropriate:

- Are management activities changing the ROS settings?
- Are Forest management activities adequately designed (including delineation of RCA's) to maintain or improve riparian functions and ecological processes important to furthering Forest Plan goals and objectives?
- Are management actions providing for or moving toward the extent of vegetation components necessary to meet the needs of MIS and TEPC species?
- Are management actions and forest plan direction effectively maintaining or restoring long-term soil productivity?

- Are snags and coarse woody debris at, or moving toward, desired conditions as described in appendix A of the Forest Plan?
- Have restoration and conservation activities been focused in priority watersheds identified by the WARS process?
- Are management actions and forest plan direction effectively maintaining WCIs when currently in the range of desired conditions, and restoring WCIs when outside the range of desired conditions over multiple spatial scales?
- Are consulting agencies part of the process, and are concerns being raised about implementation of the Forest Plan?
- Are Forest management actions being designed and implemented to meet Visual Quality Objectives (VQOs)?
- Are historic properties being affected by project activities?
- Are Forest management actions affecting known sensitive species or watch species habitats at the project level?
- Are Forest management strategies effective in preventing, controlling or eradicating targeted populations of noxious weeds?
- Are established utilization levels (livestock) providing for desired ground cover, soil stability, plant vigor and composition?

No project monitoring reviews were conducted during FY 2008 and 2009. The following projects were monitored during the 2007 field season, and each project review is summarized below. Representatives from NOAA Fisheries participated in two of these four reviews (Idaho City and Lowman RDs). Complete project reviews are available from the Boise NF.

Mountain Home RD:

No project review was conducted on the Mountain Home RD in FY2007.

Idaho City RD:

- **Gregory Fire Salvage**
  The project's objectives were to capture the value of fire-killed and imminently dead timber no necessary to maintain or provide for soil productivity and wildlife snag-dependent species, and to reforest areas not anticipated to naturally regenerate to suitable stocking levels. Following salvage, a snag survey found that objectives for Coarse Woody Debris (CWD), measured in tons/acre, and snags, measured in number of trees per acre had been met, but that CWD on the ground was lacking, a result of past logging and the Gregory Wildfire that consumed most of the downed material. The Environmental Assessment adequately anticipated the project's effects, and the design features and mitigation measures were adequate. The project complies with the Forest Plan.

Cascade RD:

- **Tamarack Backcountry Skiing:**
  The project's objective was to meet Tamarack resort's special use application request for backcountry skiing while continuing snowmobile use in the popular play areas of West Mountain. The project's

Environmental Assessment (EA) adequately anticipated the effects of the proposal, which were mostly benign. Overall, the design and mitigation measures have been effective; the design feature of providing snowmobile play areas appears to satisfy the desires of most snowmobilers. Some alder brush was cut, although the proposal described only tree cutting. However, the review indicated that this deviation was slight enough that it was within the effects analyzed in the EA. The project complies with the Forest Plan.

Lowman RD:

- **Lower Lowman Fuels Reduction:**
  The project's objectives were to: 1) ensure long-term health of the larger, more desirable trees (i.e., ponderosa pine) by increasing their resilience to insects/disease and the likelihood they will survive wildfire; 2) protect private property/leases adjacent to NFS lands by reducing the potential for uncontrollable crown fire and wildfire intensity within the project area; and 3) create a relatively safe and efficient environment for fire fighters. The review indicated that all three objectives had been met, with the caveat that, by reducing the potential for uncontrollable crown fire and wildfire intensity, we reduced the risks to wildfire rather than "protected" private property – as the latter is impossible to assure. Effects to key resources were within the expected range, including the impacts to Riparian Conservation Areas (RCAs). The project design features and mitigation were effective, and the effects were adequately disclosed in the NEPA document (Decision Memo). The project complies with the Forest Plan.

Emmett RD:

- **Airline Timber Sale:**
  The project's objectives regarding vegetation condition and other resources were met, and effects to key resources were within the expected range, including the potential for new infestations of noxious weeds (i.e., no apparent surge in noxious weeds species currently in the area have been noted to date). The project complies with the Forest Plan.

The project reviews conducted in FY 2007 add to those undertaken in FY 2004, 2005 and 2006. While some of the projects monitored in 2004 and 2005 were guided by the previous Forest Plan, in general they achieved their stated objectives, with effects within the range anticipated and disclosed in the environmental analysis documents.

Projects monitored in 2006 included:

- Tollgate Hazardous Fuels Reduction (Mountain Home RD),
- Barber Flat Timber Sale and Mores Creek Watershed Restoration (Idaho City RD),
- Paradise Valley Hazardous Fuels Reduction (Cascade RD),
- Oxbow Prescribed Fire (Lowman RD), and
- Silver Creek Integrated Resource Project (Emmett RD).

