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September 2012

Boise National Forest Land and Resource Management Plan

Cumulative Monitoring and Evaluation Report FY 2004 - 2011

Monitoring Aquatic Resources on the Boise National Forest

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BOISE NATIONAL FOREST
LAND AND RESOURCE MANAGEMENT PLAN

FYs 2004 - 2011 MONITORING AND EVALUATION REPORT
September 2012

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 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 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. As a result of this adaptive management approach, needs for change were identified in 2008-2009 and a Forest Plan amendment was completed in 2010 that addressed these needs for change; refer to section V of this report for more detail.

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, as amended in 2010, provide the knowledge and information to keep the Forest Plan current. Monitoring and evaluation are intended to tell us how 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

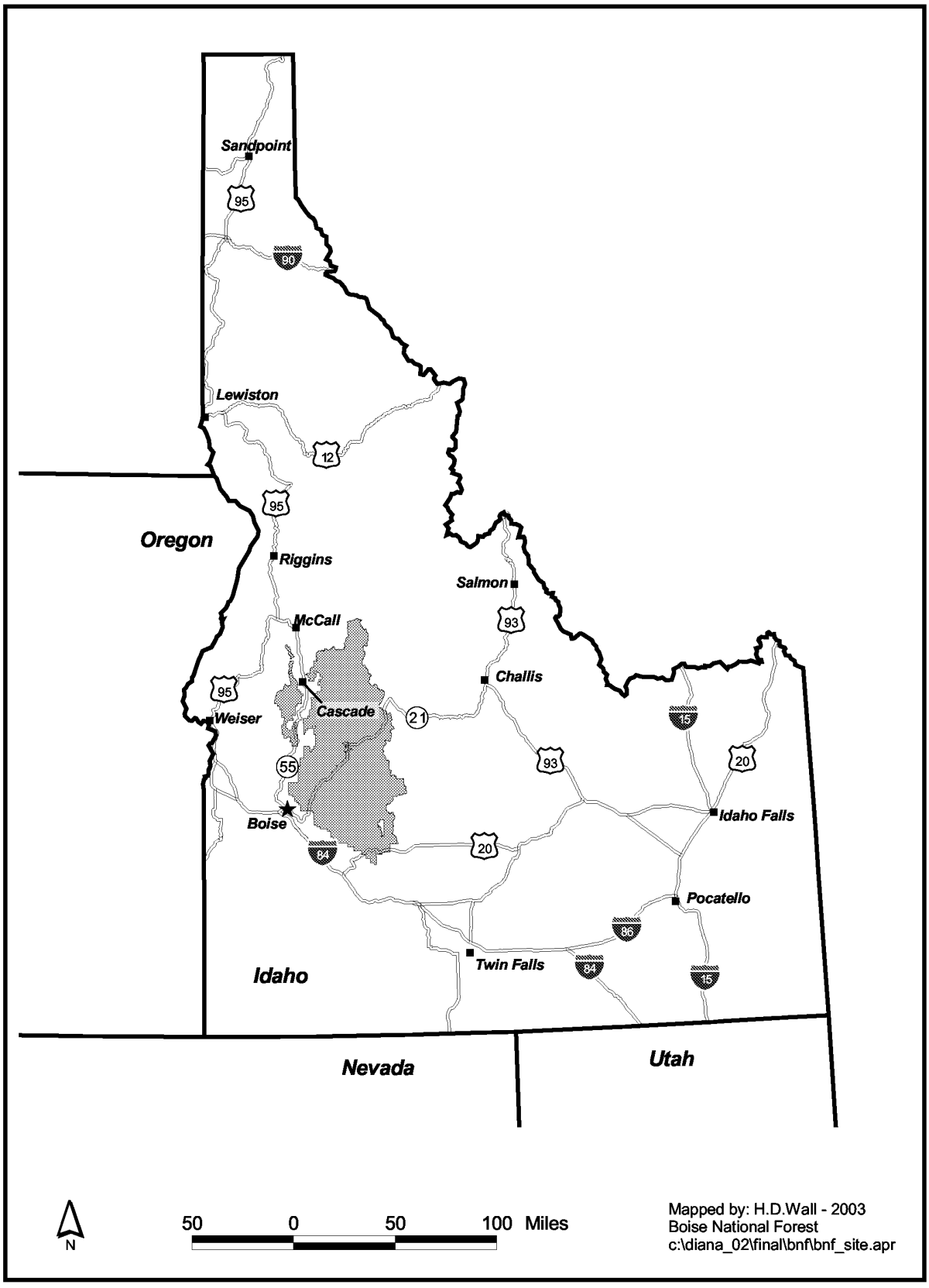
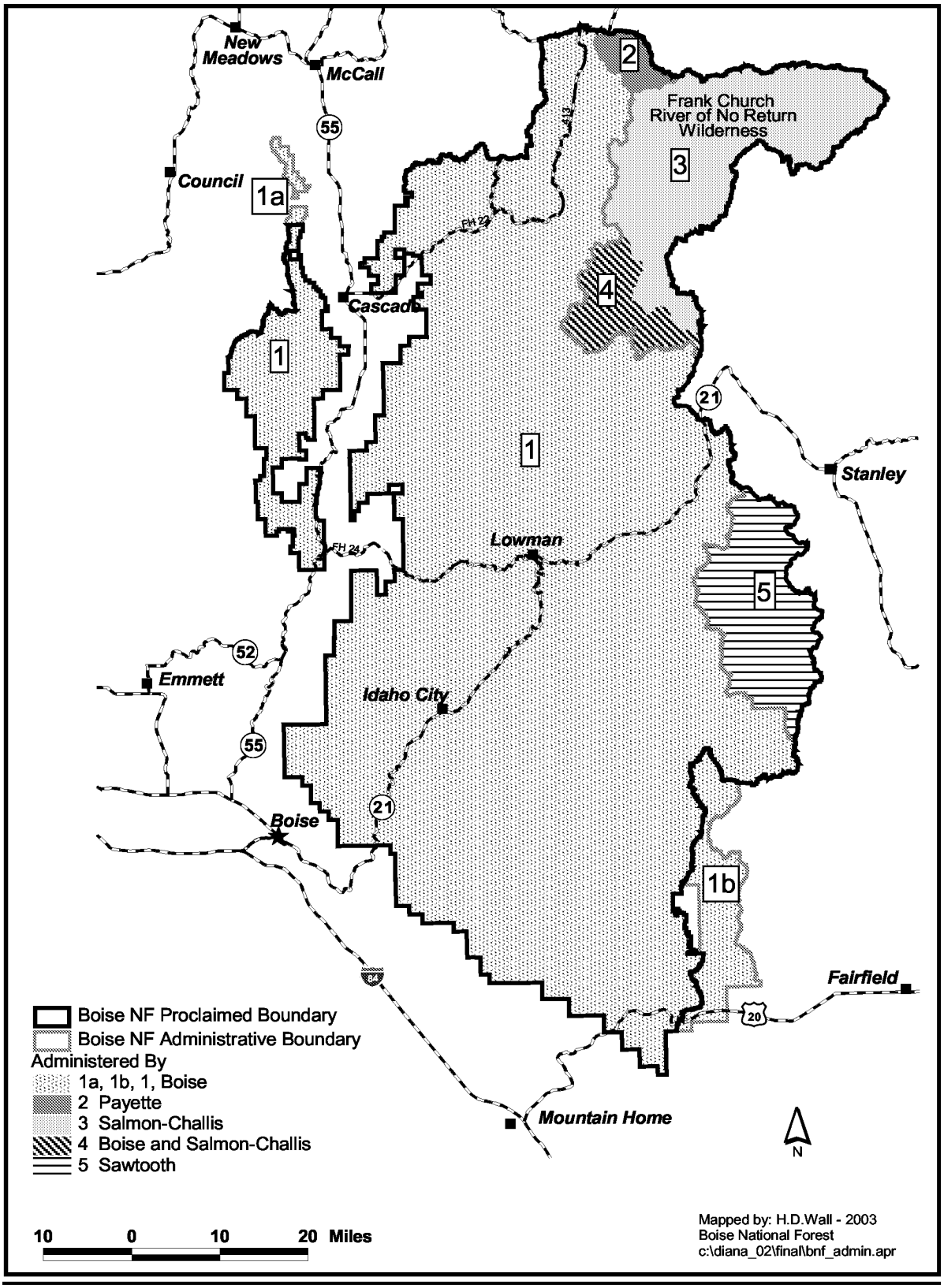


Figure 2: Boise National Forest Proclaimed and Administrative Boundaries



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 Forest Plan, as amended in 2010. 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 and 2010 Records 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 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.

As introduced above, a forest plan amendment was completed in 2010 to accomplish a 2003 Forest Plan objective (WIOB03) to develop a wildlife conservation strategy and integrate into the Forest Plan, as well as to address needs for change identified in 2008-2009. These needs for change were developed, in part, from new information resulting from the State of Idaho's Comprehensive Wildlife Conservation Strategy (WCS) completed in 2005 and to address changed vegetative conditions resulting from unplanned wildland fire and planned forest management activities through 2007 which affected nearly 20 percent of the planning unit acres, or 432,000 acres (USDA Forest Service, 2010). Refer to Section V of this report for a more detailed summary as to what changed as a result of the 2010 Forest Plan amendments.

I-3. FYs 2004-2011 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, as well as other timeframes. 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 are 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, 2 years, 3 years, 5 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) 2011[1] Monitoring and Evaluation Report, issued in September 2012, is the most recent report issued by the Forest. Because the FY 2012 report displays the eighth 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", as well as every "2, 3 or 5 years." In addition, it summarizes the monitoring questions and their related indicators to be reported on every "3 years." These 3-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 season, and development of a Forest Plan amendment adopting a WCS for the forested biological community, issued in July 2010 discussed earlier. Due to these other compelling priorities, the Forest Supervisor decided to combine the FY 2008 annual Monitoring and Evaluation results with those in FY 2009[2] and produce a single report, and similarly to combine the FY 2010 annual Monitoring and Evaluation results with FY 2011 results to result in this single report.

As in previous years, this report discloses the results from FYs 2010[3] and 2011. Similar to previous years, this report will be cumulative and will report on the current year's monitoring results[4] 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 "2-year" or "3-year" or "5-year" reporting requirements.[5] 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 in this report and subsequent reports.

[1] October 1, 2010 – September 30, 2011
[2] FY 2009 = October 1, 2008 – September 30, 2009
[3] FY 2010 = October 1, 2009 – September 30, 2010
[4] Note that annual monitoring reports include results from the previous year and earlier. Thus, monitoring data collected during the summer and fall of 2012 will be complied and evaluated in FY 2013 (October 2012 through September 2013) and reported in the FY 2013 report scheduled to be issued in September 2013.
[5] Elements with "2-year" reporting requirements were included in the FY 2005 and FY 2007 annual monitoring reports, while elements with "3-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 2004-2011 CUMULATIVE 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 Forest-wide 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. In addition, accomplishments from the FY 2004, FY 2005, FY 2006, FY 2007, and FY 2008/2009 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.

The objectives addressed below will be organized by the resource section they are found in the Forest 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: *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:

TEPC fish species include Chinook salmon, steelhead, bull trout and westslope cutthroat trout. Mapping and updating occurrence and habitats for TEPC fish species were accomplished via the following mechanisms from 2008-2011.

- **Bull trout Management Indicator Species (MIS) population trend monitoring**. See Section II-1, #3 of this report: "Population trends of the management indicator species". Two MIS reports were completed: one for 2008 (Final), and one for 2009/2010 (Draft). Data from these surveys were incorporated into the Boise Aquatic Database, Natural Resource Information System (NRIS), and the Forest GIS library.
- **Project-scale analyses.** TEPC fish and fish habitat surveys were conducted 2008-2010 for NEPA and ESA consultation for all forest management projects. Data from these surveys were incorporated into the Boise Aquatic Database, Natural Resource Information System (NRIS), and the Forest GIS library.

- **Interagency collaboration**. The Boise NF continues to cooperate with the US Bureau of Reclamation (BOR), USFS Rocky Mtn. Research Station (RMRS), Idaho Department of Environmental Quality (IDEQ) (BURP or Beneficial Use Reconnaissance Program), R1/R4 RMRS Forestry Sciences Laboratory (PIBO or PACFISH/INFISH Biological Opinion), and Idaho Department of Fish and Game (IDFG) to incorporate TEPC fish and fish habitat data into the Boise Aquatic Database, NRIS, and the Forest GIS library.

Bald Eagle Nest Surveys

In 2010, the IDFG adopted a new strategy for monitoring bald eagle nests statewide. Monitoring of all bald eagle territories/nests will now occur every 5 years. The schedule begins in 2009 and will next occur in 2014, 2019, 2024, and 2029. As resources allow, known nest sites will be monitored during in-between years. In 2010, two known nest sites at Deadwood Reservoir on the Lowman Ranger District were surveyed to determine occupancy and productivity. One of the historical nest trees in the Deadwood nest territory was occupied in 2010. This is the first year the territory has been documented as occupied since both known nest trees were killed in the 2006 Rattlesnake Fire. It was not determined whether any eggs hatched or young were fledged from the site.

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.

Other bald eagle nests on the Cascade RD, along Lake Cascade, and the North Fork Payette River, were monitored in 2008 and 2009 by wildlife biologists with the IDFG.

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.

Two bald eagle nest sites within one pair's territory are currently monitored on the Lowman RD. In 2008, the historical nest trees in the Deadwood nest territory remained unoccupied. 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.

Surveys in 2007 confirmed both historical nest trees were killed by the fire and the nests were unoccupied. A juvenile bald eagle was observed on September 12 at Deadwood reservoir suggesting successful reproduction. It is unknown whether the juveniles were produced at the reservoir, or whether they had moved in to take advantage of the kokanee run.

During 2006, the occupied nest fledged two young eagles before the Rattlesnake Fire burned through the nest stands.

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.

Mid-Winter Bald Eagle Counts

Bald eagle mid-winter counts conducted by District wildlife biologists on the Boise NF continued in 2011. The Mountain Home RD wildlife biologist continues to be the Zone 6 Recovery Zone Coordinator for mid-winter count data collection.

Mid-winter bald eagle counts are conducted on three 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 early January. On the Lowman RD, approximately 26 miles along the South Fork Payette River was surveyed. 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. The number of bald and golden eagles detected along this route during recent years has ranged from 0 in 2002 to 15 in 2005.

South Fork Boise River Wood Duck Nest Boxes

Nesting opportunities for waterfowl were enhanced along the South Fork Boise River with the placement of four goose nest platforms and four wood duck nest boxes. The South Fork Boise River is a very popular recreation area with a top rated trophy fishery and family-friendly access for camping, fishing, and wildlife viewing. Placement of these nest structures will increase nesting opportunities for wood ducks, Canada geese, and other cavity nesters and increase viewing opportunities for the public while recreating in the river corridor.

Wood duck nest box.

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

An updated 2010 occurrence map from IDFG was provided to the Forest.

Survey efforts on the Emmett and Cascade RDs in 2008 and 2009 did not locate any northern Idaho ground squirrel occurrences on the Boise NF.

Survey protocols followed those outlined by the U.S. Fish and Wildlife Service (FWS), Snake River Basin Office. Areas for the survey were identified 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 NIDGS. Some areas surveyed had prior year surveys completed on them, while other areas were surveyed for the first time.

In 2007 and 2006, 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). No NIDGS occurrences were noted on the Boise NF; Columbian ground squirrels occupied many of the sites.

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 NIDGS Technical Team.

The 2005 discovery of NIDGS 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.

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: *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.*

Accomplishments:

Northern Idaho Ground Squirrel Recovery Efforts
In 2012, an IDFG progress report summarizes population-monitoring efforts during the field season, including 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 2010). In summary, population monitoring for NIDGS occurred from April through June. The unusually cold, wet spring reduced the number of days available for survey during the prime monitoring period. This affected counts at a number of sites. The total 2010 estimate was 1,560 adults and yearlings. This is lower than 2009 but numbers are considered essentially the same as 2009 since six sites known to have squirrels were not visited in 2010 due to weather.

In 2010, the Boise NF did not conduct field surveys for this species. The Forest 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 FWS, IDFG, the Payette and Boise NFs, and The College of Idaho. Members represent varied technical expertise, including research, silviculture, and wildlife management.

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.[6]

In FYs 2008 and 2009, the FWS, Payette NF, and IDFG continued participating in the NIDGS recovery efforts.

FWS, IDFG, Payette and Boise NFs, along with 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.

[6] 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.

Bull Trout Cooperative Study - Deadwood Reservoir

The cooperative studies with BOR, FWS, and IDFG previously reported in the 2007 Forest Plan Monitoring Report continued in a less formal manner through 2011. The BOR continues to conduct research on effects of the operation of Arrowrock and Deadwood Dams and their tributaries on bull trout. These studies provide valuable life history, migration patterns, migration timing, and population data to the Boise NF. The ShoBan and Nez Perce Tribes also cooperatively work with the Boise NF to research Chinook salmon and steelhead life history with weirs, red counts, and juvenile fish sampling. The RMRS continues to coordinate with the Boise NF to map Chinook salmon redds on Boise NF streams. In 2011, the RMRS provided research-level assistance to the Boise NF bull trout MIS monitoring effort, and provided climate-change models for use in conjunction with the population monitoring.

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).

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 electro-fished 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.

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 web site (http://www.usbr.gov/pn/programs/usrb/index.html) or by contacting the Forest fisheries biologist.

Payette River Bull Trout Genetics Study – Phase 1

The Payette Basin bull trout genetics study is a cooperative effort between the BOR, FWS, and Boise NF.

Tissue samples were collected during field surveys by personnel from the BOR, the Forest Service and the FWS. 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 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).

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 heterozygosis, 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 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 FWS laboratory in Abernathy, Washington for processing in phase 3 of the study (2008). In 2007, the FWS 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 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 web site (http://www.usbr.gov/pn/programs/usrb/index.html).

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

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

Accomplishment:

In 2011, aquatic subwatershed (and in some cases subbasin) updates were individually completed as Forest projects developed, and continue to be updated as new data is acquired and projects are completed. It is anticipated that the Boise NF, NOAA Fisheries, and FWS will revisit the "Framework" for implementation of the 2003 Forest Plan that was developed to inform project level consultation agreed to in 2004 and make necessary revisions to this process to improve future outcomes.

From 2008-2010, aquatic subwatershed (and in some cases subbasin) updates were individually completed as Forest projects developed and continue to be updated as new data is acquired and projects are completed.

In 2008-2009, vegetative baseline conditions were updated across all subbasins.

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 2004, the Boise NF, NOAA Fisheries, and FWS agreed to a "Framework" for implementation of the 2003 Forest Plan that will inform project level consultation. The process, developed in coordination with RMRS, addresses multi-scale analyses of risks and threats to species and their habitat and tracking of habitat environmental baselines.

Objective: *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.*

Accomplishments:

- In 2011, work continued by the Forest fish and wildlife biologists toward reinitiating BA, which is scheduled to be completed in FY 2013.

- The 2009 Fire Suppression Operation Guidance map was presented to the Level 1 Team (FWS, NOAA Fisheries, and 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.

- 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.

- In 2006, the Boise and Sawtooth NFs developed a Programmatic Biological Assessment (BA) for Wildfire Suppression and Wildland Fire Use activities. 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.

- Operational resources were finalized on the Boise NF in FY 2004, with development of a map entitled "Fire Suppression Operations Guidance 2004 Fire Season (Initial and Extended Attack)."

AIR QUALITY AND SMOKE MANAGEMENT

Objectives (Forest Plan, page III-16)

Objective: *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.*

Accomplishments:

In spring 2010, DEQ started to develop a Smoke Management Program (SMP) for Idaho, which would include the operations of the Montana/Idaho Airshed Group. The state SMP would include smoke management practices and coordination burn operations for non-members of the Airshed Group. This effort is delayed due to other SMP demands within DEQ.

All prescribed burns on the Forest were conducted with "burn day" recommendations from the monitoring unit of the Airshed Group. However, in fall 2010, one burn near Idaho City did contribute to a smoke intrusion and triggered a "Stage I" emergency episode for a small portion of Boise County. In a "Stage I" emergency episode, all new burning is banned. The restrictions were lifted the second day after the burn was ignited. The Boise NF, along with partners, conducted an After Action Review (AAR) within 2 weeks after the event since the 300-acre prescribed burn was ignited with a "burn day" approval from the monitoring unit. All participants believed the AAR was a positive experience and all learned from this event to help avoid future events.

Over the last 7 years, the Boise NF has maintained membership in the Montana/Idaho Airshed Group. IDEQ 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 outlined in the Interim Air Quality Policy.

The State of Idaho has a voluntary SMP. The Boise NF is a member of the Montana/Idaho Airshed Group. IDEQ has certified to the 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.

Objective: *Within 5 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:

Policy changes regarding wildland fire for resource benefit only prescribed fire emissions are applicable to this objective. The Forest continues to report prescribed fire data 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 IDEQ.

IDEQ is still in the process of finalizing a Regional Haze State Implementation Plan (SIP). Once the SIP is finalized, the Forest will work IDEQ to provide required data.

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

Accomplishments:

The potential impacts of smoke on public health and welfare is an important consideration for prescribed burns and for "unplanned" ignitions. In 2008, an interagency coordination and communication strategy for Montana and Idaho was developed for unplanned ignitions. This strategy has been updated annually by participants who include several Federal land management agencies and IDEQs in Montana and Idaho. Since the development of the smoke management strategy, three unplanned ignitions, Eight Mile (2009), Little Beaver Complex (2010), and Castro (2011), were large enough to trigger coordination and communication efforts outlined in the strategy.

In FYs 2008 and 2009, the Boise NF, in partnership with local land management agencies 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 web site (rxfire.com) and telephone "hotline" that are updated weekly with the size, location, and timing of anticipated burns. 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)

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

Accomplishments:

In FYs 2008 through 2011, Boise NF personnel continued cooperating with research silviculturalists from the RMRS examining fuel and vegetation management effects on erosion and sediment delivery at the drainage scale in the Boise Basin Experimental Forest.

Annual monitoring of bull trout began in 2005. 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.

Monitoring bull trout as a management indicator species (MIS) was developed with the Sawtooth NF, Intermountain Regional Office, RMRS, IDFG, and BOR in 2004.

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 tested 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: *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.*

Accomplishments:

From 2008 through 2011, progress continued on the road sediment inventory within the Bear Valley, Middle Fork Payette, and Upper South Fork Salmon River subbasins. This work is a partnership with the EPA and IDEQ to assess the major sources of road induced sediment on the Boise NF.

In 2007, a "Green Lidar" flight of the Casner Creek restoration channel on the Lowman RD was completed. The Forest Service's RMRS 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

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 IDEQ also collected the BURP[10] 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 RMRS 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 IDEQ during 2006.

[10] **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.

In 2004, the Boise NF originally entered into a partnership with the EPA and IDEQ 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)[11] priority subwatersheds.[12]

Objective: *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.*

Accomplishments:

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 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: *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:

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

The Boise NF continued its long-term partnership in FY 2011 with the Idaho Bird Observatory to monitor fall bird migration activity. The Boise Ridge is one of the few known sites where diurnal raptors, forest owls, and passerines concentrate during fall migration

In FY 2011, a total of 4,778 land birds representing 60 species were captured; 958 diurnal raptors representing 9 species were banded; and 98 forest owls were banded, 3 flammulated owls and 95 saw-whet owls (Kaltenecker et al. 2011). A total of 5,800 migrant raptors were counted, including: Cooper's hawks, turkey vultures, merlins, peregrine falcons, northern goshawks, golden eagles, and sharp-shinned hawks, among others.

[11] 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).

[12] **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)

Details on the 2010 migratory season monitoring effort can be found in the Idaho Bird Observatory final report (Kaltenecker et al. 2011). 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 provides an analysis of the trend information to date and updates regarding ongoing graduate research projects.

In 2009, a total of 5,748 land birds 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).

Fisher Hair Snare Efforts

Surveys for fishers using the Schwartz et al. (2006) U.S. Rocky Mountain Fisher Survey Protocol were conducted on the Forest in 2010. 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.
- Only those cells in the fisher geographic range with > 50 percent habitat were surveyed.
- A minimum of four stations per grid were deployed for 21 days.
- Stations should be spaced 0.5 mile apart. Placement of the first station is flexible, but placement of the next three 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 one hair snare (triangle or square design with gun brushes) and hair samples are collected.
- Samples are sent to the RMRS for identification.

Fisher surveys were conducted by IDFG on the Boise NF under an existing Challenge Cost-Share Agreement (07-CS-11040214-081 Mod. 3). Cells surveyed on the Forest overlay the Southwest Region of the IDFG Nampa and McCall sub-Regions. The fisher is both a sensitive species for the Boise NF and a Species of Greatest Conservation Need for the State of Idaho. It was mutually beneficial for both agencies to cooperate on data collection and analysis for this species.

There are currently 14 historic records of this species on the Forest. The lack of sufficient occurrence data affects the Forest's ability to validate habitat models for the species, assess effects of management actions, and inform management decisions.

The methodology used is inexpensive and simple to deploy. Following the protocol can provide a 97.7 percent chance of detecting fisher should they be present. Benefits to IDFG from this project include: data to inform IDFG furbearer management decisions and data to inform updates to the State's Comprehensive WCS.

Genetic data from this study will contribute to a database maintained by the RMRS for this species across the Rocky Mountain portion of its range.