Projects monitored in 2005 included:

- Rabbit Creek Road Decommissioning and Mores Creek Summit Parking Area (Idaho City RD),
- South Fork Salmon Fire Salvage (Cascade RD),
- Whitehawk Whitebark Pine Restoration and Bear Valley (Casner Creek) Culvert Replacement (Lowman RD), and
- Campground Hazard Tree Removal (Emmett RD).

Projects monitored in 2004 included:

- South Fork Boise River Management/Anderson Ranch Recreation Management and the Paradise Vegetation Management Project (Mountain Home RD),
- Bear-Hunter Watershed Restoration/Road Decommissioning Project and Ten-Mile Fuel Reduction Project (Idaho City RD),
- Brush Boulder Timber Sale (Cascade RD),
- Five-Mile and Wapiti thinning projects (Lowman RD), and
- Sagehen ATV Trail (Emmett RD).

III. FUTURE MONITORING AND EVALUATION REPORTS AND SCHEDULE

This Forest Plan Monitoring Report has been issued in September 2010. In future years, the Forest Plan monitoring report may be issued in the spring or summer of the year after the reporting period (e.g., spring or summer 2007 for the 2006 report), contingent upon other work priorities. This will allow a complete display of information related to the previous fiscal year (e.g., budget, etc.) as well as resource monitoring and evaluations of data collected through the prior field season (e.g., data collected from April through November, evaluated from November through February).

Also, the Forest Plan Monitoring and Evaluation report is intended to be a "living" document, meaning there will not be separate year-to-year reports, rather addendums to the existing report. It also means information displayed in the 2008/2009 report will be added to the 2007 report. Much of what we learn is based on how things evolve from year to year, rather than what we learn at a single point in time. For example, trends associated with several of the questions found in Tables IV-1 (Section II-1) and IV-2 of the Forest Plan will become more apparent with the greater succession of yearly data collected.

IV. ERRATA

Some errors have been found in the final documents for the revised Boise National Forest Land and Resource Management Plan (Forest Plan). These changes represent factual corrections or clarifications that have no bearing on the analysis completed or the decisions made by the Responsible Official in the Record of Decision for the Boise National Forest Plan. Changes are presented here to correct inconsistencies between the final documents and technical report or project record information, and to help make the documents easier to understand and implement for Forest managers.

This year's errata (errata # 7) for the revised Forest Plan are included as Attachment 2.

V. FOREST PLAN AMENDMENTS

As discussed in Chapter IV of the revised Boise National Forest Plan, the Forest Plan will be periodically amended to help keep the Forest Plan current. In FY 2009, 2008 and 2007, no Forest Plan amendments were issued.

In 2005, a Forest Plan amendment for the Cascade Reservoir Management Area (MA) 18 associated with the Tamarack Backcountry Skiing Proposal was adopted. The amendment was included as Attachment B of the Decision Notice and Finding of No Significant Impact (DN/FONSI) for the Tamarack Backcountry Skiing Proposal. A copy of this DN/FONSI, including the Forest Plan amendment, is available from the Boise NF.

VI. LIST OF PREPARERS

The following members of the Boise NF interdisciplinary team developed this monitoring report. Team members are listed alphabetically by last name, along with their title:

Darla Arana
Position: Forest Resource Assistant

Marie Willis
Position: Forest Facilities Engineer

Kathleen Geier-Hayes
Position: Forest Fire Ecologist

Randall R. Hayman
Position: Forest Planner and Environmental Coordinator

Danelle Highfill
Position: Forest Outdoor Recreation Planner

Marianna Bilbao
Position: Forest Budget Officer

Maria Miramontes
Position: Forest Budget Analyst

Lisa Nutt
Position: Forest Wildlife Biologist

Susanna (Susie) Osgood
Position: Forest Archeologist

Joey Pearson
Position: Administrative Assistant

Cyd Weiland
Position: Land Management Planner

CITATIONS

BNF No. 07-PA-11040202-079. Participating Agreement between the State of Idaho Department of Fish and Game, U.S. Fish and Wildlife Service Snake River Basin Office, Dr. Eric Yensen and the U.S.D.A. Forest Service Payette and Boise National Forests. Executed on September 20, 2007, Boise National Forest. Boise, Idaho. 18 p.

Conservation Plan for the Greater Sage Grouse in Idaho (2006 Public Review Draft)

DeHaan, P.W. and W.R. Ardren. 2008. Genetic analysis of bull trout in the Deadwood and Payette Rivers, Idaho. U.S. Fish and Wildlife Service Abernathy Fish Technology Center, Longview, WA.

Dunham, J.B. and B. E. Rieman. 1999. Metapopulation Structure of Bull Trout: Influences of Physical, Biotic and Geometrical Landscape Characteristics, Ecological Applications, Vol. 9, No. 2, pp. 642-655.