In 2009, fisher hair surveys were conducted on the Boise NF. Sixty-three hair snares were set out in 13 cells. Three cells were on the Cascade RD; three on the Lowman RD; four on the Idaho City Ranger District; and three on the Mountain Home Ranger District (see Figure 1). Hair samples from 34 hair snares were collected, 3 snares also had scat samples. Of the 37 samples, 19 did not contain viable DNA.

The remaining 18 samples did not contain fisher DNA. Instead, the samples contained DNA from canids (wolf/dogs), skunks, American martens, and red squirrels. The Forest will continue to conduct hair snare surveys on remaining grids to determine the distribution of fisher.

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.[13]

Seven cells 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.

The Boise River Wildlife Linkage Partnership (BRWLP)

Phases 2 and 3 of the BRWLP were completed in October 2011, and involved the construction of roughly 3 miles of 8 feet tall ungulate fencing, both north and south of the underpass, on the east side of State Highway 21. In 2010, the construction of the underpass and the wildlife fencing on the west side of State Highway 21 was completed. Remote sensing cameras were installed at the underpass crossing and detected deer, elk, coyote, fox, wolf, mountain lion, and other wildlife use of the underpass in the winter of 2010/2011. The number of collisions along the 3-4 mile stretch associated with the underpass was significantly lower than previous years, due in part to the underpass presence.

Completed Highway 21 wildlife underpass.

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). The goal is 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.

In 2010, the Idaho Transportation Department installed a wildlife underpass crossing to provide safe passage to wildlife crossing SH-21. A wildlife fence installed in the Boise River Wildlife Management Area (owned by USACE and the State of Idaho) was designed to direct wildlife toward the crossing (bridge underpass) and away from traffic. The underpass and associated fencing is an initial step to increase public safety by protecting the health and welfare of the traveling public while also reducing wildlife mortality and maintaining habitat and landscape integrity for mule deer, elk, and other wildlife. This corridor allows for the safe migration from summer range on the Boise and Sawtooth NFs to winter range on the Boise River Wildlife Management Area. Approximately 2,000 feet of fencing has been completed and the project is ahead of schedule. It is anticipated to be completed within the next 2 years. Currently, only a portion of the fence is completed; additional funding is being sought to complete the fence in FY 2011.

Another phase of wildlife fence construction is being planned in preparation of a second wildlife crossing further north. The location of the site is highly suited for redirecting wildlife to a safe crossing as documented with over 20 years of road kill data and known migration routes. Conservation of big game winter range near a growing urbanized area is critical to protecting people and protecting wildlife.

[13] 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 RD to deploy hair snare traps. Results from this effort did not detect any fisher.

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.

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.

Objective: *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.*

Accomplishments:

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 d.b.h. 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
Implementation of the Scott Mountain Whitebark Pine restoration project continued in 2010; 257 acres were treated.

Scott Mountain Whitebark Pine Restoration Project

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.

Several treatments were implemented during summer 2008, including: 368 acres of release, 57 acres of hand-piling (slash), and 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.

Red Mountain Reforestation Project
The Red Mountain and Sheep Trail Fires burned approximately 42,000 acres of the Lowman RD, Boise NF, during the 2006 and 2007 fire seasons. In addition to these fires, the greater Bear Valley area has been affected by several other fires over the past two decades. These fires include the Little Beaver Complex (2010), Whitehawk Fire (2010), Casner Creek Fire (2010), Cub Creek Fire (1992), County Line Fire (1992), and the Deadwood Fire (1987). The fires have shifted much of the vegetative landscape to an early successional stage which is now over-represented across the landscape based on desired conditions described in the Forest Plan.

The purpose of the project is to facilitate regeneration of conifers in areas where natural regeneration would not occur for many decades; thereby, shortening the recovery period needed to reach desired vegetation and wildlife habitat conditions. Species that are expected to benefit in the long-term from this project are lynx, fisher, boreal owl, northern goshawk, and northern three-toed woodpeckers.

The project will be implemented over several years and will treat a total of 4,000 acres. The proposal only identifies the burned areas that are expected to take many decades to regenerate naturally. These areas range from 30 to 370 acres in size and have no or few live trees that survived the fires. The project is designed to provide the widespread establishment of conifers that would eventually produce cones themselves and aid in natural regeneration. Additionally, the project will regenerate about 200 acres of whitebark pine that was killed by the fire.

In FY 2011, 572 acres of habitat was reforested.

Five hundred acres of reforestation was completed on this project in 2010. American Forests' Global ReLeaf partnered with the Forest on this project, providing a $30,000 grant for planting.

Aspen Restoration

Lake Creek Aspen Project

This project involved removal of large conifers overtopping historic climax aspen through commercial harvest on 70 acres. Removal of these conifers is expected to improve the health of these aspen clones and stimulate regeneration.

Elk calf in aspen stand.

Westside Restoration Project

The purpose of the project is to restore the overall health of aspen vegetation along Lake Cascade and to move stands toward desired conditions. The condition of the aspen stands in this area and the reason for their decline was described in the 2010 entry for this project. The proposal would specifically treat aspen clones in a manner that moves them toward desired conditions (reduces browse percentage and increases regeneration height and density) and would treat conifer stands with the purpose of reducing the risk of wildfire adjacent to private property. The proposed action would also improve visuals and wildlife habitat in the long term. Aspen clones along the West Mountain Road corridor are some of the largest stands on the Cascade RD. These clones provide natural fire breaks, wildlife habitat, are a major draw for sightseeing recreationists, and can be viewed from West Mountain Road, the reservoir, and the town of Cascade.

A project proposal was completed in FY 2011. Planning, including project analysis, scoping, response to comments and a signed decision, were also completed in FY 2011. Implementation is expected to begin in 2012.

In 2010, fixed plot surveys were used to collect stem density and percent browse data. Data will be used to inform development of restorative treatments and to prioritize those clones in greatest need of treatment.

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. The underburn 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.

Mountain Home Ranger District Aspen Inventory Project
In 2011, identification and mapping of aspen stands in three 5th field watersheds on the Mountain Home RD was initiated to gather data, which will be used to develop a restoration plan to improve aspen at a landscape scale in this area. A GPS was used to record the size and location of each aspen stand, which was defined as several clumps of four or more aspen trees with less than a chain (66-foot) separating them. More than 1,000 acres of previously unmapped aspen stands were documented. Additional inventory will be conducted in 2012.

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 Forest Service 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

Poorman Maintenance Prescribed Burn
The Poorman Project is a maintenance burn project on the Emmett RD encompassing roughly 3,500 acres of drier Douglas-fir and ponderosa pine habitats immediately north of the Banks-Lowman Highway. This area was treated with prescribed fire during the mid-1990s and 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 2010, approximately 2,350 acres were burned.

Lower Johnson Project
This project addresses the lack of browse species and targets bitterbrush planting within tree stands that burned during the 2007 Cascade Fire complex. 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 spring 2009. All 74,000 bare root bitterbrush seedlings were planted over 4 days in spring 2009. The plantings will be monitored in spring 2010 to assess survival.

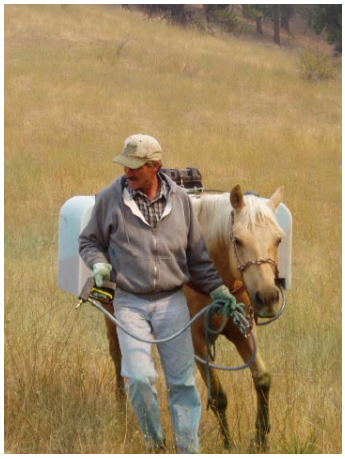
Approximately 10,900 acres of elk and mule deer winter range exists on the Cascade RD near the community of Yellow Pine, including a portion along the East Fork South Fork Salmon River and along the lower reaches of Johnson Creek.

Noxious Weed Management

Idaho City Ranger District Backcountry Weeds Treatment Project
In 2011, the Idaho City RD wildlife biologist continued implementation of the Early Detection Rapid Response Strategy to address noxious weed spread associated with use of backcountry trails and motorized trails in the Middle and North Fork Boise River and the Mores Creek Basin on the Idaho City RD, Boise NF and the Sawtooth Wilderness, Sawtooth NF. Implementation of this strategy has occurred over the past 7-8 years.

A wide variety of weeds exist in the project area, including spotted knapweed, Dalmatian toadflax, and others. The District used horseback-mounted sprayers and equipment to operate in backcountry areas. Motor vehicles equipped with spray equipment were used on motorized trails to treat known populations of noxious weeds with approved chemicals. Monitoring and documentation of new infestations was also conducted in the backcountry and on motorized trails. Implementation was accomplished through cooperative implementation agreements with the Boise County Weeds Program and the Boise Basin Cooperative Weeds Management Area.

In 2011, the amount of area assessed and treated increased with expansion of surveys and treatments into newly designated motorized trails systems. An additional 200 +miles of trails were added to the program. Treatments appear to be successful at stemming an increase in known weed populations with some areas exhibiting a decrease in size of the population. New weed populations are being detected but less frequently as the program targets removal of new weed sites and monitors for spread from known populations.



Implementation of the Idaho City Backcountry Weeds Treatment Project in 2010

In 2010, the Forest completed inventory mapping and control of invasive species on approximately 727 acres of forest trails with the use of horses and horse packed herbicide spray equipment. This work occurred in backcountry areas within and adjacent to the Sawtooth Wilderness Area on the Idaho City RD. Trails included those used by motorcycles, hikers and horsemen. All existing weed colonies were electronically monitored for past treatment efficacy, sprayed with herbicides upon discovery or evaluated for the proper integrated pest management treatment method that should be applied.

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 projects for the Boise NF. Approximately 2,000 rooted cuttings/year are anticipated to be available for out planting 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 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.

Mores Creek Watershed Restoration Project

Eight planting events were held in 2008 to restore degraded riparian habitat along Mores Creek. Over 700 people participated in plantings. Nearly 400 containerized cottonwood, dogwood, alder, willow, and thousands of pole cuttings were planted. Most of the work conducted in 2008 was instream boulder structures, j-hooks, and plantings. Nine large woody debris structures, nine barbs, eight j-hooks, 10 boulder clusters, and 1,700 feet of instream rock placement was completed. Approximately 0.5 mile of floodplain was created in 2008 and 3,000 cubic yards of mine tailings were removed. This is Phase II of this project. University of Idaho students monitored the project, which was continued by another in FY 2009.

Poorman Maintenance Prescribed Burn for Ponderosa Pine Habitat

In 2008, stand exam data was collected on approximately 5,082 acres to develop the NEPA analysis for this project. 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. This area was treated with prescribed fire during the mid-1990s and 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.

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.

- 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.

- In 2008, IDFG volunteers and members of the Idaho City RD's Youth Conservation Corps focused collection efforts on two different watersheds within the Idaho City RD: Crooked River and Lower Grimes Creek Corridor.

- Development of a native seed/plant material source for the Lower Grimes Creek corridor was a recommendation made 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 stream bank), identifying and marking high priority areas for seed collection or plant donor material, completion of ecological site evaluations/plant association identification (to be entered into seed collection database), checking seed/plant phenology, recruitment and coordination of volunteers, harvest of seed/plant propagules, pre-processing of bulk plant materials and delivery of materials to the Lucky Peak Nursery.

- In addition to seed collection, wetland plant plugs were extracted from a donor area on Clear Creek (Grimes Creek tributary) and replanted nearby within a user defined travel corridor that traverses 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.

- In 2008, more than 200 pounds of bulk seed was collected from a variety of forbs, shrubs, grasses, and wetland graminoids.

- 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 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.

Objective: *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.*

Accomplishments:

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 2011, the Forest wildlife biologist coordinated via e-mail and phone throughout the summer months with wildlife service's personnel regarding depredation issues and wolf control actions on Boise National Forest System lands.

On April 7, 2010, the Forest wildlife biologist and Forest range staff officer met with APHIS for an annual meeting at the offices of the Wildlife Services-APHIS staff.

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.

In 2008, the acting Forest wildlife biologist met with APHIS during February.

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

Accomplishments:

International Migratory Bird Day Event
In May 2011, the Boise NF participated in an International Migratory Bird Day event with IDFG, the Idaho Bird Observatory, the National Wildlife Federation Habitat Program, and the Golden Eagle Audubon Society at the MK Nature Center in Boise, Idaho. Personnel from the Boise NF helped organize and staff activities. International Migratory Bird Day celebrates the incredible journeys of migratory birds between their breeding grounds in North America and their wintering grounds in Mexico, Central, and South America. The event, which takes place on the second Saturday in May each year, encourages bird conservation and increases awareness of birds through hikes, bird watching, information about birds and migration, public events, and a variety of other education programs. The theme in 2011 was *Go Wild, Go Birding*.

Approximately 700 people (adults and children) participated in the event in 2011.

This is the ninth year the Forest has participated in this community event.

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

During 2008 and 2009, the Idaho Bird Observatory provided public education and outreach in three basic ways, including group visits to Lucky Peak, community volunteer programs, and student involvement programs. The Forest funds 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.

Other Educational and Interpretive Programs

In 2011, nearly 1,600 students attended SnowSchool. Approximately 45 percent (680 participants) were low-income, minority, or special needs students. Teachers, parents, and chaperones also participated in the outings. The Forest trained over 50 volunteer leaders/interns in winter ecology and environmental education activities.

Students attending SnowSchool in 2009-2010

In 2010, more than 1,500 students attended Snow School from January to March, including 800 students from Title One programs and other under-served areas. In addition, Snow School partners Boise Watershed and Foothills Learning Center gave 20 pre-trip classroom visits to help prepare students for their Boise NF experience. It consists of multiple programs providing an opportunity for Idaho schoolchildren to learn, 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. The Forest began hosting *SnowSchool* in 2008.

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.

In 2009, interpretive materials were prepared information kiosks 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.

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.

Bluebird Nest Box Placement

This project was a partnership project with the Notus School District in Canyon County, Idaho. Woodshop class at the school constructed 20 bluebird nest boxes. Students from the Notus School District Jr. High and Special Needs schools came out on the site of the Gregory Fire west of Idaho City, and placed the boxes in the fire area, where nesting snags are deficient due to associated salvage harvest activity, wood cutting activity, and natural blow-down of snags. Students constructed and placed 20 total nest structures in the area with the help of the District wildlife biologist. These nest boxes will be monitored in the future for use by wildlife.

Firewise Gardening with Natives

The purpose of this project is to develop "Firewise" demonstration gardens in the mountain communities of the Boise NF to provide a living example of using native and xeric plants to create both fire-resistant and aesthetically pleasing landscapes around homes in wildland/urban interface settings, while at the same time promoting the use of native species, reducing water consumption, and supporting native wildlife and pollinators.

Current Firewise projects:

- 2011 – New plantings and labels added to Idaho City Ranger Station. Plans to expand in 2012.
- 2010 – Planting and an irrigation system completed at Fire Warehouse garden. Prolific flowering and subsequent seed production at that garden has provided seed that can be used in the other locations. Plantings continue at the Veteran's Park and Idaho City RD. Selected plants are either native in the local area or valuable for wildlife, birds or insects, as well as being low water users and firewise (low flammability and volatility). The Idaho City garden project is in partnership with Idaho City Historical Foundation.
- 2009 – Firewise gardens established at the Idaho City's Veteran's Park.
- 2008 - Forest Service establishes new Fire Warehouse garden.

Firewise garden at Idaho City Ranger District 2010

Off-Highway Vehicle Statewide Idaho Ad Campaign

In FY 2011, this program included funding to support billboard advertising, radio spots, and web site development. Idaho's approach to OHV awareness has produced measurable results; a statistically based phone survey demonstrated that 34 percent of those polled recalled the messages *Use your Power Responsibly* and *Stay on Trails*; and could repeat them.

In 2010, the Forest continued its participation in the state-wide off-highway vehicle (OHV) partnership to educate the public on responsible use of OHVs on public lands. Public outreach was achieved through billboard advertising, radio spots, and web site development. Idaho's approach to OHV awareness has produced measurable results. Partners in this campaign include IDFG, the USDI Bureau of Land Management, Idaho Department of Transportation, and the Idaho Department of Parks and Recreation (IDPR) OHV Grant Program.

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.

Objectives: *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.*

Accomplishments:

2008-2010 Summer Wildlife Field Crew Surveys

Idaho City RD accomplishments:

- Surveyed 134 stations in the Becker project area for flammulated owls (sensitive species)
- Detections made at 81 stations covering approximately 12,763 acres
- Wildlife habitat surveys 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
  - 319 acres surveyed for northern goshawks (sensitive species). Three northern goshawk nest sites visited to assess occupancy and reproductive status

Cascade RD accomplishments:

- Approximately 9 acres of cliff were surveyed for peregrine falcons
- Habitat data collected on 70 point count stations for seven management indicator species woodpecker survey routes (Alpha, Bull Creek Hot Springs, Sloan's Point, Warm Lake, Yellow Pine, Rice Peak, and Log Mountain)

Emmett RD accomplishments:

- Surveyed Tripod Meadows area for northern Idaho ground squirrels
- Checked two northern goshawk nests for occupancy and reproductive status
- Monitored 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 Management Indicator Species survey routes (Lightning Ridge, Anderson Creek, East Fork Horn Creek, and Rattlesnake Trail).

Mountain Home RD accomplishments:

- Flammulated owl surveys conducted in Grouse Creek and White Flat areas.
  - 18 flammulated owls documented in Grouse Creek
  - 0 in White Flat
- Surveyed 30 stations for flammulated owls in the Shaffer and Cottonwood areas
- Checked one northern goshawk nest for occupancy and reproductive status in Cottonwood
- Surveyed approximately 1,100 acres for potential burrowing owl, pygmy rabbit, and greater sage grouse habitat.

In 2009, 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
- Two bald eagle nests

During the field season:

- 113 calling stations were surveyed for northern goshawks
- 80 calling stations surveyed 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 for pika
- Peregrine falcon surveys were completed in the Needles area of the Cascade RD
- Crews surveyed northern Idaho ground squirrels on West Mountain
- 500 acres of aspen surveys on the Mountain Home RD
- 14 fisher hair snares and three remote cameras set up to survey fisher on Idaho City and Mountain Home RDs
- Crews collected habitat data on point count stations for seven MIS survey routes
- Surveys were conducted for potential burrowing owl, pygmy rabbit, and greater sage grouse habitat

Wolverine Winter Recreation Study

The Central Idaho Wolverine and Winter Recreation Study undertook its second field season during the winter of 2010-11 (FY 2011). We repeated work in the same areas north and west of McCall on the Payette NF, and also expanded the study area to include through the Warm Lake area east and southeast of Cascade on the Boise NF. The focus of the efforts again this year included live-trapping and GPS collaring wolverines to monitor their movements and behaviors and simultaneously asking winter recreationists to carry a GPS data loggers while recreating in the study area. Over 80 percent of snowmobilers and skiers that were approached by researchers agreed to carry a small GPS unit to help map the footprint of winter recreation in the region. The Idaho State Snowmobile Association, the Central Idaho Recreation Coalition, Brundage Cat Skiing, and numerous local businesses were extremely generous with their time and cooperation, helping to spread the word about the project, collect and return GPS units, and lend their support to ensure the best possible research.

Through this collaboration, hundreds of GPS tracks from volunteer recreationists have been collected, while simultaneously monitoring the movements of up to 10 different wolverines over 2 years. This larger study area meant extra effort, but it was well worth the investment. In addition to the intensive efforts undertaken on the Payette and Boise NFs, a preliminary study on the Sawtooth NF near Stanley, Idaho, was completed to evaluate the possibility of a second study site. The study collected hair for DNA analyses from wolverines visiting potential future trap sites, and trail use was monitored using remote trail use counters and parking lot counts.

The research over the two winters has shown that, in this northern study area, wolverines have set up permanent home ranges even within the most highly recreated landscapes. We need to know if this happens elsewhere, and continue to gather additional information on how resident animals respond to winter recreation within their home ranges and during the late winter reproductive season.

In 2010, a pilot study site was selected for trapping and tracking both wolverines and recreationists. This site was solely on the Payette NF. The study has been extraordinarily successful in 2010. Six wolverines were live trapped and instrumented with GPS collars. Three of the wolverines were females and established natal den sites. Concurrent with the wolverine monitoring, the study included a very successful effort with monitoring recreation use patterns via GPS for several hundred winter recreationists. We are extremely pleased with the support received from the recreating public. An annual report has been completed summarizing the data and findings from 2010 (Heinemeyer et al. 2010).

In 2009, the Boise, Payette, Sawtooth NFs and the RMRS, took the first step in pursuing an understanding of the impacts of winter recreation on wolverine with the initiation of as 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. This investigation will begin implementation in 2010.

Winter Track Surveys

Winter track surveys were conducted on the Mountain Home RD on a preestablished survey route to determine the presence of sensitive or federally protected furbearer species such as wolverine, fisher, or lynx. This survey route was delineated by the IDFG in collaboration with other agency biologists in 2003 and was based on having a high probability of snow, presence of existing snowmobile trails, route lengths that enable completion in 1 day, and routes within suitable habitat for target species. The surveys were conducted from snowmobile at speeds of 5-15 mph within 48 hours of snowfall. The area scanned for tracks is a minimum of 5 m on each side of the snowmobile, or a total minimum width of 10 m. All species' tracks were recorded. Data was collected following IDFG protocol. No target species were detected on the surveys. Data was entered into the District's local database and will be used to inform analyses on projects in the vicinity of the surveyed route.

Sage-Grouse Monitoring

The District wildlife biologist on the Mountain Home RD continued to participate on the Mountain Home Sage Grouse Local Working Group and cooperated with IDFG to locate new sage grouse leks, capture and radio-collar birds, and monitor existing leks.

In 2011, 17 new radio collars were purchased by the District to place on sage grouse during the winter/spring of 2012.

Greater sage-grouse on a lek within 100-meters of the Forest boundary in 2010.

Participation in lek counts and sage grouse radio-tracking efforts will provide much needed information on the number of sage grouse present and the health of the population. That data is vital to ongoing range NEPA analysis on the Forest and will be used to inform management decisions.

In 2010, no new leks were discovered on the Forest and leks adjacent to the Forest boundary (i.e., within 100 meters of the boundary) were monitored.

Until 2007, very few lek counts had been conducted in the Mountain Home Sage Grouse Planning Area. The Mountain Home Sage Grouse Planning Area was identified in the Idaho Conservation Plan for the Greater Sage-Grouse (Idaho Sage-grouse Advisory Committee 2006). A Local Working Group for this Planning Area was formed during early spring 2010 and the first priority of the group was to find new leks, collar sage grouse, and monitor existing leks. To accomplish these goals, in 2010 the Mountain Home RD biologist has worked with biologists from the BLM, National Resource Conservation Service, IDFG, and IDFG volunteers.

Amphibian Surveys

Six amphibian species are known to exist on the Lowman RD, including:

- Idaho giant salamander (Dicamptodon aterrimus)
- Long-toed salamander (Ambystoma macrodactylum)
- Columbia spotted frog (Rana luteiventris)
- Western, or boreal, toad (Bufo boreas)
- Pacific chorus frog (Pseudacris regilla)
- Rocky Mountain tailed frog (Ascaphus montanus).

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 (Pacific chorus frog-4; western toad- 10; Columbia spotted frog- 8; Rocky Mountain tailed frog- 1; and long-toed salamander- 5). Seventy-six tailed frog larvae were captured and moved during the stream diversion on the Wapiti AOP project.

Sage Grouse Telemetry Survey

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 program has continued through 2011.

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.

Great Gray Owl Nest Platforms and Monitoring

Six nesting platforms were installed in or adjacent to the Landmark and Pen Basin meadows on the Cascade RD in 2010. Tree climbers used ladders to install wooden nest platforms at heights ranging from 30 to 50 feet. A nest platform site was chosen if it met the following criteria: unburned stand within preferred habitat types with ample density and trees with diameter sufficient for platform installation; site between 200 and 500 feet from open meadow habitat; abundance of ladder structures to afford fledgling owlets escape cover.

Great Gray Owl in Landmark Meadows

Nest monitoring was conducted for this species on the Lowman RD in 2010. Nineteen nesting platforms were monitored for occupancy. Each site was visited once in late June to search for presence of owls or sign. Four nesting platforms were not visited in 2010 due to the lack of personnel/time during the nesting season. Two nest sites appear to have been used in 2010 based on sign or the presence of owls in the vicinity. Productivity was not determined and no young owls were observed. Snowmelt occurred late (cool, wet spring) and the nests were checked fairly late in the breeding season (after the time when young may have left).

Bear Valley on the Lowman RD 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 (Stanley, Idaho). Fifteen nest platforms, which include seven nest platforms installed in 2007[14] 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

Monitoring of known nests on the Lowman RD was conducted by the Lowman wildlife biologist in 2010. Monitoring consists of visiting each known nest site at least once during the breeding season. If a nest is occupied, then information is recorded on the number of nestlings or fledglings. When nestlings are observed, subsequent visits are made to determine the number of nestlings surviving to fledging.

[14] 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.

Fourteen nests in four territories were monitored. Two known nest sites were occupied in 2010. Two nestlings were observed at one site. Productivity and survival at the second nest are unknown, but the presence of whitewash and down suggest that young were produced. One former goshawk nest was occupied by a great horned owl.

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.

In 2009, the District wildlife biologist position was vacant and no sites were monitored.

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.

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 next on the Cascade RD was monitored in 2006.

Two goshawks were present in 2005, but did not appear to return in. This nest was blown out of the tree sometime in 2005 and surveyors could not locate this or alternate nests. One northern goshawk nest on the Cascade RD was discovered in 2004.

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.

Garden Valley Rocket Box Bat Houses

Bat houses not monitored in 2010 or 2011.

In August 2008, bats were first observed using one of the houses.

In the spring of 2008, three rocket box bat houses were purchased and installed on stand-alone poles to attract displaced bats.

In August 2007, bat houses mounted on a barn at the Garden Valley Work Center were relocated so the barn could be painted. Following relocation there was no use of the houses by the roughly 100 bats that were displaced. The bat 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 in the vicinity of 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.

Cottonwood Guard Station Bat Houses
Site not monitored in 2010. 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 prior to departure of the bats in the fall to familiarize them with the new roost habitat.

Bat Surveys
IDFG conducted bat surveys in 2010 to collect calls for the continued development of a state bat call library.

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 portion of 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.

Spotted Frog Surveys
Surveys were conducted along a stream segment immediately before and after implementation of a stream restoration project. Visual encounter surveys were conducted on July 21 (pre-implementation) and August 20 (post-implementation). Surveys consisted of one or two observers walking along each side of the stream and recording any amphibian species observed. Frogs and toads were categorized into one of five age/size classes based on visual estimates (versus actual measurements). Handling was minimized to the extent possible in order to identify the species. A total of eight spotted frogs were observed during the July pre-implementation survey, including five adults and three juveniles. During the August post-implementation survey, a total of 35 spotted frogs were observed. While the number of adults was similar (n=4), the number of juveniles had increased (n=31). The objective was to determine whether spotted frog use changed during this period. In addition, the information will provide a baseline for long-term monitoring. The restoration project is located on a mining-disturbed stream with a long-term objective of returning the stream segment to a more natural condition (meandering, stream overflow to adjacent meadows during spring runoff).

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

Accomplishments:

Lowman RD

Wapiti Blue Project (NEPA):

- Funding continues to support accomplishment of planning (NEPA) for this project and to ensure consistency with the Forest's WCS. Project decision is expected in FY 2013.
- Integrates habitat restoration, fuels reduction, fish habitat improvements, and recreational improvements.
- Wildlife enhancement proposals include release and restoration of aspen, and restoration of low elevation ponderosa pine forests (white-headed woodpeckers, flammulated owls).

Bear Valley Project:

- In 2003, two small weed infestations of rush skeleton were discovered in Sack Meadows and the head of Bear Valley Creek near the Clear Creek (NFS road 582).
- Rush skeleton weed is now established along 13 miles of the Clear Creek road.
- Treated the skeleton weed plants in Bear Valley and all noxious weeds along the Clear Creek portion of the NFS road 582 to reduce the potential for weed spread into Bear Valley.

Casner Creek Prescribed Burn Project:

- 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.
- 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 stands;
  - Reducing fuels and the potential for stand-replacing fire events
  - Encouraging sprouting and regeneration of decadent aspen clumps
  - Project implemented in two phases:
    - First phase was implemented on May 10, 2008 to treat forested, southeast- and west-facing slopes using high fuel moisture and/or snowfields on more northerly aspects to control fire spread
    - Second phase treats portions of the northerly aspects and the transition areas between aspects where dense stands of Douglas-fir dominated.
    - Rocky Mountain Elk Foundation (RMEF) provided funds in support of the project and implementation of Phase I.

Clear Creek Stewardship Project (NEPA):

- In 2011, the collaborative group provided their project recommendations to the Forest Supervisor for consideration. Scoping was initiated in FY 2012. The proposed action scoped included most of the recommendations provided by the collaborative group. The NEPA decision for this project is anticipated in FY 2013.
- In 2010, field data was collected and a collaborative group comprised of members of the public was created and began to work with the District on this project
- Integrated resource project with multiple resource objectives to be identified by vegetation, fuels, wildlife, fish, watershed, and recreation.
- Early in planning phase and wildlife funds are being used to conduct initial wildlife surveys and to identify wildlife project objectives.
- Surveys conducted for several sensitive or MIS species including goshawk, pileated woodpecker, white-headed woodpecker, three-toed woodpecker, flammulated owl, and fisher.
- 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.

This work complements previous projects on the Lowman RD:

- The Oxbow Aspen Restoration Project is part of a landscape-scale prescribed burning project to reintroduce fire disturbance in a declining aspen stand and encourage aspen sprouting. The first phase of this project was implemented in early May 2006.

- 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

Scriver Creek Integrated Restoration Project (NEPA):

- Multi-resource effort benefiting wildlife, hydrology, vegetation management, and fuels reduction.
- NEPA analysis continued in 2011 and 2012. The NEPA decision is anticipated in the fall of 2012.
- In 2010 and 2012, some additional survey work was completed by the Forest's summer wildlife crew for flammulated owls and northern goshawk and the NEPA analysis process continued.
- Follow-up survey in 2008 (and in 2009) was completed to gather habitat and reproductive data for the northern goshawk nest site in this project; in addition further flammulated owl surveys occurred.
- NEPA analysis for this project initiated in 2007
- Baseline wildlife surveys conducted in 2006 and 2007.
- Sensitive species documented in the project include white-headed woodpecker, pileated woodpecker (management indicator species), flammulated owl, and northern goshawk
- Camera bait-station surveys did not detect any rare furbearers.
- Restoration of ponderosa pine habitat and fire processes in the southwest portion of this project area is a priority.
- Benefits to wildlife species will result from thinning stands that are currently denser than they were historically.

Third Pole Integrated Watershed Restoration Project:

- Approximately 1,400 acres of habitat improved so far.
- Collaboration of multiple resources including wildlife, watershed, fisheries, recreation and range to improve habitat in the Upper Squaw Creek watershed.
- Wildlife habitat is being improved by closing roads, closing, improving and relocating dispersed recreation sites, improving riparian fencing, and re-vegetating stream banks in the Third Fork and main stem Squaw Creek stream systems.
- No further work occurred in 2010.
- In 2009, two gates were installed on roads managed as year-long closures.
- 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).
- Analysis completed in 2007.

- Decommissioned roads were signed as closed to motorized vehicles and either re-contoured and/or ripped or left to natural reclamation.
- Seed and straw mulch were applied to disturbed portions to encourage revegetation.
- Approximately 1,400 acres of habitat improved.

Idaho City RD

Becker Vegetation Management Project (NEPA):

- Multi-resource effort for wildlife and vegetation restoration of ponderosa pine and mixed conifer forest communities.
- Project will reduce uncharacteristic stand densities and begin to restore vegetative conditions to their historic range.
- In 2011, NEPA analysis for this project continued. A NEPA decision is anticipated in late FY13 or early FY 2014.
- In 2009, 13 flammulated owl stations were surveyed in the project; two owls were detected.
- Field data collected in 2008 for flammulated owls.
  - 134 calling stations surveyed covering 12,763 acres
  - Eighty-one flammulated owls detected
  - Goshawk surveys were completed for 13 stands (319 acres); no birds detected.
  - Surveys for wildlife snags (potential nest trees for flammulated owls) were conducted on 1,197 acres (27 stands)
  - Eighty-seven snags were marked as wildlife trees

Coulter Project (NEPA):

- Multi-resource effort for wildlife and vegetation restoration.
- In 2010, there was no further fieldwork on this project.
- In 2009, 46 points surveyed for goshawk (sensitive species)
  - Twenty-two calling stations were surveyed for flammulated owls
  - Thirteen birds were detected
- In 2008, data collection conducted on 4,123 acres
  - 87 stands surveyed for wildlife habitat

Little Ophir Project (NEPA):

- In 2010, additional flammulated owl surveys were conducted in the project area and the NEPA analysis was completed.
- In 2009, surveys conducted for northern goshawks and flammulated owls.
- One goshawk nest was found in the project.
- Additional goshawk surveys conducted to determine use of the area by this species.
- Sixty-three stations called for northern goshawks; no further detections were recorded.
- Forty-five flammulated owl calling stations were surveyed; 25 birds were detected in the project. Snag surveys were conducted throughout the project area.

Cascade RD

Johnson Creek Watershed Improvement Project:

- Historically, the Johnson Creek drainage is an important elk and deer rearing area and provides summer range. The broken topography, mosaic of foraging and cover habitat created by recent wildfire activity and the relative remoteness are probable contributing factors.
- The primary wildlife objective is to decommission approximately 27 miles of existing roads.

- Project is a partnership with the Nez Perce Tribe.
- Road decommissioning would primarily occur within the Burntlog drainage, but would also occur in lesser amounts within the Riordan, Lunch, Trout, and Sheep Creek drainages.
- Approximately half of the road decommissioning (13 miles) was completed in FY 2011, while the remaining half is anticipated to be completed in FY 2012. Realized targets were 68 acres in FY 2011 based on business rules of 5 acres of target per 1 mile of decommissioned road, however, closure of these miles effectively improved approximately 4,300 acres of big game habitat. The remaining miles to be decommissioned will be claimed in FY 2012 upon completion of the project.

Johnson Creek Meadow Project:

- This project coincides within the larger Johnson Creek Watershed Improvement Project.
- The objective of the Johnson Creek meadow treatment is to remove small diameter seedlings and saplings within the meadow perimeter in order to maintain these special habitat features in the long term. The Forest Plan provides direction regarding the maintenance of meadows specific to Management Area 20, Upper Johnson Creek, the management area in which the meadow component of this project occurs (Boise NF LRMP 2010, p III-339).
- 50 acres of meadow enhancement was accomplished in FY 2011.
- It is anticipated that 50 acres will be completed in each of the next 2 fiscal years, for a total of 150 acres upon project completion.

Spruce Creek Project:

- 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 is anticipated to resume in FY 2014.

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

Accomplishments:

On the Cascade RD, updating and management of the District sightings database and spatial layer was completed in 2011.

In 2010, the Forest was able to fund a position on the Lowman RD for 10 days to enter observation data into NRIS Wildlife. This resulted in current year data for all five RDs being entered into the database, and initiation of legacy data entry for the Lowman RD. Records are located at the RDs in various filing systems. The Forest continues to struggle with sufficient staffing and funding to complete data entry into what was formerly called FAUNA and is now called WILDLIFE. In the interim, individual Districts have continued to maintain District databases. On the Lowman RD, all old survey and sighting records for documentations of threatened, endangered, sensitive, 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 NRIS WILDLIFE corporate 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: *Work with Idaho Department of Fish and Game to address their species plan objectives when Forest Service management activities may affect those objectives. 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.*

Accomplishments:

The Forest worked with IDFG from 2008 to 2010 to ensure appropriate components of the Idaho State Comprehensive WCS are incorporated or referenced in the upcoming Forest Plan amendment to include a WCS.

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 401C, 487, and 467A road systems. This area burned in 2003, and as a result, elk hiding cover is currently severely limited within this drainage. The 487 and 467A roads 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.

The 401C road was evaluated for re-contouring but is visible for greater than a quarter mile in length and has some live regeneration in the road prism that was beneficial to retain. Instead, ponderosa pine, Douglas fir, and Engelmann spruce saplings were planted on approximately 2 acres between the paved 474 road and the open view of the 401C road. The area will be monitored for unauthorized access.

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 is the Dollar Creek component. The primary objective of the Dollar Creek Road decommissioning portion is to decommission approximately 18.4 miles of existing spur roads within the Dollar Creek subwatershed. This would significantly reduce elk, mule deer and other wildlife species' vulnerability within the watershed from unauthorized off-road vehicle (ORV) access that is occurring on these closed roads. Work completed in FY 2009 includes some road decommissioning in the Dollar Creek area. Remaining decommissioning activity will be completed in FY 2010.

Objective: *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.*

Accomplishments:

Mountain Home Ranger District Access Management
Hunter patrols were conducted on the Mountain Home RD in 2010 and 2011 to evaluate compliance with motor vehicle use rules. The purpose of hunter patrols is to educate the public on rules and regulations for NFS lands, improve public relations with hunters, help hunters to have an enjoyable experience hunting NSF lands, and to take corrective action on users not following rules and regulations. Compliance with motorized use rules is important to managing wildlife habitat quality and impacts from

human disturbance. Personnel from the Ranger District conducted patrols in high use areas and areas of constant infractions. Personnel worked in teams or individually, depending on comfort with the public, to check camps for violations and provide the users with MVUM and an explanation of the map and what information it contains so they can recreate on the Forest without violating regulations. Violators are contacted and issued violation notices and provided with reasons for the violation and, if possible, educated on how to avoid future violations. Hunters are contacted at trailheads, game check stations, camps, turn outs, District Office, and closure areas by District personnel. Hunter patrols are conducted in cooperation with IDFG personnel conservation officers.

A closed road that had six violations in 2010.


Unauthorized motorized use.

Cascade Ranger District Access Management

The South Fork Salmon River Recreation Access Management Project on the Cascade RD is a large-scale project with multiple smaller implementation components, one of which is the Dollar Creek component. The Dollar Creek drainage, its headwaters, and small high elevation basins have historically been an important elk and deer rearing area. The broken topography, mosaic of foraging and cover habitat created by recent wildfire activity, and the relative remoteness are probable contributing factors. 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 both horseback and walking elk hunters during the bow and rifle seasons. Hunting camps are commonly present downstream from the North Fork Dollar Creek from August through October. ORVs have been accessing much of this area, including areas that are not open to that type of use. In 2007, this area was extensively burned in the Cascade Complex Fire. Because much of the area burned at high and moderate severity, the fire killed the vegetation and removed the down woody material which provided visual screens and physical barriers to the closed routes. These conditions facilitated more unauthorized motorized access over much of the area.

The Dollar Creek Road decommissioning portion of the SFSR Recreation Access Management Project decommissioned approximately 18.4 miles of existing system roads in 2010. This reduced elk, mule deer, and other species' vulnerability to human disturbance within the watershed. An additional benefit of this project was discontinuing access to areas experiencing unauthorized ORV use. Many wildlife species will benefit from the closure, including snag dependent birds and mammals, denning mammals, nesting birds, upland game birds and raptors, all through decreased disturbance from motorized use.

Lowman Ranger District Access Management

Management of road and trail closures for the benefit of wildlife and other resources is multi-funded by the wildlife, recreation, engineering, and noxious weed programs on the Lowman RD. Gates are opened and closed on an annual basis for seasonally closed roads. Specific benefits include reducing disturbance to wildlife during vulnerable periods of their life and/or to improve 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. Gates, barriers, and signs were checked in 2011for effectiveness and travel management signs and gates were repaired and maintained. Gates on seasonal closures were opened or closed. Information was shared with other personnel involved in road management and public contacts. Several incidences of travel management violations were observed in 2011 and individuals were contacted and provided with information as to the reason for closures and the benefits to wildlife. An increase of snowmobile activity within the winter range closure was noted, which resulted in a combined educational, signing, and enforcement effort to be initiated in FY 2012.

Lowman Ranger District Winter Travel Management

The Winter Travel Management project is located across the Lowman RD. Over-snow vehicle travel is not covered under the current MVUM resulting in confusion about appropriate winter travel and use. Several areas and roads on the District were closed to over-snow vehicle travel prior to implementation of the Travel Management Rule. These closures are for the protection of wildlife and include reducing disturbances on winter and spring ranges as well as reducing vulnerability of big game during the hunting season.

The objective of the project is increased public awareness of and need for winter travel restrictions, and to provide a means for enforcement of winter travel restrictions should it be needed. The last Travel Map/Special Order prior to implementation of the Travel Management Rule and subsequent MVUMs was used to create a Special Order and Winter Information Map for over-snow vehicles on the District in FY 2011. Other components of the project (educational articles, interpretive signs, and road/area signs) have been delayed due to the lack of funds.

This is a multi-year project. With full implementation, the expected result is that public awareness of winter over-snow travel restrictions and reasons would be improved, as hopefully, would be the compliance with the restrictions. This would reduce impacts to species such as deer and elk in support of long-term maintenance of habitat and local populations.

VEGETATION RESOURCES

OBJECTIVES (Forest Plan, page III-30)

Objective: *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

Accomplishments:

In 2008 and 2009, approximately 460 acres of western larch were planted on the Cascade RD. The Lowman RD is 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. The Boise NF completed the Lime Creek Aspen Restoration Project on the Mountain RD. Efforts to restore whitebark pine 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.

Objective: *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.*

Accomplishments:

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:

- A draft classification developed in the spring of 2011 is being field tested.
- Pilot study completed in 2008.
- Data collection for this project, initiated as a pilot study in 2002.
- 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).
- This project will also help collect information about habitat for mountain quail, a sensitive species on the Boise NF. Survey efforts indicate mountain quail populations on the Forest are nearly extirpated.

Upland Non-Forest Classification and Inventory Project

In partnership with the CDC and the Sawtooth NF, the Boise NF is implementing an Upland Non-Forest Classification and Inventory Project on the Boise and Sawtooth NFs:

- Funding was provided to integrate this additional information and refine the classification, which is expected to be completed in 2011.
- 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.
- The classification was field tested summer of 2009 resulting in establishment and data collection from additional sample plots.
- A final classification completed in 2008.
- An interim classification was completed in 2004.
- Work on this project was initiated in 2002.

- 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.
- The Forest also initiated work on a non-forested vegetation field inventory that will supplement the current forested vegetation field inventory.
- 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 reinventory every 10 years based on a resampling of 10 percent of the established plots per year.

Boise Front Sagebrush Ecosystem Project

- In 2010-2011, the new inventory and classification process continues to be field tested.
- In 2008, a final report was completed on study related Sagebrush Habitat Inventory and Classification.
- 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. This area stands out because of its proximity to human development and disturbances, frequent fires over the past 40 years, the amount of rare plant and animal species, and its importance as 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: *Determine high-priority areas for vegetation management actions that restore or maintain vegetation desired attributes.*

Accomplishment:

As a component of the amendment to the 2010 Forest Plan, the Forest developed a *Vegetation and Wildlife Habitat Restoration Strategy*. 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. In addition, priority areas were identified for restoration of aspen, western larch, and whitebark pine through objectives added to the appropriate Forest Plan Management Area.

Objective: *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.*

Accomplishments:

Draft maps displaying dominance types for the Forest's update to existing vegetation layers under the *Integrated Vegetation Classification, Mapping & Field Inventory Project* were reviewed in July and August 2011 by personnel from each Ranger District. The contractor made revisions to the dominance types in fall 2011. The revised maps will be used to develop tree size class and shrub and tree canopy cover classes to be delivered to the Forest in FY 2013. These maps will replace the "refreshed" mid-scale data used for the 2010 Forest Plan amendment. Forest personnel collected data on the Field Inventory Intensified Grid (B-grid) in 2009, 2010, and 2011. Data is collected each year on 10 percent of the plot locations in order to maintain the 10-year full collection cycle. This information is used to supplement data collected by the Forest Inventory and Analysis (FIA) unit (A-grid) located in Ogden, Utah.

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 3 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[15] 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 under burns that burned understory vegetation but did not kill larger over story trees, to high severity/intensity burns in which both understory vegetation and large over story trees were killed.

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 are being 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 the fall of 2012. Table 2 summarizes products to be acquired or developed.

Table 2. Timeline for Integrated Vegetation Classification, Mapping, and 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

The mapping unit keys and other necessary data collection products including field forms and protocols were developed during the winter 2008. Data collection started in the Payette NF and northern portions of the Boise NF in summer 2009 and was completed on both forests in fall 2010. On the Boise NF, a total of approximately 7,000 data collection points were established. Of these, 19 percent were field visited, 61 percent were observational plots collected from a distance, and 20 percent were photo-interpreted. Map unit segments are expected to be derived for both Forests during winter 2010 with draft map products to be reviewed summer 2011.

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

In addition to this long-term product, the Forest Supervisor chose 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 Forest Plan amendment 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. Tree Size Acres Class by Canopy Cover Class in 2003 vs. 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" through 2011 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.

BOTANICAL RESOURCES

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

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

Accomplishments:

The Forest Watch plant list was reviewed in 2011, and no additional species were added to the list. *One species – Whitebark Pine (Pinus albicaulis) -- was elevated in status to a Regional Sensitive species and a Federal Candidate species in 2011.*

The Forest Watch plant list was reviewed in 2010, and no additional species were added to the list. *However, one species -- Sacajawea's bitterroot (Lewisia sacajaweana)* -- was elevated in status from Forest Watch to a Regional Sensitive species in March 2010.

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: *Carex aboriginum* (Indian Valley sedge). 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: *Encourage participation from Forest employees, the public and other agencies in a collaborative Celebrating Wildflowers program to promote the importance of conservation and management of native plants and plant habitats.*

Accomplishments:

In 2011, Boise NF botany staff coordinated and presented several nature walks and native plant programs for the public. These collaborative "Celebrating Wildflowers" programs were attended by hundreds of people and involved partners including the Idaho Master Naturalists, City of Boise, IDFG, Be Outside Idaho (Idaho Children & Nature Network), and Bogus Basin Mountain Recreation Area.

At the Idaho City RD office, signposts and a dry streambed were installed in the newly revamped "Firewise with Natives" garden. The garden features numerous native plants that are beautiful as well as water thrifty, thus, encouraging the public to conserve water and attract pollinators by landscaping with native wildflowers.

Plant ID Sign, ICRD Firewise Garden


Western Columbine, ICRD Firewise Garden

In spring 2010, Boise NF botany staff presented several nature walks and native plant programs for the public in the Boise area. These collaborative "Celebrating Wildflowers" programs involved various partners including the Idaho Botanical Garden, Idaho Master Naturalists, IDFG, and FWS. The positive response from the community was overwhelming, since nearly 400 people participated in these popular events.

Objective: *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.*

Accomplishments:

Douglasia idahoensis (Idaho douglasia), a Region 4 Sensitive species, is endemic to Idaho. Approximately two-thirds of the populations of this species occur on the Boise NF. *Lewisia sacajaweana* (Sacajawea's bitterroot) is also a Sensitive species and Idaho endemic; three-fourths of the known sites for this rare plant are found on the Boise NF.

In 2011, we worked cooperatively with staff and volunteers from the Idaho Botanical Garden to collect seed for both *Douglasia idahoensis* and *Lewisia sacajaweana* as part of the long-term Imperiled Plant Species Genetic Conservation project.

This included updating the status of populations that have not been surveyed in several years. Seed was sent to the National


Idaho Douglasia Seed Phenology Check, Swanholm Peak, September 2011.

Seed Lab for processing and accession into the ARS long-term storage lab in Ft. Collins, Colorado. These high elevation rare plant species were top priorities for this project due to their potential sensitivity to global climate change.

In 2009, assessment completed for *Douglasia*, a Region 4 sensitive species endemic to Idaho. Habitat protection measures such as reducing impacts from off-highway vehicles will be implemented as needed.

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

Nearly two-thirds of the populations of this species occur on the Boise NF. Over the past several years, in partnership with the Idaho CDC, the Boise NF has been working on a status assessment for *Douglasia idahoensis*. As part of this effort, botanists from Boise NF and CDC visited numerous *Douglasia* sites on the forest, and documented population size, area and condition, range expansions, habitat quality and potential, threat potential and imminence, and associated species and plant communities.

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.

Objective: *Cooperate with researchers, ecologists, geneticists, and other interested parties to develop seed zones or breeding zones for native plants. 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.*

Accomplishments:

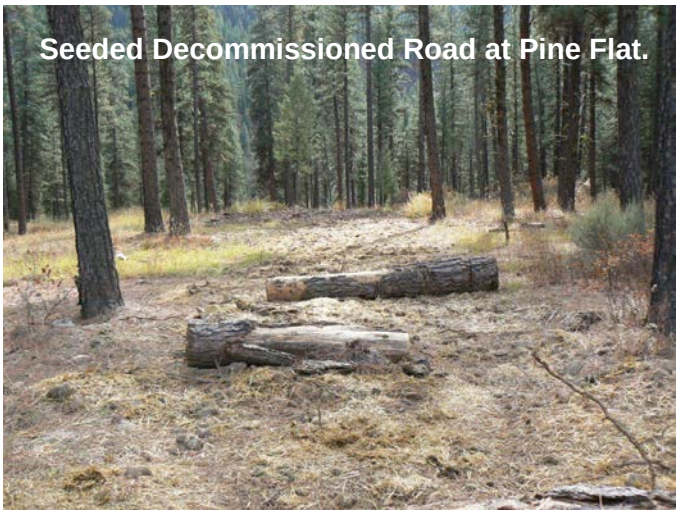
In partnership with the Idaho CDC and Lucky Peak Nursery, the Boise NF is implementing a native seed collection project on the Forest. Dozens of IDFG volunteers have contributed to the success of this project. Since the project was initiated in 2002, we have collected over 820 pounds of raw seed, resulting 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 continued through spring of 2012. 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.

In 2011, volunteers collected 389 pounds raw seed from a total of 33 different species, accruing a total of 591 volunteer hours. Native plant materials were used in restoration projects at Tennessee Creek and MP25 Culverts, Pine Flat Road Decommissioning, and Mores/Grimes Creek Stream Restoration.

Sulfur Buckwheat Harvest at Lucky Peak

Seed Collection Bear Valley

Seed Collection Upper Trinities



Seeded Decommissioned Road at Pine Flat.

NON-NATIVE PLANTS

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

Objective: *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.*

Accomplishments:

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 2012, a new process for mapping and recording infestation and treatment data was implemented by the Forest Service. This process should allow for more accurate site and infestation information, as well as track treatment effectiveness. This will be discussed in detail in the FY 2012 monitoring report that will be released September 2013.