Dunham, J. B., B. E. Rieman, and G. L. Chandler. 2001. Development of field-based models of suitable thermal regimes for interior Columbia Basin salmonids. U. S. Environmental Protection Agency, Seattle, WA

Dunham, Jason B., Bruce E. Rieman, and James T. Peterson. 2002. Patch-based Models of Species Occurrence: Lessons from Salmonid Fishes in Streams, In: J.M. Scott, Heglund, P.J., Samson, F., Haufler, J. Morrison, M, Raphael, M., Wall, B. (eds.), Predicting Species Occurrences: Issues of Accuracy and Scale. Island Press, Covelo, CA, pp. 327-334.

Dunham, J.B., M.K. Young, R.E. Gresswell, and B.E. Rieman. 2003. Effects of fire on fish populations: landscape perspectives on persistence of native fishes and nonnative fish invasions, *Forest Ecology and Management*, Vol. 178, pp. 183-196.

Fausch, K. D., C. L. Hawkes, and M. G. Parsons. 1988. Models that predict standing crop of stream fish from habitat variables : 1950-85 . U.S . Forest Service General Technical Report PNW-213.

Hamel, Paul B., Winston P. Smith, Daniel J. Twedt, James R. Woehr, Eddie Morris, Robert B. Hamilton, and Robert J. Cooper. 1996. A land manager's guide to point counts of birds in the Southeast. Gen. Tech. Rpt. SO-120. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Research Station. 39p.

Ham, K.D. and T. N. Pearsons. 2000. Can reduced salmonid population abundance be detected in time to limit management impacts? Canadian Journal of Fisheries and Aquatic Sciences 57: 17-24.

Howe, R. W., A.T. Wolf, and T. Rinaldi. 1995. Monitoring birds in a regional landscape: lessons from the Nicolet National Forest bird survey. Pages 83-92 in C.J. Ralph, J.R. Sauer, and S. Droege, editors. Monitoring bird populations by point counts. U.S. Forest Service Gen. Tech. Rpt. PSW-GTR-149.

Hutto, Richard L. and Jock S. Young. 2002. Regional landbird monitoring: perspectives from the Northern Rocky Mountains. Wildlife Society Bulletin 30(3):738-750.

Jimenez, J.M. and D.W. Zaroban. 1998. *Deadwood and Payette Rivers Key Watersheds Bull Trout Problem Assessment,* Southwest Basin Native Fish Watershed Advisory Group, Boise Regional Office, 1445 N. Orchard, Boise.

Idaho Department of Fish and Game. 2005. Idaho Comprehensive Wildlife Conservation Strategy.

Kaltenecker, Greg, J.D. Carlisle, J. Kaufmann, P.Alden, D.Rankin, S. Roedl, J.Slawson and M.J. Bechard. 2010. Fall Migration of Raptors and Songbirds, Boise Ridge, Idaho, Annual Report, Fall 2009. Idaho Bird Observatory, Boise, Idaho. 34 p.

Kaltenecker, Gregory S., Jay D. Carlisle, Kyle Wright, Emily Hockman, Chad Holy and Marc J. Bechard. 2008. Idaho Bird Observatory: Fall Migration of Raptors and Songbirds, Boise Ridge, Idaho. Annual Report, Fall, 2007. Dept. of Biology, Boise State University, Boise, ID.

Level 1 Team Agenda. January 23, 2009. Boise National Forest. Boise, Idaho. 1 p.

Mack, Diane Evans and Pamela Bond. 2010. Northern Idaho Ground Squirrel Population Monitoring Progress Report for the 2009 Field Season, Threatened and Endangered Species Project E-28-8, Section 6, Endangered Species Act and Cooperative Agreement No. 14420-6-J036. Idaho Department of Fish and Game, Boise, Idaho. 21 p.

Mack, Diane Evans. 2008. Northern Idaho Ground Squirrel Recovery Implementation, Cooperative Agreement 14420-6-J036 for the period October 2006 – September 2007.Idaho Department of Fish and Game. Boise, Idaho. 17 p.

Maxell. 1999. A Power Analysis on the Monitoring of Bull Trout Stocks Using Redd Counts. North American Journal of Fisheries Management: Vol. 19, No. 3, pp. 860–866.

Nelson, Rodger L. and David C. Burns. 2005. Developing Appropriate Sediment-Related Watershed Condition Indicators for National Environmental Policy Act Analyses and Biological Assessments in the South Fork Salmon River

Peterson et al. 2004. An Evaluation of Multipass Electrofishing for Estimating the

Abundance of Stream-Dwelling Salmonids. Transactions of the American Fisheries Society 133:462–475, 2004

Platts, W.S. and R.L. Nelson, 1988, Fluctuations in trout populations and their implications for land-use evaluation. North American Journal of Fisheries Management 8:333-345.