In 2011, the Boise NF cooperated 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 amount of acres infested on the Boise NF include rush skeletonweed, spotted knapweed, Dalmatian toadflax, and Canada thistle. Rush skeletonweed is a species of particular concern, primarily because an estimated 100,000 acres or more in the Boise NF, and over 3 million acres in Idaho are infested with this species. The Boise NF cooperatives 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 2010, the Boise NF cooperated 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. 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 2007-2009, 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.

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 data was compiled in FYs 2008 and 2009.

Table 4. Noxious Weed Acres Infested and Treated: 2004-2011 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
2010						
Infested	6,738	70,909	475	5,926	10,637	94,685
Treated	1,734	2,388	292	1,060	1,022	6,496
2011						
Infested	6,829	70,909	475	9,349	10,691	98,253
Treated	1,399	2,059	742	1,508	879	6,587

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: *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:

The Forest uses prescribed fire for restoration, wildlife habitat enhancement, and hazardous fuels reduction.

Between FYs 2008 and 2011, the Boise NF completed approximately 30,009 acres of fuels treatments, about 74 percent or 22,490 acres were treated using 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.

Since 2007, the Forest has treated a total of 22,490[16] acres with prescribed fire:

- 2011 – 1,603 acres treated
- 2010 – 5,461 acres treated
- 2009 – 5,204 acres treated
- 2008 – 10,222 acres treated

Prescribed fire has been utilized by the forest for a number of years, in the low elevation ponderosa pine habitat the fire return interval ranges from 5-25 years. In FY 2010, the Emmett RD implemented the 2,349 acre Poorman Maintenance burn; this project area had been burned 12 years prior. This is the first re-entry burn the Forest has completed to restore the fire return interval. There are many more previously burned areas which are entering the fire return interval range and the Forest will continue to look for and capitalize on opportunities like Poorman. The Poorman burn received Rocky Mountain Elk Foundation grant monies for implementation as this area is winter forage habitat. Monitoring completed last spring shows bitterbrush responded well to the burning as there was a large amount of re-sprouting that occurred in decant shrubs. 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).

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 (4,700 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).

[16] The data used to monitor Forest progress towards meeting fire- and fuels-related Forest Plan objectives is from the Forest Activity Tracking System (FACTS). 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. During FYs 2008-10, the forest was able to count acres treated by fires with resource benefit objectives. These acres are not included in the above acres treated, but are accounted for elsewhere in the monitoring report.

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.

Objective: *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.*

Accomplishments:

In 2011, the Forest managed one wildfire for resource benefit objectives. The Castro Fire on the Lowman RD burned 4,480 acres.

In 2010, the Forest implemented one wildfire for resource benefits (WFU) for a total of 5,450 acres. This fire, called the Little Beaver Complex, was located on the Lowman RD at the boundary between the Boise NF and the Frank Church–River of No Return Wilderness.

In 2010, the amendment to the Forest Plan re-designated all acres assigned to Management Prescription Category (MPC) 5.2, the only MPC that contained prohibitions against "WFU" to MPC 5.1, which allows "WFU". This affected approximately 400,000 acres (18 percent) of the Forest. Eliminating MPC 5.2 by itself did not alter where "WFU" can occur since this is based on the "Wildland Fire Use Planning Area".

In February 2009, the National Fire Executive Council (which includes the Forest Service) issued the "*Guidance for Implementation of Federal Wildland Fire Management Policy*" to replace the "*Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy"* issued June 2003. The primary changes that resulted from the 2009 *Guidance* relative to the Boise's current Forest Plan relate to terminology, specifically wildfire and wildland fire use for resource benefits. The current Forest Plan uses the terms "prescribed fire", "wildland fire", wildland fire use (WFU) for resource benefits", "wildfire", "WFSA (Wildland Fire Situation Analysis)" and "WFIP (Wildland Fire Implementation Plan)". Per the 2009 *Guidance* there are now only two types of fire: 1) prescribed fires (planned ignitions); and 2) wildfires (unplanned ignitions). Wildfires can be managed for "protection" where actions would be undertaken to limit the adverse environmental, social, political, and economical effects of fire, and "resource management objectives" as allowed by the Forest Plan. Currently, the Boise National Forest has been using wildland fire to meet management objectives in locations defined in the 2003 Forest Plan as the "Wildland Fire Use Planning Area".

In FYs 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 1 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.

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.

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.

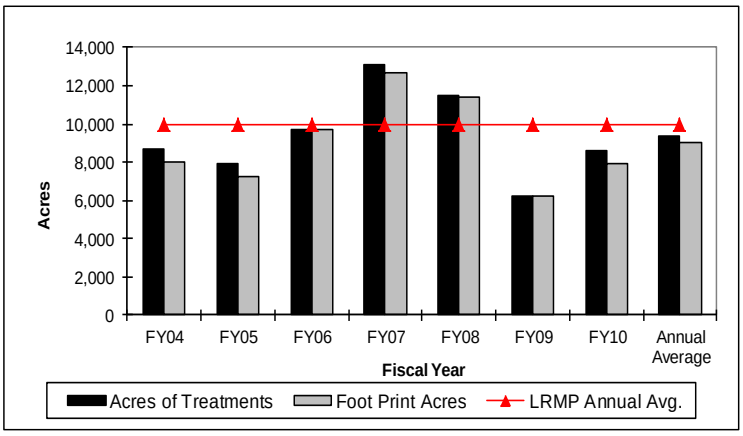
Objective: *Schedule and complete at least 100,000 acres of fuels management through prescribed fire and mechanical treatments in the next decade to achieve desired vegetation attributes and fuel reduction goals. Focus on wildland/urban interface (WUI) and areas in Fire Regimes 1, 2, and 3 (non-lethal,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

> *NOTE – This objective was updated in the 2010 Forest Plan amendments and thus is only reported through FY2010. The new, updated, objective immediately follows, and will be the focus of future reporting.*

Accomplishments:

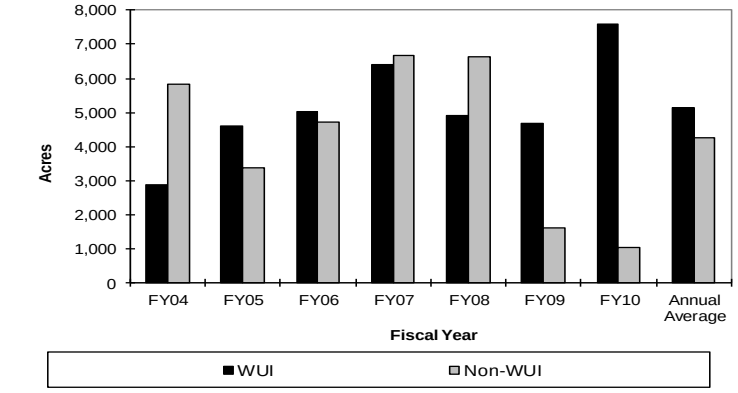
From FY 2008 through FY 2010, the Boise NF conducted 26,410 acres of hazardous fuel treatments (Figure 3). The total acres treated were slightly less at 25,580 because multiple treatments can occur on the same acre (referred to as the "foot print" acres). Though acres treated were greater than the LRMP average annual in FY 2008 and less than the LRMP average annual in FY 2009 and FY 2010, the average over the past 6 years (FYs 2004-2010) is close to the LRMP average.

Figure 3. Hazardous Fuels Accomplishments: FYs 2004-2010



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 2008, more acres were treated outside the WUI. In FYs 2009 and 2010, acres treated in the WUI were much greater (Figure 4). 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 4. Hazardous Fuels Accomplishments on WUI and Non-WUI Acres: FYs 2004-2010



The data used to monitor Forest progress toward 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: *On a decadal basis, schedule and complete at least 50,000 acres of hazardous fuels reduction and maintenance treatments within the wildland urban interface (WUI).*

Accomplishments:

As identified under the previous objective, this is the new objective for hazardous fuel reduction found in the 2010 Forest Plan amendment and will be what is compared in future monitoring reports. The Forest completed 5,745 acres of treatments in the WUI in FY 2011, which was slightly over the annual average of 5,000 acres per year needed to meet the decadal objective. The bulk of the treatments (73 percent) were timber stand improvement, which also included mulching/mastication and biomass removal in addition to thinning. Prescribed fire made up most of the remaining treatments.

Table 5. FY 2011 Accomplishments for Objective FMOB04.

Objective	Activities	Based on objective	
		Objective (Annual Average)	FY11
FMOB04		5,000	
FMOB08	Prescribed fire		1,450
TROB01	Timber harvest (live vegetation)		125
			4,170
Total		5,000	5,745

Objective: *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.*

Accomplishments:

The Forest continues to concentrate fuels treatments to reduce fuel loadings around WUI areas.

During FY 2008 through FY 2011, the Forest treated approximately 30,010 acres, of which 20,585 acres or 68 percent were located within the WUI. In FYs 2010 and 2011, the Forest had a majority of the implementation occurring within the WUI. The Mountain Home, Lowman, and Cascade RDs implemented projects to protect communities of interest such as the Fall Creek subdivision and The Bogus Basin Ski Resort infrastructure on Mountain Home and the Bear Creek and Wapiti summer homes on Lowman and the rural mountain community of Yellow Pine, which is identified as a community at risk, located on the Cascade RD. These four projects totaled 2,882 acres and were a combination of thinning and piling and pile burning, mastication, and under burning to reduce fuel loadings and fire hazards near WUI areas.

The Forest falls into four counties, Boise, Valley, Elmore, and Gem. The Forest actively participates or is represented on each counties working group. Each year as the counties update or make amendments to their plans, the Forest is collaborating with the counties to ensure project coordination, which is crucial to the counties receiving grant monies, is occurring. The Valley County Wildfire Mitigation Group has been extremely successful in receiving grant monies and has collaborated with the Cascade RD on several WUI projects. In FY 2010, the county received Stevens Funds to treat 236 acres on the west side of Lake Cascade. In FY 2011, the county received Community Fire Protection grant monies to complete 460 acres of fuels reduction work in and around the YMCA camp and homes adjacent to the Horsethief Reservior. These treatments are adjacent to WUI projects the District is currently trying to implement or are currently in the planning phase on.

The Forest continues to work 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 2007, 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 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.

Objective: *On a decadal basis, use prescribed fire to treat at least 100,000 acres.*

Accomplishments:

This objective, FMOB08, was added through the 2010 Forest Plan amendment and will be what is compared in future monitoring reports. As displayed in Table 6, the prescribed fire accomplishment in FY 2011 was well below the annual average to meet the decadal objective. This was due primarily to a lack of suitable weather conditions (referred to as burning windows). The spring weather was unusually

wet and cool until late into June, well past an acceptable time period for applying prescribed fire and the fall was unusually warm and dry late into November. Accomplishment of the annual average acres of prescribed fire requires a specific set of weather and fuel conditions several days in a row which do not occur in some years across the Forest.

Table 6. FY 2011 Accomplishments for Objective FMOB08.

Objective	Activities	Based on Objective	
		Objective (Annual Average)	FY 2011
FMOB08	Prescribed Fire	10,000	1,610

TIMBERLAND RESOURCES

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

Objective: *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.

NOTE – This objective was updated in the 2010 Forest Plan amendments and thus is only reported through FY2010. The new, updated, objective immediately follows, and will be the focus of future reporting.

Accomplishments:

From 2004 through 2010, about 25,040 acres of timber harvest were offered and sold across the Boise NF. However, harvest was completed on only 15,890 acres or an average of 2,270 acres per year (Table 7), which is below the level described in the objective. The difference between the acres offered and sold and the acres harvested is projects where harvest has started but not completed; where harvest was deferred or terminated due to market related contract term adjustments, contract cancellations or defaults; or where harvest was not initiated. In these cases acres sold from 2004 through 2010 will be reported as timber harvest per the objective in outyears once treatments have been completed.

The table shows the Forest's accomplishment in FY 2004 through FY 2010:

Table 7. Timber and Related Activities – FYs 2004–2010.

Activity	Unit of Measure	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	7-Year Avg.
Timber harvest *	Acres	5,461	258**	4,577	2,378	3,096	3,713	2,260	2,270
Reforestation	Acres	1,294	2,698	2,269	1,562	2,630	9,211	6,540	4,470
TSI***	Acres	5,912	7,390	5,710	6,210	7,221	8,386	10,680	7,500

*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: *On a decadal basis:*

a) *Harvest timber, other than by salvage, on an average of approximately 90,000 acres,*
b) *Reforest an average of approximately 20,000 acres, and*
c) *Complete timber stand improvement activities on an average of approximately 55,000 acres.*

As identified under the previous objective, this is the new objective found in the 2010 Forest Plan amendment and will be what is compared in future monitoring reports.

Table 8. Timber Harvest, Reforestation and Timber Stand Improvement for FY 2011.

Activities	Objective (Annual Average)	2011
Timber Harvest Completed *	9,000	1,270
Reforestation	2,000	6,670
Timber Stand Improvement	5,500	6,470
Total	16,500	14,410

* *"Completed" means the timber was removed from the harvest units, as opposed to the timber being sold.*

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

NOTE – This objective was updated in the 2010 Forest Plan amendments and thus is only reported through FY2010. The new, updated, objective immediately follows, and will be the focus of future reporting.

Accomplishments:

The table shows the Forest's accomplishment from FYs 2008-2010:

Table 9. Timber Volume (MMBF) Contributing to Allowable Sale Quantity (ASQ) FYs 2004–2010.

Activity	Objective (Annual Average)	2004**	2005**	2006**	2007**	2008	2009	2010
Timber Volume Offered *	45.0	21.7	14.9	30.9	20.8	22.9	13.5	.02

**Million board feet*
***In FY 2004 and FY 2005, ASQ accomplishment was based on volume offered (i.e., made available for sale). In FY 2006 and subsequent years, the unit of measure changed to volume sold.*
In FY 2004, the total volume included 14.3 MMBF green and 7.4 MMBF salvage.
In FY 2005, the total volume included 14.5 MMBF green and 0.4 MMBF salvage.
In FY 2006, 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 2006). 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: *On a decadal basis, make available an estimated 282 million board feet of timber which will contribute to Allowable Sale Quantity (ASQ).*

As identified under the previous objective, this is the new objective found in the 2010 Forest Plan amendment and will be what is compared in future monitoring reports.

Table 10. Timber Volume (MMBF) Contributing to Allowable Sale Quantity (ASQ) FY 2011.

Activity	Objective (Annual Average)	2011
Timber Volume Offered *	28.2	2.3

**Million board feet*

Objective: *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.*

> *NOTE – This objective was updated in the 2010 Forest Plan amendments and thus is only reported through FY2010. The new, updated, objective immediately follows, and will be the focus of future reporting.*

Accomplishment:

Table 11. Total Sale Program Quantity Accomplishment – FYs 2004–2010.

Activity	Unit of Measure	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10
Fuelwood, posts, houselogs, etc.	MMBF*	4.2	3.1**	3.7**	3.5	6.8	6.6	6.2
Timber sold (ASQ contribution)*	MMBF	21.7	14.9	26.1	11.1	8.0	20.1	5.3
TOTAL	**MMBF**	**25.9**	**18.0**	**29.8**	**14.6**	**14.8**	**26.7**	**11.5**

*From Table 5.
** 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.

Objective: *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 115 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 397 million board feet.*

As identified under the previous objective, this is the new objective found in the 2010 Forest Plan amendment and will be what is compared in future monitoring reports.

Accomplishments:

The table shows the Forest's accomplishment in FY 2011:

Table 12. Timber Volume (MMBF) Contributing to Total Sale Program Quantity (TSPQ) FY 2011.

Activity	Unit of Measure	2011
Timber sold (ASQ contribution)*	MMBF	.005
Fuelwood, posts, houselogs, etc. **	MMBF	6.2
TOTAL	MMBF	6.2

**Volume offered is greater than volume sold due to the Ophir-Clay sale being offered in the 4th quarter of fiscal year 2011, but not actually awarded (sold) till 1st quarter fiscal year 2012.*

*** Includes commercial fuelwood contracts (not included with permits in Element 23)*

RANGELAND RESOURCES

Objectives (Forest Plan, page III-44)

Objective: *During fine-scale analyses where rangeland facilities are identified as a potential concern or problem contributing to degrading resource conditions within the analysis area, identify rangeland facilities that are degrading resource conditions and prioritize opportunities to mitigate their effects or to initiate restoration of resource conditions.*

Accomplishments:

Wildlife Escape Ramps in Livestock Water Developments on the Mountain Home Ranger District

In 2011, the District wildlife biologist identified specific water developments (tire troughs and aluminum troughs) in livestock allotments that needed escape ramps or that had ramps in need of repair. Escape ramps provide safe egress for small mammals, birds, reptiles, and amphibians that have become trapped in water developments. The escape ramp design was developed by range staff on the Forest and the ramps were made in partnership with Job Corps students and seasonal employees. Completed escape ramps where then issued to permittees for placement in water developments. The District wildlife biologist then reviewed several of the installed ramps to ensure proper placement had occurred. Since installation, there has been a reduction in wildlife mortality caused by entrapment of small mammals, reptiles, and amphibians in water developments.

MINERALS AND GEOLOGY RESOURCES

Objectives (Forest Plan, pages III-48 to III-49)

Objective: *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.*

Accomplishments:

As in 2004 through 2009, the Boise NF continued to utilize in 2010 and 2011 its standardized inspection/monitoring report to review mineral development areas to determine consistency with management direction in the Forest Plan, as amended in 2010. 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. Follow-up 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 and has continued this process through 2011. This practice has proved valuable in identifying and then 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: *Analyze road system needs and associated resource effects in accordance with the established agency policy direction for roads analysis.*

Accomplishments:

Travel management decisions are identified through project level NEPA documents, including the associated resource effects of roads. Authorized and unauthorized roads are evaluated and unneeded roads are identified.

Project level analyses, Travel Analysis Process (formerly Roads Analysis), condition surveys, and identified safety hazards are all considered when determining maintenance priorities. The Forest prioritizes maintenance of system roads annually and documents this through annual maintenance plans.

Established agency policy for analyzing road and bridge system needs and whether they provide for public safety is found in Forest Service Manual (FSM 7700) and Forest Service Handbook (FSH 7709). For example, bridges are on a 2-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).

Following is a summary of the Boise NF transportation system changes from 2004-2011. As is displayed, the miles of operational maintenance levels 3, 4, and 5 roads has been relatively constant over the years while the mileage of maintenance level 1 and 2 roads has decreased; primarily due to road decommissioning activities and jurisdictional clarification in the IWEB database. In 2011, approximately 466 miles of levels 3, 4, and 5 roads and 391 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 2011, the Boise NF transportation system included 4,565 miles:

- Approximately 697 miles of operational maintenance levels[17] 3, 4, and 5 roads
- 2,306 miles of operational maintenance level 2 roads
- 1,560 miles of operational maintenance level 1 roads
- In 2011, approximately 466 miles of levels 3, 4, and 5 roads and 391 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.
- In 2011, one bridge was reconstructed. Mores Creek bridge (329-0.1) timber beams and timber decking were replaced with a new prefabricated steel superstructure that would carry highway legal loads.

At the end of FY 2010, the Boise NF transportation system included 4,739 miles:

- Approximately 712 miles of operational maintenance levels[18] 3, 4, and 5 roads
- 2,377 miles of operational maintenance level 2 roads
- 1,650 miles of operational maintenance level 1 roads
- Total of 125 bridges (increase compared to recent years due to bridge replacements and jurisdictional clarification)
    - Five new bridges constructed:
        - Silver Creek bridge #2 (671E-1.1)
        - Silver Creek bridge #3 (671E-1.8)
        - East Fork Fall Creek bridge (129-3.5)
        - Mormon Creek (474-10.4)
        - Fawn Creek bridge (421-1.0)

In 2009 the following were added to the Boise NF transportation system:

- Three new bridges
    - The Trapper Creek bridge (440-2.5)
    - Ditch Creek bridge (410-3.8)
    - Mores Creek bridge
- The Middle Fork Payette River Bridge (698-12.0) and Silver Creek #1 bridge (671-6.5) were rehabilitated with new steel girders, decking, bridge railing, and approach railing.
- The jurisdiction of the Middle Fork Boise River Bridge near Riverside Campground (Road 205) was conveyed to the Atlanta Highway District.

[17] 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; whereas level 1 and 2 roads are local roads that feed into the level 3-5 roads.

[18] 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; whereas level 1 and 2 roads are local roads that feed into the level 3-5 roads.

In 2008, the following were added to the Boise NF transportation system:

- Four new bridges
- Rattlesnake Creek bridge (698-15.5),
- Fir Creek bridge (579-7.0)
- Lodgepole Creek bridge (474-8.9)
- Tributary to East Fork Burntlog Creek bridge (447-14.2.)

At the end of FY 2007, the Boise NF transportation system had approximately

- 710 miles of operational maintenance levels[19] 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
- 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.
- 111 bridges

In FY 2007, the following were added to the Boise NF transportation system:

- Two new bridges constructed:
  - Roaring River bridge (255-5.5)
  - East Fork Big Pine Creek (555-2.1)
- 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.

At the end of FY 2006, the Boise NF transportation system included 4,827 miles:

- 674 miles of maintenance levels[20] 3, 4, and 5 roads,
- 2,532 miles of maintenance level 2 roads, and
- 1,621 miles of maintenance level 1 roads
- 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.

In FY 2006, the following were added to the Boise NF transportation system:

- Two new bridges
  - Silver Creek Plunge bridge (671W1-0.1)
  - Renwyck Creek bridge (609-3.3).

[19] 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; whereas level 1 and 2 roads are local roads that feed into the level 3-5 roads.

[20] 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; whereas level 1 and 2 roads are local roads that feed into the level 3-5 roads.

In 2005, 27 of the 136 bridges had technical load ratings re-performed to determine if the structural load capacity met 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.

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[21] 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 discussed earlier.

Objective: *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.*

Accomplishments:

As in previous years, the Boise NF held coordination meetings with other agencies and partners in 2008-2011. In addition, a new Forest Road Agreement was signed with Glenns Ferry Highway District in 2010.

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, BLM, 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 (NFS Road 438) in Valley County, and 7.6 miles of the Swanholm Road (NFS Road 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).

[21] 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.

These easements complement those that were undertaken in FY 2006, 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: *Identify roads and facilities that are not needed for land and resource management, and evaluate for disposal or decommissioning.*

Accomplishments:

In 2011, approximately 12.4 miles of authorized roads and 4.2 miles of unauthorized roads were decommissioned. The decommissioned roads were primarily from the Johnson Creek Watershed Improvement Project (Cascade RD) decision in 2010.

In 2010, 7.0 miles of authorized roads and 2.0 miles of unauthorized roads were decommissioned. The decommissioned roads were primarily from the following projects/decisions: Third Pole Integrated Resources Project (Emmett RD), Lucky and Lightning (Middle Fork) Salvage Project (Emmett RD), and the Wapiti Blue Stewardship Project Roads (Lowman RD.)

In 2009, 36.4 miles of authorized roads were decommissioned.

In 2008, approximately 12.5 miles of authorized roads were decommissioned and removed from the Forest transportation system and 7.6 miles of unauthorized roads were decommissioned.

In 2007, approximately 3 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 2007, no buildings were intentionally decommissioned; however, three buildings burned in the Cascade Complex fire, including the Knox Ranch Lodge No. 1 (1040), Knox Ranch Log Dwelling (1041), and the Meadow Creek Toilet (1677).

In 2007, approximately 3 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, 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 BOR. 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.

In 2006, approximately 4 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.

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. Structures not listed in the FMP that have been additionally disposed are due to property loss experienced by fire or destruction by excessive snow loads. Thirty-four administrative facilities have been disposed since 2005.

Objective: *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.*

Accomplishments:

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 3 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 RMRSt to facilitate the culvert inventories. The SCA provided student interns to collect the data. A RMRS 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 RMRS 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.

In 2007, 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: Ann*ually update recreation databases for developed sites, dispersed areas, and trails.*

Accomplishments:

Trails are selected for condition survey at the national level, using a random sampling model. Developed recreation sites are on a 5-year rotating schedule for condition survey.

In 2011, five trails and five developed recreation sites were condition surveyed. One trail condition survey was not completed, but was completed in October FY 2012 and recorded in the INFRA database. All other condition surveys were completed and recorded in the INFRA database in FY 2011.

In 2010, 11 trails and 23 developed recreation sites on the Forest were condition surveyed. All assigned condition surveys were completed and the results reflected in the INFRA database.

In 2009, six trails were selected by the national sampling model. Sixty-five developed recreation sites were due for condition survey. All surveys were completed and recorded in the INFRA database.

In 2008, five trails were selected by the national sampling model for condition surveys. Forty-five developed recreation sites were due for condition survey. All surveys were completed and recorded in the INFRA database.

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

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.

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

Accomplishments:

The Forest has made improvements in relation to the American Disability Act and other related policy and direction in both developed recreation sites and administrative facilities. Many upgrades have been accomplished in developed recreation sites by replacing campsite furniture, installing accessible toilets, and improving pathways to meet accessible requirements.

In 2011, the Forest started renovated the Boiling Springs Guard Station to meet current accessibility standards. The popular recreation rental cabin now has a proper accessible ramp, 36-inch door openings with accessible hardware, fencing with accessible gate hardware, and well defined pathways with accessible surfacing. The Shafer Butte Picnic area was improved for accessibility as well as existing restrooms in the campgrounds. Pathways were redesigned and resurfaced and site furniture was replaced to improve access at the picnic area. Another significant improvement to accessibility was accomplished at the Garden Valley Work Center office. New accessible entry doors were installed in the main entry to provide improved access for both the public and for employees.

In 2010, the Forest reconstructed the Silver Creek Campground with an emphasis on accessibility. The entire site was designed and then constructed to be fully accessible including all site furniture, pathways, and buildings. Doorway widening, accessible threshold installations, and ramps have been installed in administrative facilities when existing facilities undergo major renovation. All new buildings are constructed to meet current guidelines and requirements.

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: *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.*

Accomplishments:

In 2011, during project level analysis, two site specific travel management decisions were made as a part of the White Flat Resource Management Project and the Upper South Fork Salmon River Resource Management Project.

The objectives of the Upper South Fork Salmon River Resource Management Project which relate to travel management are: (1) reduce road-related impacts and risks to water quality and fisheries resources while retaining a safe and efficient transportation system to meet current and future management, public access, and recreational needs; (2) reduce recreation impacts and risks by improving the trail system to provide public access and recreation opportunities while reducing unintended impacts to the environment. The decision included: (1) 1.3 miles of road designation; (2) 52.7 miles of road decommissioning; (3) five stream crossing replacements; (4) eight motorized or nonmotorized trail designations/improvements; (5) 41.3 miles of unauthorized route rehabilitation.

The objectives of the White Flat Resource Management Project which relate to travel management are: (1) reduce motorized use on authorized roads, unauthorized roads, and unauthorized trails in order to increase large snags and down logs, enhance wildlife security, and reduce the spread of undesirable non-native plants; (2) add unauthorized routes to the transportation system to provide access to frequently used dispersed campsites and reduce impacts from indiscriminate routes to the campsites. The decision included: (1) 2.2 miles of road closure or decommissioning of an unauthorized road; (2) decommissioning 1.8 miles of unauthorized trail; (3) restricting motorized traffic year-round on 2.0 miles of authorized road; (4) adding two existing unauthorized routes, each less than 300 feet in length, to the Forest transportation system to facilitate access to dispersed campsites.

MVUMs for all Districts were published in 2010. Two site specific travel management decisions were made as a part of the Bull Creek and Upper Silver Creek Motorized Trail Designation and Rehabilitation and the Johnson Creek Watershed Improvement Project. The Bull Creek and Upper Silver Creek Motorized Trail Designation and Rehabilitation changed the designation on two trails from open to vehicles 50 inches or less to open to motorcycles only, along with applying a seasonal closure for resource protection. Also, 0.2 mile of existing unauthorized trails were designated for motorcycle use to allow access to recreation campsites. The Johnson Creek Watershed Improvement Project decommissioned 30 miles of road, converted 3 miles of road to a motorized trail, and added 1.7 miles of spur roads to the road system to provide access to popular dispersed campsites.

Travel Management Planning was complete in 2009. A site-specific travel management decision was completed during project level analysis on the South Fork Salmon River Recreation Access Management Project. This project changed the motorized designation from open to motorized single track to motorized vehicles 50 inches or less in width on 5.2 miles of trail, converted 2.3 miles of road to a nonmotorized trail, added 1.0 mile of unauthorized road segments to the road system to allow access to popular dispersed campsites, and decommissioned 24.9 miles of road.

The public advertising campaign developed with Idaho Recreation and Tourism Initiative partners continued and added the utilization social media and web-based videos. MVUMs were distributed to local IDFG offices to increase public awareness.

In FY 2008, the Forest completed a travel management analysis for the Mountain Home RD. This complemented analyses completed in 2007 on the Cascade, Lowman, and Mountain Home RDs. Based on these decisions, 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.

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: *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.*

Accomplishments:

In 2011, the Forest reissued four of the five challenge cost-share agreements, for another 5-year period, with local counties and the IDPR. These agreements authorize a network of groomed snow machine trails, plowed parking areas, and some restroom facilities. IDPR distributes funds derived from snow machine registrations to local counties to perform grooming operations on the Forest.

In 2010, cost-share agreements between the Boise NF, IDPR, and the counties of Valley, Boise, Elmore, and City of Stanley continued to provide over 900 miles of groomed winter routes.

In 2007, a snowmobile trail grooming agreement between the Boise NF, IDPR, 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: *Maintain an ongoing inventory to locate and identify historic properties on National Forest System lands.*

Accomplishments:

In 2007, no large scale inventories to located and identify historic properties were completed.

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

Accomplishments:

In 2010, 240 sites were evaluated for their National Register eligibility in consultation with the Idaho State Historic Preservation office (SHPO). Sixty-six of those sites were determined eligible for listing with the SHPO. Sixty-six of these sites were determined eligible for listing on the National Register of Historic Places. The dramatic increase over the previous 2 years is due to one large project encompassing over 100 sites.

In 2009, 37 sites were evaluated for their National Register eligibility in consultation with the 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 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 SHPO. 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 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 SHPO. A total of 20 sites were determined eligible for listing on the National Register.

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

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

Accomplishments:

In 2008 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.

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

Accomplishments:

In 2007 through 2011, the Forest initiated curation on three major archeological collections and numerous small collections, which will yield data for future efforts.

In 2011, the Forest entered into its fourth year of a 5-year challenge cost-share agreement with BSU to analyze, report, and prepare for permanent curation of the Forest's major archeological collections. This is a multi-year project due to the size of the cultural assemblage. The Forest also loaned several Chinese medicinal bottles from its collection to the University of Idaho for analysis.

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: *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.*

Accomplishments:

In 2010, the Forest conducted nine presentations to public groups, including two guided walking tours of two historic properties associated with Chinese immigrants on the Idaho City RD. One of these presentations was given at the Heritage Barn Conference, sponsored by the Washington Trust for Historic Preservation and National Barn Alliance. The presentation focused on preserving the barn at the Historic Landmark Ranger Station. One of the guided walking tours was given to participants of the Chinese Tour of the American West, an event sponsored by the Wing Luke Museum of Seattle and the Forest Service. Most of the remaining presentations served local communities, primarily school children.

In 2009, the Forest hosted a volunteer project to record mining ditches in Boise Basin.

In 2008, the Forest gave two public presentations.

In 2006 the Forest conducted 12 presentations and/or fieldtrips focused on historic preservation with school children and other groups; hosted one interagency archaeological damage assessment course; and developed a web page for the Emmett RD highlighting the history of area attractions.

In 2005, the Forest conducted one PIT project, two interpretive projects, ten classroom and onsite 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.

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

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

Accomplishments:

In 2007 through 2011, 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. Work is anticipated to be completed in the fall of 2012.

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) nonprofit 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 FYs 2006 and 2007.

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: *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.*

Accomplishments:

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

Through consultation protocols or processes established with each of these Tribes, the Forest strives to achieve its objectives for Tribal Consultation. 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 2010 and 2011, as in previous years, the Boise NF continued to meet with designated tribal representatives of the Shoshone-Paiute Tribes to consult on activities on NFS lands that may affect tribal rights and interests at regular bi-monthly consultation meetings.

In 2010 and 2011, as in previous years, the Boise NF continued to implement the 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.

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.

A formal consultation protocol with the Shoshone-Bannock Tribe was finalized in FY 2011. The Boise NF and the Tribe have implemented the protocol and continue to work together to improve upon processes outline in this protocol. The Boise NF continues to communicate with the Tribal Council, as well as the appropriate Tribal staff contacts, through written and verbal communications.

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 13 illustrates how the actual allocations for FY 2010 and FY 2011 compares with the predicted Forest Plan budget level, by program area, as well as the actual allocation for FY 2004 through FY 2009.

As in earlier years, substantial differences in predicted allocations versus actual were seen in several funding areas in FY 2010 and 2011. Reductions or additions in 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 have been, and will continue to be, delayed if this trend continues. 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 Forest Plan, as amended in 2010, and their contribution to Forest Plan goals.

Table 13. Boise NF – Predicted Forest Plan Budget Level v. FY 2004-FY 2011 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	FY 2010 Actual Allocation	FY 2011 Actual Allocation
BDBD	Brush Disposal	128,400	156,300	71,400	115,000	200,000	100,000	75,000	75,00	71,702
CMFC/ CMII	Facility Construction & Mtce	1,389,100	1,441,000	565,100	662,447[1]	683,546[4]	470,627	278,565	650,309	606,637
CP09	Facility Improvement & Mtce[2]	N/A	N/A	N/A	269,724	257,120	234,973	245,383	408,624	314,800
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	1,416,191	1,308,462
CMTL	Trail Construction & Mtce	224,000	255,200	208,000	208,443	220,377[4]	338,488	353,884	281,593	532,333
CWKV	Sale Area Improvement	1,666,500	1,379,700	1,290,000	800,000	800,000	554,100	601,978	365,958	212,107
NFIM	Inventory and Monitoring	845,900	582,340	640,000	369,035	538,608	622,183	718,754	541,917	550,081
NFLM	Landownership Management	360,100	207,500	239,700	192,937	211,752	142,064	140,265	169,901	134,379
NFMG	Minerals & Geology Mgmt	403,000	359,240	332,000	386,692	356,895	276,356	253,810	428,906	476,477
NFPN	Land Management Planning	297,000	250,500	166,300	172,567	85,468	65,714	101,835	54,474	71,732
NFRG	Grazing Management	309,200	461,300	380,550	337,163	364,398	425,781	379,112	435,194	380,263
NFRW	Recreation/Heritage Resources/ Wilderness Management	1,104,100	851,500	887,640	931,288	939,712	987,071	1,082,444	947,345	962,242
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	2,085,248	1,738,542
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	2,219,921	1,326,642
NFWF	Wildlife/Fish/TES Habitat Mgmt	931,100	681,600	682,000	802,941	759,635	942,656	867,117	837,761	780,011
RBRB	Range Betterment	26,800	42,500	35,400	42,448	40,941[4]	39,661	42,973	43,614	43,614
SSSS	Salvage Sale	1,985,000	1,155,000	209,290	200,000	50,000	50,403	107,998	110,000	170,000
RTRT	Reforestation Trust Funds	1,165,600	971,600	1,274,500	1,159,809	688,779	405,935	667,850	462,878	643,642
CWK2[3]	Special Projects	N/A	N/A	N/A	1,774,958	55,526[4]	0	15,000	20,380	150,000
WFHF	Hazardous Fuels	1,899,000	1,934,200	1,750,200	1,641,933	1,842,156	1,690,362	1,986,088	2,105,669	2,264,000
WFPR	Fire Preparedness	6,544,700	4,749,100	4,413,500	5,311,785	5,550,685	5,802,964	5,952,325	5,568,242	5,370,992
TOTAL		**27,956,300**	**20,836,280**	**19,521,680**	**20,619,856**	**20,411,002**	**19,301,966**	**19,296,754**	**19,154,125**	**18,108,658**

[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 maintenance of administrative facilities. CP09 is new in FY 2006.
[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.

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

Table 14 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 14. Management Indicator Species for the Boise National Forest.

Type	Common Name	Habitat	Management Concerns
Bird Species	Pileated Woodpecker	PVGs 2-9	Selected to address source habitat that includes late seral large trees and old forests across broad elevations that developed under mixed1 and mixed2 fire regimes. Large snags and down logs (>20 inch d.b.h.), in various decay levels, are important special habitat features.
	White-headed Woodpecker*	PVGs 1, 2, 3, 5, 6	Selected to address source habitat that includes large tree and old ponderosa pine forests at low elevations that developed under nonlethal and mixed1 fire regimes. Large ponderosa pine snags, living trees, and down logs (>20 inch d.b.h.), in various decay levels, are important special habitat features.
	Black-backed Woodpecker	PVGs 3, 4, 6-10	Selected to address source habitat that includes old-forest stages of subalpine, montane, and lower montane forests and riparian woodlands inclusive of fire disturbed patches that developed under mixed2 and lethal fire regimes. Medium-sized snags with heart rot are an important special habitat feature. Fire can be beneficial to this species by stimulating bark beetle outbreaks, an important food source. Black-backed woodpecker populations typically peak in the first 3–5 years after a fire.
Fish Species	Bull Trout	Perennial streams	Selected to address the variety of aquatic habitat needs for other aquatic species that occur across the forest. Bull trout overlap much of the same habitat as other aquatic species and require many of the same watershed and habitat conditions (e.g., clean substrate, cover, low road densities, etc.) for persistence.

*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, RMRS, 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.

2011 Monitoring Accomplishments
During the 2011 field season, Boise NF fish crews completed MIS protocol surveys in 18 patches. Bull trout spawning and rearing was confirmed in nine patches. Habitat was determined to be suitable but no bull trout were detected in five patches. Four unsuitable (as modeled) patches were sampled and confirmed to be unsuitable.

2010 Monitoring Accomplishments
During the 2010 field season, Boise NF and RMRS crews completed MIS protocol surveys in seven patches. Bull trout presence was confirmed in three patches; habitat was determined to be suitable but no bull trout were detected in four patches.

2009 Monitoring Accomplishments
During the 2009 field season, Boise NF and RMRS crews completed MIS protocol surveys in 18 patches. Bull trout presence was confirmed in seven patches; habitat was determined to be suitable but no bull trout were detected in 11 patches.

2008 Monitoring Accomplishments
During the 2008 field season, Boise NF and RMRS crews completed MIS protocol surveys in 26 patches. Bull trout presence was confirmed in seven 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 nine patches.

2007 Monitoring Accomplishments
In 2007, the Forest fisheries biologist identified and stratified 179 bull trout patches on the Boise NF.[22] 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.

2006 Monitoring Accomplishments
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 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 4 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 15.

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

Table 15. Numbers of Bull Trout Patches and Strata Comparison: 2003-2011.

Number of Patches								
Strata	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009/2010**	**2011**
1 – Occupied	47	N/A	56	56	59	60	63	62
2 – Suitable/Unoccupied	64	N/A	62	59	59	63	62	62
3 – Unsuitable/Inaccessible	17	N/A	19	22	37	50	54	55
4 - Unsurveyed	50	N/A	42	41	24	6	0	0

The results displayed in Table 15 indicate an increase in distribution of bull trout since 2003. Bull trout were probably present, but previously undetected, in many of the patches that were reclassified as occupied since 2003. However, data from a few of these reclassified patches indicates recently founded populations, based on the limited number of age classes detected. Table 15 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.

Population Trend Monitoring for Pileated and White-headed 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, white-headed woodpecker and black-backed woodpecker. The secondary goal of this monitoring strategy is conduct an assessment of habitat relationships as they relate to population trends for those 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

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; note that the survey protocol for black-backed woodpecker, identified as an MIS species in 2010, is still being developed. 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.

Each year, a series of 50 transects, each consisting of 10 sampling points, are monitored across habitat suitable for pileated and white-headed woodpecker (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. 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.

Annual point count data will be used to establish trend relationships for white-headed and pileated woodpeckers over time. As of 2011, there are seven years of point count data on the Boise NF for these species. Detections are summarized in Table 15a.

2011 Monitoring Accomplishments
All transects (500 points) were surveyed in 2011. Sixty-five pileated woodpeckers were detected at 48 points. An additional six pileated woodpeckers were detected outside the monitoring interval on six survey routes. In 2011, there were no white-headed woodpeckers detected on any survey route. This is the first year there have been no detections of this species.

2010 Monitoring Accomplishments
All transects (500 points) were surveyed in 2010. Fifty-four pileated woodpeckers were detected at 46 points and two white-headed woodpeckers were detected at two points.

2009 Monitoring Accomplishments
All transects (500 points) were surveyed in 2009. Twenty-eight pileated woodpeckers were detected at 26 points and two white-headed woodpeckers at one point. An additional seven pileated woodpeckers were detected outside the monitoring interval on seven survey routes; no additional white-headed woodpeckers were detected outside the monitoring interval.

2008 Monitoring Accomplishments
All transects (500 points) were surveyed in 2008. Thirty pileated woodpeckers were detected at 28 points and two white-headed woodpeckers at two points. An additional two pileated woodpeckers were detected outside the monitoring interval on two 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 seven white-headed woodpeckers at seven points. An additional three pileated woodpeckers were detected outside the monitoring interval on three 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 three white-headed woodpeckers at three points.

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

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

Table 15a. Numbers of White-headed and Pileated Woodpeckers Detected: 2005-2011.

MIS Wildlife Species	2005	2006	2007	2008	2009	2010	2011
Pileated Woodpecker	36	26	27	28	26	54	65
White-headed Woodpecker	4	3	7	2	2	2	0

Population Trend Monitoring for Black-backed Woodpeckers
Black-backed woodpeckers were selected in the 2010 Forest Plan as an MIS because of their association with high numbers of snags in disturbed forests, use of late-seral old forest conditions, and relationship with beetle outbreaks in the years immediately following fire or insect or disease outbreaks (USDA Forest Service 2010). Management activities such as salvage logging, timber harvest, and firewood collection, can affect Key Ecological Functions (KEFs) this species performs or Key Environmental Correlates (KECs) associated with this species, and therefore, its role as an MIS will allow the Forest to characterize the effects of management activities on post-fire habitats and vegetation types in mid- to upper-elevation forests.

An evaluation of monitoring methodologies followed for this species on National Forests elsewhere in the west (e.g., Regions 1 and 5 of the USFS) was begun in FY 2011. With slight modifications, it is anticipated the final monitoring protocol will be established in FY 2012 and implementation may begin as soon as FY 2013.

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

Table 16 shows restoration accomplishments undertaken in Aquatic Conservation Strategy (ACS) priority watersheds, for FY 2004 through 2011. (See also section II.2 below, for more discussion of ACS priorities.)

Table 16: Restoration Completed in ACS Priority Subwatersheds: FY 2004 - FY 2011[23]

ACS Priority Subwatershed	2004	2005	2006	2007	2008	2009	2010	2011
Upper Bear Valley	Contracted replacement of Cub and Casner Creek culverts – 4 mi. of stream habitat. Sedge/shrub planting – 2 ac.	Replaced Cub and Casner Culverts – 4 mi. stream habitat	N/A	Green Lidar flight of Casner Creek channel. Planted willow, reseeded stream banks.	Casner Creek Rx burn – 901 ac. Scott Mtn. Whitebark Pine Project – 859 ac. in Upper Bear Valley, Scott Creek, and Whitehawk subwaterhseds. Treatment of noxious weeds along 582 road: 50 ac. TES habitat improved across Bear Valley and Elk Creek 5th HUs	Three nesting platforms for great gray owls installed near Red Mtn. and Sheep Trail Fire areas. See Scott Creek Whitebark project 2009	Casner stream restoration resulted in 0.5 mi for anadromous and resident fish. See Scott Creek Whitebark project 2010.Red Mtn. Reforestation Project: 500 acres accomplished. 810 acres restoration	Chinook spawning monitoring. Red Mtn. reforestation Whitebark pine restoration on acres 1,220
Lower Deadwood	Stream bank and slope stabilization to reduce erosion and sedimentation associated with road work: 3 acres. Pidgeon Flat seeding for soil erosion/sedimentation stabilization: 1 acre.	N/A	Completed 900 acres of prescribed burning.	Completed 1093 acres of prescribed burning.	28 acres restoration	11,838 acres restoration	N/A	Deadwood Bull Trout Study
Bear Creek (SFBR sub basin)	Removal of old 12-inch diameter water quality monitoring well used as public disposal site: 1 ac.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Third Fork	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. [24]	N/A	N/A	Riparian planting at Squaw Creek AOP sites (0.25 stream miles enhanced at Rammage and Wilson creeks). 394 acres of mechanical fuels treatment. Decommissioned 1.0 miles of road as part of Upper Muir project.	N/A	N/A	N/A	Bull Trout MIS study

[23] 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.

[24] 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	2004	2005	2006	2007	2008	2009	2010	2011
Deadwood Reservoir	N/A	N/A	N/A	N/A	N/A	N/A	12 acres restoration	12 acres of restoration
Deer Creek	N/A	N/A	N/A	N/A	N/A	N/A	6,753 acres restoration	7,155 acres restoration
Curtis Creek	N/A	N/A	N/A	N/A	286 acres restoration	Planning project to replace 5 culverts; provide 7 mi. habitat	Replaced 5 fish passage culverts with bottomless arch culverts. Increased stream habitat by 8 mi.	
Upper Elk	N/A	N/A	N/A	N/A	See Cache subwatershed 2008 project. See Upper Bear Valley noxious weeds treatment 2008.	N/A	42 acres restoration	Chinook spawning monitoring 11.5 acres of restoration
Elk Creek	Completed 99 acres of timber stand improvement (TSI) to move veg towards desired conditions.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Upper Middle Fork Payette	N/A	Completed 452 acres of restoration	Decommissioned 1.1 mi. of 409F road, reduced sediment delivery to 1.3 miles of stream. Replaced two culverts - 1.0 mi. of stream.	N/A	N/A	N/A	N/A	N/A
North Fork Gold Fork	N/A	Completed 106 acres restoration	N/A	N/A	Foolhen Creek Bull Trout Restoration. Two fish barrier culverts replaced on 498 road. 4.2 mi. of inland cold-water habitat restored.	N/A	N/A	N/A
Squaw-Pole	N/A	Completed 106 acres restoration	N/A	Completed 1106 acres of prescribed fire, 60 acres of mechanical fuels treatment.	Third Pole Integrated Restoration. Decomm. 7.7 miles of road, 1.9 miles converted- trail (0.4) or changed from a seasonal closure -yearlong closure (1.5). 1.3 miles of roads decommissioned 1,322 acres accomplished.	Installed two gates: 1,407 acres enhanced for wildlife. Designed removal of in-stream log structures	N/A	N/A
Upper Mores Creek	N/A	Completed 100 acres of prescribed fire.	N/A	N/A	N/A	Replacement of the Mores Creek (Hayfork) restored access to approximately 4.2 miles.	N/A	N/A
Roaring River	N/A	N/A	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.	N/A	N/A	N/A	N/A

ACS Priority Subwatershed	2004	2005	2006	2007	2008	2009	2010	2011
Upper Burntlog	N/A	N/A	N/A	Cascade Complex BAER: removed/replaced culverts and improved road drainage on authorized	EF Burntlog Ck. fish barrier culvert replaced BAER, 1.3 mi anadromous habitat restored.	N/A	N/A	Johnson Ck. Watershed Imp.
Six-Bit Creek	N/A	N/A	N/A	Cascade Complex BAER: aerial straw mulching; removed/ replaced culverts and improved road drainage on authorized roads	N/A	N/A	N/A	N/A
Upper Deadwood	N/A	N/A	N/A	N/A	N/A	N/A	28 acres of restoration	232 acres of restoration
Bull Creek	N/A	N/A	Removed 4 failing culverts at stream crossings and temporarily closed the Silver Creek Summit ATV trail.	N/A	N/A	NEPA for E Area Motorized Wheeled Vehicle Mgmt. Project; Trail Creek Project.	N/A	Bull Creek Trail/Water Improvement
Lower Burntlog	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Johnson Ck. Watershed Imp.
Pikes Fork	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Crooked R. fords

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 FWS issued biological opinions in respons
proposed action or management strategy) outlined in the 2003 Forest Pla
Fisheries issued reasonable and prudent measures and related terms and c
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.

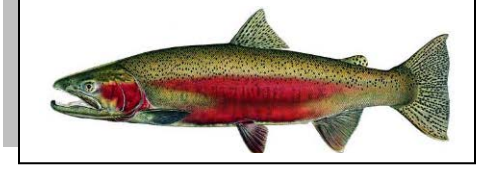


Illustration by Joseph Tomelleri

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[25]**

  To clarify this sideboard, the Boise NF was to develop operational guidance before the 2004 fire season. Operational resources were finalized on the Boise NF for the 2004, 2005, 2006, 2007, 2008, 2009, and 2010 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 sub basin planning, watershed analysis and monitoring.[26]**

[25] 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.

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

As Boise NF and PIBO personnel evolve the "bridge" between implementation monitoring efforts, the Forest continued to participate in the PIBO effectiveness monitoring program in 2010 and 2011.

A comprehensive report through 2011 pertaining to the effectiveness monitoring, prepared by the Fish Ecology Unit, is available at
http://www.fs.fed.us/biology/resources/pubs/feu/pibo/2011_pibo_em_annual_report_final.pdf .

The Boise NF, Sawtooth NF, and PIBO staff collaborated on a Forest Plan effectiveness monitoring strategy to address SWRA monitoring elements in Chapter IV. This strategy incorporates data from all of the PIBO effectiveness monitoring sites within the Boise, Payette, and Sawtooth NFs and identifies supplemental sites to be sampled using the same protocols. Monitoring data is used to guide watershed analyses and sub basin planning.

The Interagency Implementation Team (IIT) conducts monitoring at the level of the Forest Service Land and Resource Management 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. This effort is continuing through 2011.

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 through 2011. 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 and beyond, this report was not prepared. In 2011, the Forest developed its own report by individual stream reaches. This process is anticipated to be established in 2012.

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 5-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 2008-2010.

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

Answer: 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 5 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 in 2011.

In 2011, 145 water samples were taken and tested from 14 open administrative facilities with no identifiable deficiencies. Overall, the monthly sampling collected and analyzed indicated all administrative-site water systems met Safe Drinking Water Act standards and Forest Service regulations.

In 2010, 138 water samples were taken and tested from 14 open administrative facilities. Nine 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 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 RD 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 (8a): Are developed recreation sites free of high-risk conditions? Do water systems meet Federal, State, and local requirements? (annual reporting)

Answer: 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 2011, 429 water samples were taken and tested from 65 open recreation facilities. Thirty-four nitrate samples were not taken and one repeat coliform sample was not accomplished associated with Safe Drinking Water Act deficiencies. All deficiencies involved water sampling that had been inadvertently missed by both forest personnel and concessionaires, training has been provided at operator level to reduce number of deficiencies.