Poole, G., J. Dunham, M. Hicks, D. Keenan, J. Lockwood, E. Materna, D. McCullough, C. Mebane, J. Risley, S. Sauter, S. Spalding, and D. Sturdevant. 2001. Scientific issues relating to temperature criteria for salmon, trout, and charr native to the Pacific Northwest. U.S. Environmental Protection Agency, EPA 910-R-01-007, Seattle.

Ralph, C. John, Geoffrey R. Geupel, Peter Pyle, Thomas E. Martin, David F. DeSante. 1993. Handbook of field methods for monitoring landbirds. Gen. Tech. Rep. PSW-GTR-144. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. 41p.

Raphael, Martin G., Richard Holthausen, Bruce G. Marcot, Terrell D. Rich, Mary M. Rowland, Barbara C. Wales, and Michael J. Wisdom. 2000. (Draft) Effects of SDEIS Alternatives on Selected Terrestrial Vertebrates of Conservation Concern within the Interior Columbia River Basin Ecosystem Management Project, Pacific Northwest Research Station, Olympia, WA

Rieman, Bruce, Danny Lee, Jack McIntyre, Kerry Overton, and Russ Thurow. 1993. Consideration of extinction risks for salmonids, *Fish Habitat Relationships Technical Bulletin, Number 14.* USDA Forest Service, Intermountain Research Station, Boise, Idaho.

Rieman, Bruce E. and John D. McIntyre. 1995. Occurrence of Bull Trout in Naturally Fragmented Habitat Patches of Varied Sizes, *Transactions of the American Fisheries Society,* Vol. 124, No. 3, pp. 285-296.

Schwartz, Michael K., Todd Ulizio and Ben Jimenez. 2006. U.S. Rocky Mountain Fisher Survey Protocol. USFS Rocky Mountain Research Station, Missoula, MT

Spruell P., B.E. Rieman, K.L. Knudsen, F.M. Utter and F.W. Allendorf. 1999. Genetic population structure within streams: microsatellite analysis of bull trout populations. Ecology of Freshwater Fish. 8:114-121.

Spruell, P., A. R. Hemmingsen, P. J. Howell, N. Kanda, and F. W. Allendorf. 2003. Conservation genetics of bull trout: geographic distribution of variation at microsatellite loci. Conservation Genetics 4:17-29.

State of Utah Natural Resources, Division of Wildlife Resources. 2005 Utah Comprehensive Wildlife Conservation Strategy.

USDA Forest Service. 1993. Region 4 Sensitive Species Broadcast Vocalization Compact Disc – Payette National Forest. 12p.

USDA Forest Service, Boise National Forest. 2006. FY 2006 Tribal Relations Report, Boise NF.

USDA Forest Service, Boise National Forest. 2007. Boise National Forest: 2007 Tribal Accomplishment Report.

USDA Forest Service, USDI Bureau of Land Management, USDI Fish and Wildlife Service, Environmental Protection Agency, DOC (NOAA) National Marine Fisheries Service, 2003a, Interagency Memorandum of Understanding, to cooperatively implement the "Interior Columbia Basin Strategy."

USDA Forest Service, USDI Bureau of Land Management, USDI Fish and Wildlife Service, Environmental Protection Agency, DOC (NOAA) National Marine Fisheries Service, 2003b, The Interior Columbia Basin Strategy, a strategy for applying the knowledge gained by the Interior Columbia Basin Ecosystem Management Project to the revision of forest and resource management plans and project implementation.

Whitely, A. R., P. Spruell, B.E. Rieman and F. W. Allendorf. 2006. Fine-Scale Genetic Structure of Bull Trout at the Southern Distribution Limit. Transactions of the American Fisheries Society 135:1238-1253.

Wisdom, Michael J.; Holthausen, Richard S.; Wales, Barbara C.; Hargis, Christina D.; Saab, Victoria A.; Lee, Danny C.; Hann, Wendel J.; Rich, Terrell D.; Rowland, Mary M.; Murphy, Wally J.; Eames, Michelle R. 2000. Source habitats for terrestrial vertebrates of focus in the interior Columbia basin: broadscale trends and management implications. Volumes 1-3. Gen. Tech. Rep. PNW-GTR-485. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 3 vol. (Quigley, Thomas M., tech. ed.; Interior Columbia Basin Ecosystem Management Project: scientific assessment). 529p.

Woodbridge, Brian and Christina D. Hargis. 2006. Northern goshawk inventory and monitoring technical guide. Gen. Tech Rep. WO-71. Washington, DC: U.S. Department of Agriculture, Forest Service. 80p.