In 2010, 411 water samples were taken and tested from 65 open recreation facilities. Thirty-one 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. In response to a

national review of public safety in Forest Service developed sites, a rapid assessment of risks to public safety was completed for all recreation sites with a development scale of three or higher. The assessment evaluated risks to public safety associated with wildfire, wildlife, hazard trees, flooding, and other natural events. The Boise NF reported a satisfactory level of commitment in annually scheduled site evaluations and safety protocols, including hazard tree assessment and removal, drinking water system testing, and evacuation planning. The assessment indicated that high risk conditions do not exist at any of the 111 sites evaluated.

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

The National Historic Preservation Act (NHPA) is the principal, guiding statute for the management of cultural resources on the NFS lands. Section 106 of NHPA requires Federal agencies to consider the effects of their activities and programs on historic properties, and provide the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on agency undertakings. Federal agencies are also required to consult with the SHPOs), affected Indian Tribes, and other parties as identified in the 36 CFR 800 regulations implementing Section 106.

Direct and indirect effects to historic properties from the Federal agency actions are determined by applying NHPA's criteria of effect. NHPA defines an adverse effect as one that diminishes the integrity of a historic or prehistoric site's location, design, setting, materials, workmanship, feeling, or association. Adverse effects include physical destruction, damage, or alteration to all or part of a site, and/or the introduction of visual, audible, or atmospheric elements that are out of character with the site, or alter its setting. Criteria of effect are only applied to those sites determined eligible for the National Register.

If an activity or program will not alter the characteristic of a historic property that make it eligible for the National Register, then a No Effect determination may be reached. No Adverse Effect determinations are applied when the Forest Service and consulting parties determine that the effects do not meet the criteria for an adverse effect, or the activity or program is modified or stipulations are imposed to avoid adverse effects (e.g., implementation monitoring).

Should the Forest Service determine that an activity will have an adverse effect on a historic property, and the SHPO concurs, the Agency and SHPO will stipulate measures to resolve the effect(s) in a Memorandum of Agreement (MOA). The ACHP, Indian Tribes, and other consulting parties may also participate in the resolution of adverse effects.

Answer: In 2010, the Forest consulted on 66 projects. The majority of these projects received No Effect or No Adverse Effect to historic properties determinations. Four projects received Adverse Effect determinations. The adverse effects involve projects associated with road maintenance, recreation and mining. For two of these projects, the Forest executed MOAs to resolve the adverse effect to two historic properties. The Forest is still in consultation on the development of the MOA for the other two projects. In addition, two additional projects that received cultural resources clearance in a previous year were monitored during or following project implementation to determine if NHPA Section 106 compliance stipulations were met. The Forest, in consultation with the Idaho SHPO, determined that the projects were implemented consistent with the requirements to avoid adverse effects to historic properties.

In 2009, the Forest consulted on 52 projects. All but one of the projects received No Effect or No Adverse Effect to historic properties determinations. The Forest executed a MOA to resolve the adverse effects to one historic property involved in a CERCLA mine response. In addition, two projects that received cultural resources clearance in a previous year were monitored during or following project implementation to determine if NHPA Section 106 compliance stipulations were met. The Forest Service, in consultation with the SHPO, determined that the projects were implemented consistent with the requirements to avoid adverse effects to historic properties.

In 2008, the Forest consulted on 56 projects. All of the projects received No Effect or No Adverse Effect to historic properties determinations. One of these projects, however, was implemented with a potential adverse effect to one historic property. The Forest consulted with the Idaho SHPO and affected Indian Tribes to resolve this situation. Three additional projects that received cultural resources clearance in a previous year 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 the project was implemented consistent with the requirements to avoid adverse effects to historic properties.

In 2007, the Forest consulted on 47 projects. All of the projects but one received No Effect or No Adverse Effect to historic properties determinations. In addition, 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 SHPO, determined that the projects were implemented consistent with the requirements to avoid adverse effects to the historic properties.

In 2006, the Forest consulted on 60 projects. All projects but one received a No Effect or No Adverse Effect to historic properties determinations. A determination of effects could not be made for one multi-year project with incomplete design features, so an MOA providing for a phased evaluation of effects was executed. To date, no adverse effects from this project to historic properties have been identified. In addition, 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. The majority of these projects received a No Effect or No Adverse Effect to historic properties determinations. Five projects received Adverse Effect determinations. The adverse effects involved projects associated with mining and special uses. The Forest executed MOAs to resolve the adverse effects from these projects to five historic properties. One of these projects never proceeded to implementation so there was No Effect to one property. In addition, 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 (34): Have restoration and conservation activities been focused in priority watersheds identified by the WARS process?

Answer: 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.[27] This strategy provides the "blueprint" for recovery and protection of aquatic (both physical and biological) resources across the Ecogroup.

[27] 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).

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.

Aquatic restoration work includes actions to restore soil, water, aquatic species, and riparian resource conditions. Restoration occurs in ACS and WARS priority subwatersheds, and in other subwatersheds. Table 16 shows restoration work (both aquatic-specific and other) in ACS priority subwatersheds, while Table 18 displays restoration work (both aquatic-specific and other) in WARS priority and other subwatersheds.

Restoration can be measured by how many projects were implemented. For example, information for 2008-2010 is summarized below in Table 17 to show a snap shot of the relationship of restoration activities within priority watersheds versus other watersheds identified as high, moderate or low priority.

Table 17. Restoration Projects Accomplished 2008-2010, by Year, Restoration Type (Aquatic or other), and Subwatershed Priority (data sources from Tables 16 and 18 in this document).

Year	Type of Project	Priority				
		ACS	Non-ACS, High	Non-ACS, Moderate	Non-ACS, Low	Total
2008	Aquatic	3	14	6	3	26
	Other	6	22	24	4	56
	Total	9 (11%)	36 (44%)	30 (37%)	7 (8%)	82
2009	Aquatic	4	6	6	3	19
	Other	3	13	18	4	38
	Total	7 (12%)	19 (34%)	24 (42%)	7 (12%)	57
2010	Aquatic	9	40	20	9	78
	Other	17	61	64	15	157
	Total	26 (11%)	101 (43%)	84 (36%)	24 (10%)	235

In 2008-2010; 26, 29, and 30 aquatic restoration projects and 56, 41, and 60 "other" restoration projects (respectively) were completed annually. These accomplishments supplement, and show a substantial increase over, what was accomplished in 2005-2007, where 9, 17, and 24 aquatic restoration projects were completed, and 27 (in 2007) "other" projects were completed.

For 2008 and 2010, restoration and conservation activities were focused in priority watersheds identified by the WARS process. In summary, from Table 17:

- 2008: 55 percent of restoration projects were completed in ACS and High-priority watersheds
- 2009: 45 percent of restoration projects were completed in ACS and high-priority watersheds
- 2010: 54 percent of restoration projects were completed in ACS and high-priority watersheds

In FY 2007, about 24 directly-related aquatic restoration projects and 27 indirectly-related aquatic restoration projects were completed. The FY 2007 accomplishments supplement, and show a substantial increase over, what was accomplished in FYs 2006-05. 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 a priority for resource restoration, not all restoration projects implemented or dollars spent in FYs 2005-07 occurred in these subwatersheds. This is due to several reasons. First, many of the aquatic restoration projects implemented in FYs 2006-05 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., BAER emergency stabilization projects, sediment produced by a storm-damaged road or user-created trail) or to address other Forest Plan priorities such as treatments to address fire hazards within the WUI. 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 FYs 2005 through 2007 still addressed many key Forestwide or management area objectives in ACS or high priority subwatersheds (Tables 16 and 18). 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 18. Other ACS Restoration Completed in Subwatersheds: FY 2004 -2011[28] Summary of Work Accomplished

* Data only for years with work accomplishments.

Sub-watershed	WARS Restoration Strategy/Priority	2004	2006	2007	2008	2009	2010	2011
Big Pine Creek subwatershed	Active/ Moderate	Seeding of disturbed areas associated with the debris torrent, road blowout road and channel reconstruction): 2 acres	N/A	Initiated data gathering with FHWA to prepare analysis supporting Big Pine Creek Culvert replacement	N/A	N/A	N/A	N/A
Beaver-Edna	Active/Moderate	N/A	N/A	N/A	See Upper Crooked River Veg Restoration 2008	N/A	See Upper Crooked River BA 2010	Crooked R. fords
Bridge-Bryan subwatershed	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 improvement.	N/A	N/A	N/A	N/A	N/A
Cache subwatershed Wyoming subwatershed	Passive/ High	Sedge/shrub planting to enhance streamside veg and improve streambank stability: 1 acre	N/A	Red Mtn. Fire BAER: aerial straw mulching within six units totaling 1,480 acres	Treatment of noxious weeds along 582 road: 50 acres TES habitat improved across all subwatersheds in Bear Valley and Elk Creek 5th HUs. 24,918 acres Wyoming subwatershed: 13,429 acres restored.	Wyoming Watershed: 500 acres restoration from FACTS database	Wyoming Watershed: 1,342 acres restoration from FACTS database.	Chinook spawning monitoring. Red Mtn. reforestation Whitebark pine restoration 9 acres of other restoration work

[28] This table does *not* include restoration activities for ACS priority watersheds, which are reported in Table 16. In addition, for this table, accomplishment of timber stand improvement (TSI), prescribed fire and mechanical fuels treatment is reported beginning in FY 2005.

Sub-watershed	WARS Restoration Strategy/Priority	2004	2006	2007	2008	2009	2010	2011
Bearskin	Active/High	N/A	N/A	N/A	See Cache (2008) 14 ac. restoration.	N/A	1417 ac. restoration	249 acres of other restoration work
Cascade Reservoir subwatershed	Active/ High	Decommissioning of unclassified user developed dispersed recreation road to reduce soil erosion and sedimentation: 1 acre.	N/A	N/A	N/A	N/A	654 acres restoration from FACTS database.	N/A
Lower Crooked River	Active/Moderate	N/A	N/A	N/A	See Upper Crooked River Veg restoration 2008	N/A	See Upper Crooked River BA 2010	Crooked R. fords
Lower Clear Creek subwatershed	Active/ Moderate	Dispersed campsite restoration (8 acres) including shrub planting to improve riparian vegetation and increase streambank stability.	N/A	N/A	N/A	N/A	2,286 ac. restoration from FACTS database.	789 acres of other restoration work
Scott Creek	Active/High	Scott MTN. Whitebark Pine Restoration Project: 579 ac. across 400 ac. in Upper Bear Valley, Scott Crk, Whitehawk subwatersheds.	N/A	N/A	Scott Mtn. Whitebark Pine Restoration Project: 579 acres across 400 acres in Upper Bear Valley, Cottonwood Creek and Whitehawk Watersheds.	756 ac. accomplished in 3 watersheds. (See 2008)	257 ac. accomplished in 3 watersheds (See 2008)	N/A
Whitehawk	Passive/ Moderate	See Scott Crk (2008)	N/A	N/A	See Scott Creek 2008 Whitebark Pine Project.	See Scott Creek (2009) Whitebark Pine Project.	See Scoot Creek (2010) Whitebark Pine Project	N/A

Sub-watershed	WARS Restoration Strategy/Priority	2004	2005	2006	2007	2008	2009	2010	2011
Fir Creek subwatershed	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.	N/A	See Cache Creek subwatershed above.	Fir Creek Culvert replacement restored fish passage to 6 miles See Cache subwatershed 2008 skeletonweed project. 3894 acres restoration .	N/A	N/A	Red Mtn. reforestation Whitebark pine restoration
Lower Elk (Middle Fork Salmon R.)	Active/High	See Cache (2008) See Upper Bear Valley noxious weeds treatment (2008) 11,674 ac. restoration.	N/A	N/A	N/A	See Cache subwatershed 2008 skeletonweed project. See Upper Bear Valley noxious weeds treatment 2008 (Table 10). 11,674 ac. restoration	N/A	203 ac. restoration from FACTS database.	103 acres of other restoration work
Lower Bear subwatershed within the North and Middle Fork Boise Subbasin	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.	N/A	N/A	N/A	N/A	N/A	N/A
Taylor-Lodgepole subwatershed	Active/ Moderate	Eliminated one culvert that presented a barrier to fish passage in Hunter Creek. Restored access to 0.7 mile of stream habitat.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rabbit Creek subwatershed and Trapper-Trail subwatershed	Active/ Moderate	Decommission 43.9 miles of road and eliminate 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.	N/A	N/A	5,900 ac. restoration.	N/A	N/A	N/A

Subwatershed	WARS Restoration Strategy/Priority	2004	2005	2007	2008	2009	2010	2011
Sagehen subwatershed	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.	N/A	N/A	N/A	N/A	N/A
Two Bit Roaring subwatershed	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 RX burning. Cascade Complex BAER: aerial straw mulching; removed/replace culverts and improved drainage	42 acres restoration from FACTS database	N/A	21 acres restoration from FACTS database.	N/A
Riordan Creek	Active/ High	N/A	N/A	Cascade Complex BAER: approx. 1,400 acres aerial straw mulching.	Planning 200 ac. (across Riordan, Trapper, and Wardenhoff-Bear 6th HUs) of burned bitterbrush restoration . BAER-Cascade Complex – 2,234	Bitterbrush planting project to speed the recovery of approx. 200 acres of winter range in Lower Johnson Creek drainage.	See Trapper (Lower Johnson) 2010	Johnson Ck. Watershed Imp.
Upper Willow -SFBR subbasin Lower Willow -SFBR subbasin	Active/ Moderate	Erosion/sediment ation control 2.5 miles/10 acres of new ATV trails.	N/A	Installed 2 bridges on Flat Cr, 2 culverts, 1 culvert in Pole Creek to improve stream crossings in Danskin Trails area. Also rehabbed Danskin Boat Launch.	12 acres watershed improved.	N/A	N/A	N/A

Subwatershed	WARS Restoration Strategy/Priority	2005	2006	2007	2008	2009	2010	2011
Trapper (Lower Johnson)	Active/High	N/A	N/A	N/A	Planning 200 acres (across Riordan, Trapper, and Wardenhoff-Bear 6th Hus) of burned bitterbrush restoration	Bitterbrush planting project will serve to speed the recovery of approx. 200 acres of winter range in the Lower Johnson Creek drainage.	NEPA for decommissioning up to 20 miles of road, replacing trail fords with bridges, & improving roads and dispersed campsites. Improvement of 10 miles of TES fish habitat, 6,400 acres of wildlife habitat, and 100 acres watershed conditions.	Johnson Ck. Watershed Imp.
Werdenhoff/Bear	Active/High	N/A	N/A	N/A	Planning 200 ac. (across Riordan,Trapper and Wardenhoff Bear 6th Hus) of burned bitterbrush restoration.	The bitterbrush planting project will serve to speed the recovery of approx. 200 acres of winter range in the Lower Johnson Creek drainage.	252 acres restoration. See Trapper watershed (Lower Johnson) 2010	Johnson Ck. Watershed imp.
Lunch-Rock	Active/High	83 ac. restoration	N/A	N/A	83 acres of other restoration work	N/A	See Trapper (Lower Johnson) subwatershed 2010. Six great gray owl nest platforms installed, Accomplished 300 acres.	Johnson Ck. Watershed Imp. Johnson Meadow Enhance.
Two Bit-Roaring	Active/High	N/A	N/A	N/A	42 acres of other restoration work	N/A	21 acres of other restoration work	27 acres of other restoration work
Queens River	Passive/High	N/A	N/A	N/A	N/A	N/A	See Black Warrior 2010	N/A
Little Queens River	Passive/ High	N/A	N/A	N/A	N/A	N/A	See Black Warrior 2010	N/A
Decker	Active/ Moderate	N/A	N/A	N/A	N/A	Grouse Lake trail work, implementation of lakeshore highline to mitigate erosion. 5.0 ac. enhanced.	See Black Warrior 2010	N/A

Subwatershed	WARS Restoration Strategy/Priority	2004	2005	2007	2008	2009	2010	2011
Black Warrior	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.	Black Warrior ATV trail reconstruction reduced sediment delivery to 2.0 miles of Black Warrior Creek.	N/A	N/A	Id City RD Backcountry Weeds treatment; 727 acres treated over 7 subwatersheds	N/A
Swanholm-Hot	Active/ Moderate	Completed reforestation on 468 acres burned during the 2003 Hot Creek wildfire.	N/A	N/A	N/A	N/A	N/A	N/A
Bald Mtn. - Eagle	Passive/ High	Reforestation on 1,248 acres burned during the 2003 Hot Creek fire.	N/A	N/A	N/A	N/A	N/A	N/A
Warm Lake Creek	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;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	Reeves Creek fish barrier culvert replaced with stream simulation culvert to restore 0.75 mile of anadromous habitat. BAER. Decommission/obliterated 7.2 miles of road 852 acres protected for both subwatersheds (project shared with Halfway and Park-Sheep 6th subwatershed).	82 acres of other restoration work	82 acres of other restoration work continued	27 acres of other restoration work
Smith-Dunnigan	Active/ Moderate	Completed 131 acres of timber stand improvement (TSI) to move veg toward desired conditions.	N/A	N/A	N/A	N/A	N/A	N/A
Lower Fall	Active/ Low	Completed 138 acres of TSI to move veg toward desired conditions.	Completed 333 acres of mechanical fuels treatment; 50 acres of prescribed burning.	Completed 640 acres of prescribed burning.	N/A	N/A	N/A	198 acres of other restoration work
Upper Johnson	Active/High	N/A	N/A	N/A	N/A	N/A	See Trapper Lower Johnson subwatershed)	
Long Gulch	Active/Moderate	N/A	N/A	N/A	N/A	N/A	N/A	920 acres of other restoration work
Hole in the Wall	Active/Moderate	N/A	N/A	N/A	N/A	N/A	N/A	334 acres of other restoration work

Subwatershed	WARS Restoration Strategy/Priority	2005	2006	2007	2008	2009	2010	2011
Feather River	Active/ Moderate	Completed 350 acres of TSI to move veg toward desired conditions.	N/A	Completed 5 acres of mechanical fuels treatment.	132 acres restoration	N/A	Cayuse Gully restoration, 1.5 miles stream improved.	
Hungarian-Beaver	Active/ Moderate	Completed 112 acres of TSI to move veg toward desired conditions.	N/A	N/A	N/A	N/A	N/A	Boise Basin Bull Trout Monitoring
Big Five-Pool	Active/ Moderate	Completed 145 acres of TSI to move veg toward desired conditions.	N/A	N/A	N/A	N/A	N/A	Boise Basin Bull Trout Monitoring
Browns-Mink	Active/ Moderate	Completed 399 acres of TSI to move veg toward desired conditions.	N/A	N/A	N/A	N/A	N/A	N/A
Joe Daley-James	Active/ Moderate	Completed 341 acres of TSI to move veg toward desired conditions. Completed 794 acres of mechanical fuels treatment.	Completed 20 ac. of mechanical fuels treatment. Monarch Mill Site hazardous tailings removal and stream bank 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)	Monarch Stamp Mill 0.25 miles stream restored.	N/A	See Black Warrior 2010	N/A
Pine	Active/ Low	Completed 428 acres of TSI to move veg toward desired conditions.	Relocated/closed dispersed recreation sites along lower Grimes Creek to reduce sediment on 2.0 miles of stream.	Relocated/closed dispersed recreation sites along lower Grimes Creek to reduce sediment on 3.0 miles of stream.	N/A	N/A	N/A	N/A
Mack's Creek	Active/Moderate	Completed 255 acres of TSI to move veg toward desired conditions.	Removed nine culverts restoring AOP to 7.0 miles of habitat in Mack's Creek.	N/A	N/A	N/A	N/A	N/A
Granite-Buck	Active/Moderate	N/A	N/A	N/A	N/A	N/A	N/A	Granite Ck. Trail and AOP culvert planning Bull trout MIS study

Subwatershed	WARS Restoration Strategy/Priority	2005	2006	2008	2009	2010	2011
Lower Granite	Active/ Low	Completed 923 acres of TSI; 141 acres prescribed burning; 65 acres mechanical fuels treatment.	Completed 754 acres mechanical fuels treatment. Completed 420 acres prescribed burning.	N/A	16 acres restoration	Mores/Grimes Restoration Project. (see Pine subwatershed 2008) Planning/NEPA for Little Ophir: future target of 500-1,000 acres of wildlife habitat enhancement.	160 acres of other restoration work
Gregory-Johnny	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.	Mores/Grimes Restoration Project (see Pine Watershed 2008)	Mores/Grimes Restoration Project (see Pine subwatershed 2008)	Mores/Grimes Restoration Project (see Pine subwatershed 2008)	N/A
Lower Elk	Active/ Moderate	Completed 539 acres of TSI; 20 acres mech. fuels treatment, 389 acres prescribed burning.	Completed 236 acres of prescribed burning.	Mores/Grimes Restoration Project. (see Pine subwatershed 2008)	Mores/Grimes Restoration Project. (see Pine subwatershed 2008)	Mores/Grimes Restoration Project. (see Pines subwatershed 2008). 20 bluebird nest structures placed, 200 acres wildlife improvement.	104 acres of other restoration work
Granite-Illinois	Active/ Moderate	Completed 95 acres of TSI	N/A	206 acres restoration	N/A	N/A	299 acres of other restoration work
Fawn-Alpha	Active/ Low	Completed 134 acres of TSI	N/A	N/A	N/A	N/A	
Upper Big Creek	Active/ Low	Completed 160 acres of TSI	N/A	N/A	N/A	N/A	592 acres of other restoration work
Wolf	Active/ Moderate	Completed 101 acres of TSI	N/A	N/A	N/A	N/A	
Middle-Falls	Active/Low	N/A	N/A	N/A	N/A	N/A	Bull trout MIS study
Wild Goat-Deadhorse	Active/Low	N/A	N/A	N/A	N/A	N/A	135 acres of other restoration work
Smith-Dunnigan	Active/Moderate	N/A	N/A	N/A	N/A	N/A	32 acres of other restoration work
Shafer	Active/Moderate	N/A	N/A	N/A	N/A	N/A	807 acres of other restoration work

Subwatershed	WARS Restoration Strategy/Priority	2005	2006	2008	2009	2010	2011
South Gold Fork	Active/High	N/A	N/A	N/A	Aspen release: 70 acres	N/A	N/A
Swanholm-Hot	Active/Moderate	N/A	N/A	N/A	N/A	N/A	N/A
Halfway	Active/Moderate	N/A	N/A	SFSR Cabin Ck. Rd: Decommission/obliterate 7.2 mi. of road, 852 ac. protected for Park-Sheep and Warm Lake Ck. 6th subwatershed).	SFSR Cabin Ck. Rd: close 9.8 mi. of road in Upper South Fork Salmon River drainage, 852 acres at Warm Lake	N/A	N/A
Park-Sheep	Active/Moderate	N/A	N/A	See Halfway 2008	N/A	N/A	N/A
Mattingly-Legate	Passive/High	N/A	N/A	N/A	N/A	See Black Warrior 2010	
Mineha-Wildcat	Active/Moderate	N/A	N/A	Warm Springs Ridge Shrub Enhancement. 75 acres across Middle-Mores, Gregory-Johnny, and Mineha-Wildcat subwatersheds..	N/A	Mores/Grimes Restoration Project. (see Pine subwatershed 2008)	424 acres of other restoration work
Big Owl-Wren	Active/Moderate	N/A	N/A	N/A	1,448 acres restoration from FACTS database	N/A	N/A
Lower Bear River	Active/Moderate	N/A	N/A	N/A		Install highline at Jenny Lake to reduce sediment	N/A
Pearsol		N/A	N/A	Crawford Habitat Project. Fireline construction to maintain Rx burn to enhance winter range.	Rx burn: 120 acres accomplished. 94 acres restoration from FACTS database	N/A	N/A
Upper Crooked River	Active/Moderate	N/A	N/A	Vegetative restoration and Native Plant Materials Collection, 1.5 acres TES habitat restored in Upper Pikes, Upper/Lower Crooked River, and Beaver-Edna subwatersheds.	N/A	868 acres restoration to manage / control dispersed recreation Crooked River.	Crooked R. fords
Upper Sulfur		N/A	N/A	N/A	N/A	N/A	Johnson Ck. Watershed Imp. Johnson Meadow Enhance. 38 acres of other restoration work

Subwatershed	WARS Restoration Strategy/Priority	2005	2006	2007	2008	2009	2010	2011
Yuba	Active/Moderate	N/A	N/A	N/A	N/A	N/A	See Black Warrior 2010	N/A
Danskin-Poorman	Active/ Moderate	Completed 242 acres of TSI to move veg toward desired conditions.	Completed 700 acres of prescribed fire.	N/A	N/A	Stand exam data collected for 5,082 acres in Poorman Maintenance Burn area. 2,803 acres restoration	2,189 acres restoration database. Poorman maintenance Rx burn, 4,698 acres wildlife habitat improved.	Poorman Rx burn
Alder Creek	Active/ Low	Completed 586 acres of TSI to move veg toward desired conditions. Completed 791 acres prescribed burning.	N/A	Completed 68 acres of mechanical fuels treatment.	N/A	N/A	N/A	N/A
Kennedy	Passive/ Low	Completed 271 acres of TSI to move veg toward desired conditions.	N/A	Completed 58 acres mechanical thinning to move veg toward desired conditions.	N/A	N/A	N/A	303 acres of other restoration work
Cottonwood-Pine	Active/ Low	Completed 222 acres of TSI to move veg toward desired conditions.	N/A	N/A	N/A	N/A	N/A	1,024 acres of other restoration work
Second Fork	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.	N/A	N/A	N/A	Bull Trout MIS study
Rock Creek	Active/Low	Completed 361 acres of TSI to move veg toward desired conditions.	Decommissioned 3 miles of 594C Rd and approx.5 miles of roads - reduced sediment on 1.0 mile of stream.	N/A	N/A	N/A	N/A	N/A

Subwatershed	WARS Restoration Strategy/Priority	2005	2006	2007	2008	2009	2010	2011
High Valley	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.	N/A	N/A	N/A	N/A
Tripod-Murray	Active/ Moderate	Completed 340 acres of TSI to move veg toward desired conditions.	N/A	N/A	N/A	N/A	N/A	N/A
Bannock-Thomas	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.	Mores/Grimes Restoration Project. (see Pine subwatershed 2008) 54 ac. restoration	Mores/Grimes Restoration Project. (see Pine subwatershed 2008)	Mores/Grimes Restoration Project. (see Pine subwatershed 2008).	Mores-Granite-Grimes water imp. FACTS acres
Kirkham	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.	N/A	N/A	314 acres of other restoration work	486 acres of other restoration work	N/A
North Fork Lime Creek	Active/ Low	Completed 2,668 acres of prescribed fire.	N/A	N/A	43 acres of other restoration work	43 acres of other restoration work	N/A	N/A
Upper South Fork Payette	Active/Moderate	N/A	N/A	N/A	N/A	Improved aquatic and terrestrial habitat conditions by decommissioning roads. 1,948 acres	N/A	N/A

Subwatershed	WARS Restoration Strategy/Priority	2005	2006	2007	2008	2009	2010	2011
Pine	Active/ Low	Completed 1,080 acres of prescribed fire.	N/A	N/A	Grimes/Mores Restoration Project. Improve water quality and cold water fisheries habitat in Bannock-Thomas, Pine, Lower Elk, Gregory-Johnny, Mineha-Wildcat, Lewis-Clay, and Lower Granite subwatersheds. 4.1 miles stream restored across all subwatersheds in 2008.	Grimes/Mores Restoration Project. (See Pine subwatershed 2008). 3.5 miles stream restored across all subwatersheds in 2009	Grimes/Mores Restoration Project. See Pine subwatershed 2008. 8 miles stream restored across all subwatersheds in 2010	N/A
Miller-Hulls Gulch	Active/ High	Decommissioned 6 miles of user-created trail, with partner assistance.	N/A	N/A	N/A	N/A	N/A	N/A
Pierce-Mennecke	Active/ Moderate	Decommissioned 1 mile of road.	N/A	N/A	N/A	N/A	32 waterfowl structures placed, 700 ac. accomplished across Pierce-Mennecke and Cayuse-Rough subwatersheds.	N/A
Anderson Ranch Reservoir	Active/ Moderate	Restored 5 acres of wetland habitat.	N/A	Rehabbed user-created roads around Anderson Ranch Reservoir.	49 acres of other restoration work	N/A	49 acres of other restoration work	N/A
Clear Creek (170501120402)	Active/ Low	N/A	Completed 1331 acres of mechanical fuels treatment.	Completed 1021 acres of prescribed burning, 249 acres of mechanical fuels treatment.	Clear Creek weir and subsequent tracking of radio tagged bull trout provided better understanding of bull trout migrations in SF Payette River.	N/A	N/A	N/A
Dog-Nichols	Active/ Moderate	N/A	Completed 50 acres of mechanical fuels treatment.	Completed 93 acres of mechanical fuels treatment, 43 acres of prescribed burning.	99 acres of other restoration work	92 acres of other restoration work	N/A	N/A
Rock Creek (SF Payette)	Active/Low	N/A	N/A	N/A	N/A	N/A	N/A	186 acres of other restoration work
No Mans-Boulder	Active/High	N/A	N/A	N/A	N/A	N/A	N/A	44 acres of other restoration work

Subwatershed	WARS Restoration Strategy/Priority	2006	2007	2008	2009	2010	2011
Minneha-Wildcat	Active/ Moderate	Completed 93 acres of prescribed burning.	N/A	N/A	373 acres of other restoration work	134 acres of other restoration work	N/A
Pyle	Active/ Moderate	Completed 372 acres of mechanical fuels treatment.	N/A	N/A	N/A	N/A	N/A
Shirts	Active/ Low	Completed 66 acres of mechanical fuels treatment.	N/A	N/A	N/A	N/A	N/A
Silver Creek	Active/ High	Completed 1,273 acres of prescribed burning.	N/A	57 acres of other restoration work.	57 acres of other restoration work	53 acres restoration from FACTS database	Bull Creek Trail/Water Improvement Bull trout MIS study 626 acres of other restoration work
Upper Granite	Active/ Low	Completed 233 acres of mech. fuels treatment.	Completed 305 acres of mech. fuels treatment.	N/A	N/A	N/A	N/A
Warm Springs	Active/ Low	Completed 67 acres of prescribed burning.	N/A	N/A	N/A	551 acres of other restoration work	611 acres of other restoration work
Cavuse-Rough	Active/Moderate	N/A	N/A	N/A	N/A	See Pierce-Mennecke 2010.	N/A
Beaver Creek	Active/Low	N/A	N/A	N/A	24 acres restoration	N/A	N/A
Deer Creek (SF Boise River)	Passive/Moderate	N/A	N/A	2,516 acres of other restoration work	2,516 acres of other restoration work	N/A	Bull trout MIS study
Rattlesnake (MF Payette)	Active/High	N/A	N/A	Rattlesnake Creek AOP Project restored fish passage to 5.3 miles of inland habitat.	N/A	N/A	Rocky Canyon Rx burn
Lower Lime	Active/ Moderate	Completed 2100 acres of prescribed burning.	Completed 2350 acres of prescribed burning.	N/A	N/A	N/A	Bull trout MIS study

Subwatershed	WARS Restoration Strategy/Priority	2006	2007	2008	2009	2010	2011
Banks	Active/Moderate	Parking Area at Banks River Access closed to public access with barricades and seeded.	N/A	N/A	N/A	N/A	N/A
Lightning Creek	Passive/High	Ripped/seeded/ installed water bars on approximately 1.5 miles of user-developed ATV trail within the Airline Veg Mgmt. project area.	N/A	N/A	N/A	N/A	N/A
Tyndall-Stolle	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 & improved drainage on authorized roads to prevent erosion.	Lodgepole (2.7 mi) and Camp Creek (1 mi) anadromous fish barrier culverts removed. BAER. Planning for SFSR Rec. Mgt. Project to move dispersed rec sites away from SFSR at Stolle Meadows, rehab 3.1 mi unauth. road in Stolle Meadows. BAER – Cascade Complex – 1490 acres improved. 98 acres restoration	SFSR Rec. Access Mgt. Project. 3 miles stream restored (2 anadromous, 1 inland), decommissioned roads provided 3,072 acres of improved wildlife habitat. Bear Creek culvert on FS Road 474 replaced, provides 5 miles of bull trout spawning and rearing habitat.	SFSR Rec. Access Mgt. Project decommissioned approx. 30 miles of road. 4.5 miles stream restored.	Stolle WCC restoration proposals
Sixmile	Active/High	N/A	Sixshooter road decommissioning; reduced sediment delivery to 7 miles of Sixmile Creek. Decomm 3.4 miles of authorized road and removed13 miles of inaccessible authorized road.	N/A	N/A	N/A	Planning for Scriver: veg mgt. toward lg. tree class, 3 AOP culverts, rd. decom., reroutes, mtc Rocky Canyon Rx burn
Loosum-Reegan	Active/High	N/A	N/A	N/A	N/A	N/A	Bull Trout MIS study
Moores Creek	Active/Moderate	N/A	N/A	N/A	N/A	N/A	Bull Trout MIS study

Subwatershed	WARS Restoration Strategy/Priority	2007	2008	2009	2010	2011
Bear-Camp	Active/ Moderate	Contract awarded to replace barrier culvert on Wapiti Creek to restore fish passage to 3.6 miles of stream habitat.	N/A	414 acres restoration from FACTS database	N/A	N/A
Big Eddy	Active/ Moderate	Completed 11 acres of mech. fuels treatment.	N/A	N/A	N/A	N/A
Lightning Creek	Passive/ High	Completed 609 acres of mech. fuels treatment.	N/A	N/A	N/A	N/A
Rocky Canyon	Active/ High	Completed 30 acres of mech. fuels treatment.	N/A	N/A	N/A	Rocky Canyon Rx burn
Lewis-Clay	Active/ Low	Completed 84 acres of mech. fuels treatment.	Mores/Grimes Restoration Project. (see Pine subwatershed 2008)	Mores/Grimes Restoration Project. (see Pine subwatershed 2008) 27 acres restoration from FACTS database.	Mores/Grimes Restoration Project. (see Pine subwatershed 2008)	
Cottonwood Creek	Active/ Low	Completed 922 acres of prescribed burning, 129 acres of mech fuels treatment.	130 acres of other restoration work	3,773 acres restoration from FACTS database	N/A	Bull trout MIS study FACTS acres 153
Lambing-Trail	Active/ Moderate	Completed 173 acres of mech. fuels treatment.	178 acres of other restoration work	N/A	84 acres restoration from FACTS database.	
Lower Rattlesnake	Active/ Moderate	Completed 180 acres of mech. fuels treatment.	183 acres of other restoration work	N/A	1,905 acres restoration from FACTS database	FACTS acres 669
Upper Rattlesnake	Active/ Moderate	Completed 221 acres of mech. fuels treatment.	181 acres of other restoration work	N/A	35 acres restoration from FACTS database	FACTS acres 15
Abbot-Shake	Active/ Moderate	Completed 41 acres of mech. fuels treatment.	N/A	41 acres restoration from FACTS database	N/A	N/A
Lower Trinity	Active/ Low	Completed 3 acres of mech. fuels treatment.	3,250 acres of other restoration work	80 acres aspen regen.	1,045 acres restoration from FACTS database	N/A
Upper Trinity	Active/Low	N/A	N/A	N/A	48 acres restoration from FACTS database	Bull trout MIS study
Wagontown-Schoolhouse	Active/ Moderate	Completed 38 acres of mech. fuels treatment.	43 acres of other on work	22 acres of other restoration work	N/A	N/A
Grouse Creek	Active/Low	Completed 19 acres of mech. fuels treatment.	Installed highline at Grouse Lake to reduce sediment delivery to Grouse Lake (4.9 acres) 1 mi stream improved.	N/A	N/A	N/A
Eightmile Creek	Active/Moderate	N/A	654 acres of other restoration work	1,264 acres of other restoration work	21 acres of other restoration work	2,953 acres of other restoration work
Jackson-Fence	Active/Moderate	N/A	71 acres of other restoration work		95 acres of other restoration work	

Subwatershed	WARS Restoration Strategy/Priority	2008	2009	2010	2011
Tenmile Creek	Active/High	N/A	N/A	127 acres of other restoration work	N/A
Bull Trout	Passive/Moderate	16,384 acres of other restoration work	N/A	N/A	Bull trout MIS study FACTS acres 770
Blue Jay	N/A	967 acres of other restoration work	58 acres of other restoration work	N/A	Bull trout MIS study FACTS acres 18
Lower Smith Creek	Active/Moderate	305 acres of other restoration work	N/A	102 acres of other restoration work	
Upper Smith Creek	Active/Moderate	49 acres of other restoration work	303 acres of other restoration work	168 acres of other restoration work	Bull trout MIS study
Dollar	Active/High	NF Dollar Creek barrier culvert removed & channel restored (culvert not replaced) BAER 1.1 miles anadromous habitat restored. Planning for SFSR Rec. Mgt. Project to decomm. 27.8-31.1 mi of closed FS system roads.	SFSR Rec. Access Mgt. Project. 3 miles stream restored (2 anadramous, 1 inland) decommissioned roads provided 3,072 acres of improved wildlife habitat across Tyndall-Stolle and Dollar subwatersheds.	SFSR Rec. Access Mgt. Project (Tyndall-Stolle) and Dollar subwatersheds): surfaced Forest Road 474.2 with aggregate, placed barrier rock to manage recreation and decommissioned approximately 30 miles of road. 4.5 miles stream restored. 3,584 acres wildlife habitat improved	N/A
Sand	N/A	Peanut Creek fish barrier culvert removed and replaced with stream simulation culvert. BAER. 1.7 miles anadromous habitat restored.	N/A	See Trapper (Lower Johnson) subwatershed 2010	Johnson Ck. Watershed Imp. Johnson Meadow Enhance.
Upper SF Salmon River	Active/High	N/A	N/A	Approximately 3 miles of Rice Creek Road was graveled .16 miles stream habitat improved	N/A
Grandjean	Active/High	The double culverts on Wapiti Creek, were replaced 3.6 miles of inland stream restored.	N/A	N/A	N/A
Sams-Lorenzo	Passive/Moderate	N/A	10,781 acres of other restoration work	N/A	Deadwood Bull Trout Study
Bear- Camp	Active/Moderate	N/A	N/A	N/A	N/A
Upper Grimes		Bull Trout MIS study	N/A	N/A	N/A
Scriver Creek	Active/High	N/A	N/A	Benefits wildlife/ improves riparian conditions.	N/A

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

In earlier Monitoring and Evaluation Reports, the Forest reported on those elements with 2- or 3-year reporting requirements. The discussion of those elements is summarized below to provide continuity with subsequent years' reports.

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

Monitoring Question (28a): Are management actions providing for, or moving toward, the extent of vegetation components necessary to meet the needs of TEPC species? (Five-year reporting)

Answer: As in FYs 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 (39): 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)

Answer: There have been seven years of IIT effectiveness monitoring since the Forest Plan was signed in 2003. Boise NF summaries have been completed through 2007. Summaries for 2008 through 2011 are in process and will be reported in FY 2013, along with 2012 summaries.

Between 2004–2007, the IIT effectiveness monitoring effort sampled:

- 2004 - 17 [managed] integrator reaches and 1 [reference] integrator reach
- 2005 - 10 [managed] integrator reaches and 4 [reference] integrator reaches
- 2006 - 29 [managed] integrator reaches
- 2007 - 15 [managed] integrator reaches and 1 [reference] integrator reaches
- Total - 92 integrator reaches

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 19 summarizes the results from the 31 IIT integrator reaches sampled in 2004-2005 for these five WCIs, while Table 20 summarizes the results from those reaches sampled in 2006-2007.

Table 19. Status of Five 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
Stream bank 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 20. Status of Five 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
Stream bank 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 19 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 19 suggest than specified WCIs are being maintained in a similar condition in both managed and reference watersheds. In Table 20, 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 (38): 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)

Answer: Temperature loggers were deployed in bull trout MIS patches from 2008 through 2011 (see "3. Population trends of the management indicator species will be monitored and relationships to habitat changes determined" in this report). With the exception of six patches, all surveyed patches had temperatures suitable to fully support bull trout (annual Bull Trout MIS reports are available from the Forest fishery biologist 2008 Final, 2009-2011 Final).

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.

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 in-channel 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).

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 sub classification of the aquatic life beneficial use.

The Forest works closely each year with the IDEQ). IDEQ's surface water program routinely monitors Idaho's waters through the Beneficial Use Reconnaissance Program (BURP). Every 2 years, IDEQ is required by the Federal Clean Water Act to conduct a comprehensive analysis of Idaho's water bodies to determine whether they meet state water quality standards and support beneficial uses or if additional pollution controls are needed. This analysis is summarized in an "Integrated Water Quality Monitoring and Assessment Report" (Integrated Report), which is submitted to the U.S. Environmental Protection Agency (EPA) for approval. The report serves as a guide for developing and implementing water quality improvement plans (total maximum daily loads, or TMDLs) to protect water quality and achieve Federal and state water quality standards. An integrated report must be approved by the EPA before it can be used by a state to guide its management decisions.

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. 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 in-channel sediment that can be used to gauge whether water quality changes are occurring.

Using BURP and other data and the methods described in the (WBAG), IDEQ determines if each of Idaho's water bodies meets water quality standards and supports beneficial uses. IDEQ submits an "Integrated Report" to EPA every 2 years that identifies and prioritizes the state's water quality problems. This report is based on the data collected through IDEQ'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.

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 IDEQ 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, IDEQ 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.

Idaho's 2002 integrated report was completed by IDEQ 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. Updated summaries are expected in 2012 for 2006 through 2010. These results will be reported in the September 2013 monitoring report.

Disclosure of Management Actions

Monitoring Question (2): Are proposed actions and associated effects being adequately disclosed in NEPA documents? (Three-year reporting)

Answer: 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 (3): Are current processes meeting the needs for consultation? (Three-year reporting)

Answer: The Forest has consultation protocols with the three Tribes that have expressed interests and rights on the Boise NF; the Shoshone-Paiute, Shoshone-Bannock, and Nez Perce Tribes. To date, all parties have indicated the protocols in place meets their consultation needs.

Coordination with Tribes

Monitoring Question (4): Are traditional cultural resources and special interest areas being considered and maintained? (Three-year reporting)

Answer: 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 effects to these properties have been avoided, mitigated or otherwise resolved.

State and Local Government Participation with the Forest

Monitoring Question (5): Are current processes such as commission appearances, field reviews, etc., meeting coordination needs? (Three-year reporting)

Answer: State and local government engagement with the Boise NF planning activities continues to be active.

In many respects the dialogue has focused on routine presentations at county commissioner meetings, or special briefings with State agencies such as the IDPR, IDFG, Idaho Department of Commerce, and the Governor's Office. County commissioners at Boise, Valley, Gem, and Elmore Counties are very engaged with national forest projects and proposals.

The WCS amendment in 2010 involved extensive briefings pertaining to vegetation and terrestrial wildlife management and that effort prompted better understanding of the amendment for elected officials, and agency representatives. That strategy, and the accompanying Forest Plan Aquatic Conservation Strategy, largely set a clear direction for forest management goals, objectives, and project implementation that is understood and overall supported.

Dissenting opinions and discussion regarding LRMP direction largely revolve around the flow of goods and services (primarily wood fiber), mining proposals or activities, or implementation of specific NEPA projects with specific project concerns.

The introduction of the Boise Forest Coalition, a mixed public land based interest group, has directly engaged local and state representatives and added to the community perspectives of how the LRMP plan decisions might guide the implementation of projects.

Those discussions have been fruitful in allowing the full integration of the LRMP goals and objectives to become quite visible when project details are discussed. The Coalition has been successful in maintaining current relevancy for the 2003 ROD and stimulated the resolution of state and local agency concerns with the differing values that often come with public land management.

Forest management officials make a strong effort to maintain contact frequently with State and local government through presentations at public meetings, field trips, or specific briefings. District Rangers review on a regular basis anticipated projects with explanations of how they meet LRMP goals, objectives and direction. Upon request, Forest management officials provide special briefings and this has clearly provided enhanced coordination with State and local goals and objectives.

Recreation Use Conflicts

Monitoring Question (12): Are conflicts rising between recreational uses? (Three-year reporting)

Answer: There are no reported significant conflicts between recreation user groups during the monitoring period. The Forest receives occasional complaints from people regarding motorized use areas. Conflict exists between equestrian riders, motorized users, and hikers.

The travel planning efforts through 2009 reduced conflicts between cross-country motorized-users, hunters, and other recreationists. The Emmett RD completed travel planning in 2009 and the Mountain Home RD finished it in 2008. These complement analyses completed in 2007 on the Cascade, Lowman, and Mountain Home RDs. Based on these decisions, MVUMs that display the designated system of roads and trails open to motor vehicle use have been developed and made available to the public. These efforts implement the Forest Service's National Travel Management Rule, eliminating cross-country motorized travel and identifying the permanent motorized road and trail system. MVUMs are available to the public free of charge, and are updated each year as new decisions are made and projects are implemented.

Dispersed Recreation Use and Distribution

Monitoring Question (14): What level of use is occurring in dispersed sites and what impacts are occurring to other resource values? (Three-year reporting)

Answer: The Forest identified and corrected impacts to aquatic, soil and vegetation resources, resulting from unmanaged dispersed recreation, during the monitoring period. The primary method for dealing with the impacts of dispersed recreation have been through Forest travel planning, and through individual, drainage level, projects that eliminated user-created routes and implemented designated-dispersed camping sites in targeted areas. Projects designed to minimize and correct damage caused by indiscriminate dispersed camping have been implemented on each district. MVUMs display the designated system of roads and trails open to motor vehicle use have been developed and made available to the public. The MVUM also identifies areas adjacent to motorized roads and trails where dispersed motorized camping is authorized. This use is restricted to within 300' of designated routes as shown on the MVUM.

Actual Daily and Seasonal Use vs. Use Capacity

Monitoring Question (16): What level of use is occurring in special use areas, including recreation sites (e.g., downhill ski areas)? (Three-year reporting)

Answer: 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 3 years" to "every 5 years." As a result, this element will be reported in the 10th year monitoring report.

Developed Site Use and Distribution, and Resource Impacts to Sites

Monitoring Question (14): What level of use is occurring in developed sites and what impacts are occurring to other resource values? (Three-year reporting)

Answer: The Forest identified and corrected impacts to aquatic, soil and vegetation resources, resulting from unmanaged dispersed recreation, during the monitoring period. The primary method for dealing with the impacts of dispersed recreation have been through Forest travel planning, and through individual, drainage level, projects that eliminated user-created routes and implemented designated-dispersed camping sites in targeted areas. Projects designed to minimize and correct damage caused by indiscriminate dispersed camping have been implemented on each district.

MVUMs completed from 2007 through 2011 display the designated system of roads and trails open to motor vehicle use have been developed and made available to the public. The MVUM also identifies areas adjacent to motorized roads and trails where dispersed motorized camping is authorized. This use is restricted to within 300 feet of designated routes as shown on the MVUM.

Level of Trail Maintenance Relative to Trail Use

Monitoring Question (18): Are trails being maintained for anticipated levels of use? (Three-year reporting)

Answer: An additional 100 miles of trail maintenance and several trail bridge replacements were completed in 2010 through the use of Recovery Act Funds.

The 1,985 miles of trails on the Forest are maintained per their planned maintenance cycles. Maintenance cycles vary according to level and type of use and the objectives for the management area in which the trail lies. Trail maintenance plans must remain flexible to allow crews to react to unplanned events such as wild fire, avalanche, or floods which may cause a need to increase maintenance for a period of years after the event.

Trails are maintained with Forest Service crews, contract crews, youth corps, volunteers from motorized and nonmotorized recreation groups, IDPR grants and crews, and costs share agreements across the forest between IDPR, counties and Forest Service for county grooming programs. User groups such as the Backcountry Horseman, Idaho Trails Association, and local ATV clubs have all been actively involved in volunteering time and funding trail maintenance and construction work.

Stewardship of Historic Properties

Monitoring Question (22): Are historic properties being managed to standard? (Three-year reporting)

Answer: 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. As a result, this element will be reported in the 10th year monitoring report.

Gathering Activities on the Forest

Monitoring Question (23): Are forest gathering activities resulting in resource depletion (i.e., mushrooms, bear grass, huckleberries)? (Three-year reporting)

Answer: No permits for forest gathering activities have been issued in the 7 years since the Forest Plan was implemented, which resulted in resource depletion. Most activities are associated with research and small commercial botanical operations collecting mushrooms. In addition to commercial and research activities, some minor, incidental gathering for personal use may be occurring. There is no indication that these combined activities are resulting in resource depletion.

Botanical Species of Concern, Watch Species and Sensitive Species

Monitoring Question (30): Are Forest management actions affecting known sensitive species or watch species habitats at the project level? (Three-year reporting)

Answer: In 2011, the CuMo exploratory mining project was implemented. This project has resulted in minor impacts to Sacajawea's bitterroot. Close project monitoring is ongoing to ensure impacts are minimized.

In years prior to 2011, 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 Element (31): Are management actions and Forest Plan direction effectively maintaining or restoring long-term soil productivity? (Three-year reporting)

Answer: Several types of management activities can directly or indirectly influence soil quality, either temporarily or over short- or long term timeframes. Proposed activities are first evaluated for consistency with applicable Forest Plan standards and guidelines and then monitored to ensure the physical, biological, and chemical components necessary for soil quality are maintained or, where needed, restored to move toward desired conditions. Types of monitoring ranges from interdisciplinary team (IDT) review of implemented projects or resource-specific monitoring and assessment of soil impacts from selected activities.

Forest management activities that often raise concerns for soil quality are vegetation treatments such as commercial timber harvest (including mechanical fuels treatments), prescribed fire, wildland fire to achieve multiple objectives, and livestock grazing allotments. While it is common for vegetation management activities to directly impact soil quality, most effects are limited to temporary or short-term timeframes while providing conditions to support desired vegetation growth and to minimize effects of naturally occurring wildland fires over the long term. In the case of livestock grazing, detrimental effects to soil quality seldom occur from authorized livestock grazing across the majority of the allotment. Localized detrimental impacts do occur where livestock concentrate (near water, shipping corrals, etc.); however, these disturbances generally do not exceed 15 percent as defined by Forest Plan Standard SWST02. The following table highlights a few projects implemented since 2003 that were evaluated using different monitoring methods: IDT, soil disturbance monitoring protocol (FSDMP) (Page-Dumroese et al. 2009), soil health assessments (SHA), or Burn Area Emergency Response assessments (BAER) (USDA 2010). The individual project monitoring sheets that summarize the monitoring activities and associated data can be obtained by contacting the Boise NF soil scientist.

Table 20a. Sample of Projects Implemented Since 2003 Evaluated Using Different Monitoring Methods.

Activity	Monitoring Methodology	Conclusions / Summary of Results
Airline Timber Sale (D6)	IDT Review 2007/SHA	Detrimental disturbance (DD) is within the Forest Plan criteria of less than 15 percent for each activity area after completion of project. Temporary (but not detrimental) disturbance occurred in units where ground-based log yarding was limited to 2 or 3 passes by equipment. In larger units active restoration of skid trails resulted in short term detrimental effects. Residual detrimental compaction on disconnected sections (usually less than 100 linear feet) of primary skid trails accounts for a range of 3 to 8 percent DD across the harvest units. Although these impacts will passively recover and incrementally decrease over time, the DD is estimated to exist for 10 to 15 years.
Amber Timber Sale (D3)	IDT Review 2003/FSDMP	Detrimental disturbance (DD) is within the Forest Plan criteria of less than 15 percent for each activity area after completion of project. Specific units (1B, 2C, 2D) approached 20 percent DD after completion of timber harvest activities. The District Timber Management Assistant initiated actions to address inadequately reclaimed skid trails and slash piling, bringing the level of ground disturbance into compliance with Forest Plan direction.
Boise Basin Experimental Forest Rx Fire (D3)	BAER / RMRS (Elliot and Glaza 2008)	Prescribed fire did not result in severely burned soils. Prescribed fire (to emulate wildland fire) in June 2006 burned at moderate to high intensity with low soil burn severity. Duff layers in burn units remained intact with average thicknesses of 1 to 3 inches. Timber harvest was completed in 2009 and 2010 using ground based yarding equipment (tractor and cable). Secondary skid trails resulted in temporary detrimental disturbance across roughly 10 percent of the units.
Warm Springs Ridge Rx Fire (D3)	IDT Review (2005-07)	Numerous prescribed burns implemented since the fall of 2005 (Charcoal Gulch, McIntyre Gulch, Warm Springs North). Detrimental impacts to soil quality from severely burned soils were not identified.

Activity	Monitoring Methodology	Conclusions / Summary of Results
EF Warm Springs (D5)	FSDMP	Unit 1 = 7%, Unit 2 = 0%
Gregory Timber Salvage	IDT Review (2007)/SHA	The Gregory Wildfire (2005) burned about 1,200 acres of NFS lands that were recently commercially and noncommercially thinned. Fire intensity was mostly high, burning the activity fuels as well as any remaining large coarse woody debris. Salvage harvest was implemented on roughly 558 acres (2006-07). IDT review concurred that ground based logging during the winter using the network of existing skid trails and helicopter logging in the spring was effective at minimizing detrimental disturbance, although ripping and reshaping log landings and tilling/scattering slash on skid trails was not properly implemented. The post-treatment conditions with slash distributed across the harvest units were effective in reintroducing organic material consumed by the wildfire.
Lime Creek Rx Fire (D1)	IDT Review 2003 and 2005/SHA	Observations by the Forest IDT noted severely burned soils are less than 15 percent (within Forest Plan Standard SWST02) in the "target areas" where the goal is to set back or eliminate conifer encroachment and reduce competition with aspen. While prescribed fire did increase bare soil conditions in localized areas, and residual coarse wood, hill slope obstructions, and unburned patches provide buffers to minimize potential for accelerated erosion with increased sediment delivery to nearby channels. Subsequent to the prescribed fire treatments, snowmelt runoff and spring/summer rain storms have not displaced surface soils, no rills or gullies were observed.
Lucky Salvage (D6)	FSDMP	None of the units sampled exceeded 15% detrimental disturbance (DD) as defined by Forest Plan Standard SWST02 (Unit 1 = 0; Unit 2 = 5%; Unit 3 = 0; Unit 4 = 8%; Unit 5 = 0). The most common adverse effect was rutting and compaction from tractor equipment. Disturbance from salvage was evident in all salvage units. Localized, discontinuous patches (less than 5 acres) of existing DD from severely burned soils existing outside of the salvage units.
Road Fork (D5)	FSDMP	None of the units sampled exceed 15% detrimental disturbance (DD) as defined by Forest Plan Standard SWST02 (Unit 20 = 7%; Unit 25 = 3%). Harvest activities were completed in 2006; residual DD was identified in skid trails where platy soil structure from compaction was observed at depths of 10cm (~4 inches).

Another aspect of the forest plan direction is active restoration of lands having existing impaired soil quality that have been impacted either from land management activities or naturally occurring events. Restoration activities that promote soil-building processes that move impaired conditions towards improving trends for soil quality have been implemented since 2003. Key projects include:

- Boise Peaks user-created trails decommissioning - 6 miles (2005)
- Timber Gulch Restoration watershed restoration - 3 acres (2005)
- Elk Creek Dams/riparian plantings for watershed restoration - 5 acres (2004)
- Pidgeon Flat seeding - 1 acre (2004)
- Rammage Meadows stabilization - 2 acres (2004)
- Upper Middle Fork Payette Road Decommission (1.1 miles) – 4 acres (2006)
- Boiling Springs Trailhead reconstruction stabilization and access restrictions – 2 acres (2004)
- Lower Clear Creek dispersed recreation management (closure and rehabilitation) – 8 acres (2004)
- Bear-Hunter Road Decommissioning - 120 acres (44 miles of classified roads) (2004)
- Rabbit Creek Road Decommissioning - 600 acres (114 miles system roads, 87 miles unclassified roads) (2005)
- South Fork Salmon user developed trail closure and rehabilitation – 19 acres (2006)
- Rock Creek road decommissioning (3.1 miles system roads, 5 miles unclassified roads) – 24 acres (2006)

- Sagehen dispersed recreation management (closure and rehabilitation) – 4 acres (2006)
- Mores Creek Riparian and Floodplain Restoration – 3 acres (2006-07)
- Airline road/trail decommissioning (1.5 miles of user developed trails) – 3 acres (2006)
- Noxious Weed Treatments (through 2008)

A third approach for maintaining and protecting soil quality is the use of management decisions that eliminate or prohibit certain activities. Travel Management actions that address motorized vehicle use across the Forest has resulted in the development of MVUMs that prohibit cross-country summer off-highway motorized vehicle (OHV) travel on unauthorized routes. Motorized OHV travel during summer seasons is restricted to designated roads and trails. 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 (33): Are management actions maintaining or restoring the distribution, abundance, and habitat quality of management indicator and TEPC species? (Three-year reporting)

Answer: Data collected in 2010 to 2011 were compared with data collected in prior years to provide a preliminary indication of trend in bull trout distribution across the planning unit. The results are listed in Table 15. The results indicate an increase in distribution of bull trout over the last 3 years. Bull trout were probably present, but previously undetected, in many of the patches that were reclassified as occupied (stratum 1) in the last 3 years. However, data from a few of these reclassified patches indicates recently founded populations, based on the limited number of age classes detected. Table 15 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.

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, currently listed as threatened species.

Monitoring results indicate an increase in distribution of bull trout over the last 7 years. Bull trout were probably present, but previously undetected, in many of the patches that were reclassified as occupied (stratum 1) in the last 7 years. However, data from a few of these reclassified patches indicates recently founded populations, based on the limited number of age classes detected. Table 15 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.

Landslide Prevention

Monitoring Question (36): Are management actions and Forest Plan direction effectively preventing management-induced landslides? (Three-year reporting)

Answer: In previous years, landslide prone (LSP) assessments from project level NEPA analyses were reviewed, focusing on vegetation treatment activities (commercial and noncommercial thinning, and prescribed fire). A total of 11 landslide prone assessments were reviewed.[29]

To date, no landslides are 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.

An example of implementing the Forest Plan LSP management direction occurred during the 2009 Eightmile Creek Fire (managed for resource benefit). Utilizing the coarse and fine-filter step down process for managing LSP areas, the Lowman RD IDT recommended a management action point to employ fire suppression tactics and prevent fire spread with potentially undesirable fire effects from burning high hazard LSP areas upslope of important stream habitat occupied by bull trout, an ESA listed species. The fire suppression tactics were successfully implemented, which were immediately followed by rainfall estimated at 1.7 inches over a 3-day period and no initiation of landslides.

Noxious Weed Prevention

Monitoring Question (40): Are Forest Plan standards and guides effect in preventing establishment of new noxious weed infestations? (Three-year reporting)

Answer: The following table lists current infestations by weed species as of 2012. Note that the table does not include all rush skeletonweed or Canada thistle infestations. These species are wide spread across the Forest and all infestations have not been inventoried.

[29] White Flat (Mtn. Home RD); Star Ranch (Idaho City RD); South Fork Fire Salvage, Upper Middle Fork Payette Timber Sale, 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).

Table 21. Acres of Infestation by Weed Species on the Boise National Forest.

Weed Species	Acres Infested
spotted knapweed	70,627
rush skeletonweed	11,349
Dalmatian toadflax	6,867
gypsyflower	3,462
Canada thistle	2,418
diffuse knapweed	824
field bindweed	787
butter and eggs	722
leafy spurge	619
puncturevine	183
whitetop	155
Fuller's teasel	92
hoary alyssum	64
oxeye daisy	42
yellow star-thistle	28
Scotch cottonthistle	25
sulphur cinquefoil	7
purple loosestrife	7
nodding plumeless thistle	3
orange hawkweed	3
jointed goatgrass	2
Grand Total	**98,284**

New acres of noxious weed infestations have been identified in 2011 at similar rates as previous years. However, it is believed that the number of new sites is low due to a function of inventory and reporting procedures, and is not indicative of true infestation numbers. It is likely that new infestations are occurring, especially along roads and trails, and in recreation areas.

The Forest has observed new infestations of rush skeletonweed, Dalmatian toadflax, spotted knapweed, and whitetop. Due to the large size of infestations adjacent to the Forest, and the ability of the seed source to be easily transported by wind, water, and human and animal vectors, it is highly likely that we will continue to observe new infestations along roads, trails, and waterways on the Forest.

The Forest has placed emphasis on providing educational and outreach opportunities to the public, in order to heighten the awareness of noxious weeds and their threat to our Forest ecosystems. By educating our Forest visitors on the threats of noxious weeds, how to identify them, and how to report infestations, we feel new infestations would be identified and eradicated before they have the opportunity to establish and spread seed.

In 2010 and 2011, based on field surveys, NEPA project analyses and reviews, and other methods, very few new acres of noxious weed infestation were reported. 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 and rapid response plans. This program places additional emphasis on detecting and eradicating new infestations in previously weed-free areas such as the Bear Valley basin described above. Plans developed in 2007 have been implemented in 2008 through 2011. The Idaho City RD is participating in this type of approach in the Sawtooth Wilderness in cooperation with the SNRA. 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.

As reported in earlier monitoring reports, 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 (41): Are Forest management strategies effective in preventing further expansion of established noxious weed populations? (Three-year reporting)

Answer: Although there is the potential that not all infestation are being recorded and reported in the database in a timely manner; on a large scale, Forest management strategies appear to be effective in preventing further expansion of established noxious weed populations.

This is evident through the number of success stories across the Forest. For example, several rush skeletonweed plants were found in the upper headwaters of Bear Valley Creek near 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's efforts were successful, and rush skeletonweed had not been found in the area, nor has it moved north on the Forest.

Forest cooperators, such as the CWMAs and County Weed Superintendents have reported to the Forest, that infestations they have been treating over the past years are reducing in size. It appears the large infestations are contained and reduced, and smaller scattered plant sites are being treated and eradicated.

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 was 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 2011 include the Scriver Integrated Resource Management project (Emmett RD) and the Clear Creek Project (Lowman RD).

Noxious Weed Control and Eradication

Monitoring Question (42): Are Forest management strategies effective in controlling or eradicating targeted populations of noxious weeds? (Three-year reporting)

Answer: Although there is the potential that not all infestation are being recorded and reported in the database in a timely manner; on a large scale, Forest management strategies appear to be effective in controlling or eradicating targeted populations of noxious weed.

This is evident through the number of success stories across the Forest. For example, several rush skeletonweed plants were found in the upper headwaters of Bear Valley Creek near 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's efforts were successful, and rush skeletonweed had not been found in the area, nor has it moved north on the Forest.

Forest cooperators, such as the CWMAs and County Weed Superintendents have reported to the Forest, that infestations they have been treating over the past years are reducing in size; thus, being controlled. It appears the large infestations are being controlled and reduced, and smaller scattered plant sites are being treated and eradicated.

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. How these acres increase or decrease over the 10- to15-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 (47): Are established utilization levels providing for desired ground cover, soil stability, plant vigor and composition? (Three-year reporting)

Answer: Based on data from within-season grazing use 'triggers' and monitoring from yearend grazing use, livestock grazing on the Forest in 2010 and 2011 generally met the use standards identified in the Forest Plan. From long-term monitoring data, it appears that when grazing use 'triggers' were used according to Allotment Management Plans and grazing use followed Annual Operating Instructions, established utilization levels are providing for adequate ground cover, soil stability, and plant vigor and composition.

Similarly, based on data from within-season grazing use "triggers" and monitoring from year-end grazing use, livestock grazing on the Forest in earlier years indicate use standards are generally met per 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 modified management in the next grazing season during development of Annual Operating Instructions for these allotments, as appropriate.

II-4. Summary of Monitoring Elements Found in Table IV-2 of the Forest Plan with Five-Year or Greater Reporting Requirements

As a result of the 2010 Forest Plan amendments, forestwide desired conditions for forested vegetation changed due to the reallocation of MPC 5.2 areas to MPC 5.1. In addition, vegetation information has been updated to reflect changed conditions resulting from unplanned wildland fire and planned management activities. To establish a new vegetative baseline condition for which future vegetation monitoring can be compared, the following two vegetative monitoring questions have been addressed in detailed assessments completed. The answers to these baseline vegetative questions are summarized below.

Vegetation Restoration

Monitoring Question (25): Is live vegetation at, or moving towards, desired conditions described in Appendix A of the Forest Plan?

Answer: The FYs 2008 and 2009 Monitoring and Evaluation report displayed the comparison of the forest-wide vegetative conditions used to develop the 2003 Forest Plan against the "refreshed" forest-wide data used to conduct the analysis for the 2010 Forest Plan amendment. The refresh was an interim attempt to update the mid-scale map with changes that had occurred through 2007. In total, about 431,250 acres of the forest-wide vegetation product used for the 2003 Forest Plan revision were adjusted; the majority of the change was the result of wildfire. Little wildfire (152 acres) or other vegetative change occurred in 2008 and therefore, the refreshed product was considered the vegetative condition through 2008. In that same year, the Forest initiated a multi-year project to replace the "refreshed" data with a new forest-wide vegetation layer to be completed in FY 2012.

The analysis of the vegetative conditions relative to the Appendix A desired conditions using the mid-scale map products were presented in the FEIS for the 2010 Forest Plan amendment in Section 3.2 Forested Vegetation Diversity and Fire Regime Condition Class. The summary of the findings are as follows:

- No potential vegetation groups (PVGs) fell within the desired condition ranges for tree size class, canopy cover class or species composition in combination;
- All PVGs exceeded the high end of the desired condition range for grass/forb/shrub/seedling;
- PVGs 1, 3, 6 and 4 fell within the desired condition range for medium tree size class; PVGs 2, 5 and 10 exceeded the high end of the range, and PVGs 7 and 11 fell below the low end of the range;
- All PVGs that have large tree size class (PVGs 1, 2, 3, 4, 5, 6, and 7) fell below the low end of the desired range;

- Most PVGs did not meet the desired range for the canopy cover class of the large (or medium) tree size class. Of the 54 possible combinations, there were only 4 instances where the desired range was met;
- Species composition in PVGs 1, 2 and 5 were the farthest from desired conditions. PVGs 3 and 6 were departed but less so than PVGs 1, 2 and 5. PVGs 4, 7 and 11 were closest to desired conditions. For PVGs 1, 2 3, 5 and 6 there was not enough early seral species and too much later seral to climax species composition.

Desired condition ranges for tree size class and canopy cover class contained in Appendix A of the Forest Plan were modified by the 2010 amendment. This was due to the replacement of areas assigned to Management Prescription Category (MPC) 5.2 in the 2003 Forest Plan to MPC 5.1 in the 2010 amendment. MPC 5.2 had a different set of desired condition ranges for tree size class and canopy cover class than the other MPCs. By eliminating MPC 5.2, desired condition ranges are now the same forest-wide.

Though the 2003 Forest Plan identified the lack of large tree size class, particularly in PVGs 1, 2, and 5 (nonlethal fire regime) and PVGs 3 and 6 (mixed1 fire regime) as a vegetative condition of concern, direction in the 2003 Forest Plan was modified to highlight restoration of large tree size class, and associated attributes including old forest habitat, as a priority. Wildlife standard WIST01 which alluded to the mid-scale vegetation map as the dataset for assessing the standard was deleted and VEST03, which refers to forest-wide inventory, was added. This is consistent with the Region 4 protocol of using inventories to determine quantities of vegetation and mid-scale maps to display distribution. Therefore, starting in FY 2010 forest-wide trends relative to the desired conditions will be evaluated using data collected by the Forest Inventory and Analysis (FIA) (hereafter referred to as the A Grid) supplemented with inventory data collected by the Boise National Forest (hereafter referred to as the B Grid).

There are a total of 728 A and B Grid points across the Boise NF. Of these 577 are forested, 126 are non-forested, and 5 fall into water. As of FY 2010, there were 57 plots that had not been sampled, were missing data, or required further validation. Over time, these plots should come online as data are updated during the next sampling cycle. Therefore, of the 577 forested plots, 520 were used to generate this analysis.

Desired conditions in the 2010 Forest Plan are presented by PVG. Table 22 displays the current tree size class distribution for the forest compared to the Appendix A desired conditions for each PVG grouped by fire regime. Based on an assumption that 40 or more plots are required to develop statistically reliable estimates and analysis, there are insufficient numbers of plots to compare all but three PVGs to the desired conditions. The PVGs that meet the 40 plot criterion are PVG2, PVG 4, and PVG 7. Therefore, inventory data were pooled to the fire regime by developing weighted averages based on number of plots in each PVG. Desired conditions were pooled using the same method. However, even based on this pooling, the lethal fire regime is one plot short of meeting the criteria (Table 23). In some cases data are displayed for this fire regime but statistical tests are not included. As data for the 57 unmeasured plots are collected in the future, likely sufficient data will be available to develop statistical tests for all fire regimes.

Table 22. Current Conditions for Tree Size Class Compared to the Appendix A Desired Conditions by PVG and Fire Regime.

PVG	N	GFSS		Sapling		Small		Medium		Large	
		DC	2010	DC	2010	DC	2010	DC	2010	DC	2010
Nonlethal Fire Regime											
1	17	1-12	35	2-12	12	2-18	12	3-19	29	47-91	12
2	137	4-5	26	3-7	3	5-21	10	7-35	29	59-80	32
5	5	3-4	40	3-7	0	4-22	0	7-30	20	66-84	40
Mixed1 Fire Regime											
3	37	9	22	9	5	18-27	5	23-36	30	23-41	38
6	33	7-8	3	7-9	0	11-27	3	18-36	18	28-56	79
Mixed2 Fire Regime											
4	51	14-15	14	7-9	0	19-22	6	24-36	45	20-34	35
7	177	7-16	28	11-15	2	21-22	13	32-36	36	10-21	21
11	24	9-15	33	14-15	4	19-22	21	22-38	38	14-27	4
Lethal Fire Regime											
8	10	15-17	10	11-15	0	22-23	20	28-29	50	18-21	20
9	9	13-15	22	8-15	0	17-22	11	25-29	44	31-37	22
10	20	16-23	20	11-16	25	46-48	30	11-20	25	N/A	N/A

Table 23. Current Conditions for Tree Size Class Compared to Appendix A Desired Conditions by Fire Regime.

PVG	N	GFSS		Sapling		Small		Medium		Large		Meets DC
		DC	2010	DC	2010	DC	2010	DC	2010	DC	2010	
Nonlethal	159	4-6	27	3-8	4	5-21	10	7-34	29	58-81	30	No
Mixed1	70	8-9	13	8-9	3	15-27	4	21-36	24	25-48	56	No
Mixed2	252	9-16	26	10-14	2	20-22	12	29-36	38	12-24	22	No
Lethal	39	15-20	18	10-16	13	33-36	23	19-24	36	12-14	10	N/A[a]

[a]Insufficient number of plots to conduct statistically reliable tests

Tree size classes and other Appendix A attributes were compared to desired conditions using the Chi-square Goodness-of-fit Test at the 0.05 significance level by fire regime. Based on this test, none of the fire regimes meet desired conditions. The nonlethal, mixed1 and mixed2 fire regimes exceed the high end of the range of desired conditions for the grass/forb/shrub/seedling (GFSS) tree size class. The nonlethal fire regime is below the low end of the desired condition range for large tree size class, the mixed1 fire regime exceeds the high end, and the mixed2 fire regime falls within. The distribution of other tree size classes relative to the desired conditions also varies by fire regime.

Though the amount of area across the forest is below the desired condition for the large tree size class in the nonlethal fire regime, the distribution of the large tree canopy cover class meets desired condition (Table 24). However, none of the other fire regimes are within desired condition for large tree canopy cover class. Within both the mixed1 and mixed2 fire regimes, too much is in the low and not enough is in the moderate canopy cover class in the large tree size class.

Table 24. Current Conditions for Large Tree Size Class Canopy Cover Compared to Appendix A Desired Conditions by Fire Regime.

PVG	N	Low		Moderate		High		Meets DC
		DC	2010	DC	2010	DC	2010	
Nonlethal	48	60-80	67	20-40	31	0	2	Yes
Mixed1	39	3-23	41	77-97	55	0	4	No
Mixed2	57	4-20	67	80-96	31	0	2	No
Lethal	9[a]	--	--	--	--	--	--	--

[a]Insufficient number of plots to conduct statistically reliable tests

Large tree size class species composition does not meet desired condition for any fire regime (Table 25). In the nonlethal fire regime, there is not enough early seral ponderosa pine as there is too much late-seral/climax Douglas-fir. This is also the case for the mixed1 fire regime in that early seral western larch and ponderosa pine are under-represented while Douglas-fir, which is a mid-seral species in the mixed1 fire regime, is over-represented. In the mixed2 fire regime, early seral whitebark pine and lodgepole pine are under-represented. Douglas-fir, which is an early to mid-seral species in the mixed2 fire regime, is over-represented.

Table 25. Current Conditions for Large Tree Size Class Species Composition Compared to Appendix A Desired Conditions by Fire Regime.

PVG	N	PIAL		LAOC		PICO		PIPO		PSME		Meets
		DC	2010	DC	2010	DC	2010	DC	2010	DC	2010	DC
Nonlethal	48	--	--	--	--	--	--	83-88	74	9-15	25	No
Mixed1	39	--	--	7-14	0	--	--	25-41	18	32-48	52	No
Mixed2	57	3-4	0	--	--	23-36	1	--	--	30-40	84	No
Lethal	9[a]	--	--	--	--	--	--	--	--	--	--	--

[a]Insufficient number of plots to conduct statistically reliable tests

Overall, none of the fire regimes meet desired conditions (Table 26). While some attributes are within desired for some fire regimes, no one fire regime is meeting all the attributes in combination. In the nonlethal fire regime, though the canopy cover class distribution meets the desired condition for the large tree size class, the amount of large tree size class is below the desired as is the representation of ponderosa pine, the early seral species in this fire regime (Table 25). In the mixed1 fire regime, though the amount of large tree size class exceeds the desired condition, there is too much in the low canopy cover class and early seral species like western larch and ponderosa pine are under-represented. The same is true for the mixed2 fire regime though the amount of large tree size class meets the desired condition.

Table 26. Relationship of Large Tree Size Class, Large Tree Size Class Canopy Cover, and Large Tree Size Class Seral Species to Desired Conditions by Fire Regime.

Fire Regime	Large Tree Size Class	Low Canopy Cover Class	Moderate Canopy Cover Class	Early Seral Species
Nonlethal	Below	Meets	Meets	Below
Mixed1	Above	Above	Below	Below
Mixed2	Meets	Above	Below	Below
Lethal	Below	--[a]	--	--

[a]Insufficient number of plots to conduct statistically reliable tests

From 2004 through 2008, approximately 459,350 acres were burned by wildland fire (wildfire and prescribed fire) or were treated mechanically. Of this, 358,360 acres (78 percent of the total) were affected by unplanned ignitions (wildfire) which included 21,070 acres of what is described in the Forest Plan as wildland fire use for resource benefits. Planned treatments (mechanical or prescribed fire) accounted for 100,990 (22 percent of the total) acres. Based on this, more than three times the number of acres were affected by wildfire than planned treatments. This is in part why most fire regimes exceed desired conditions for GFSS.

Insect and disease activity had been on the rise across the state of Idaho including the Boise NF from 1995 through 2004. During this 10-year period, mortality levels across the state were the highest ever recorded (2004 Idaho Forest Health Monitoring Highlights available at fhm.fs.fed.us/fhh/iregion.shtml). This was attributed to stress factors including drought, fire, overcrowding and the influence of other biological agents. The largest contributors to damage and mortality were mountain pine beetle, western spruce budworm and Douglas-fir beetle. Mountain pine beetle and white pine blister rust were causing extensive mortality in whitebark pine, including whitebark pine regeneration.

From 2004 through 2008 mountain pine beetle continued to be the principle damaging agent across the state (fhm.fs.fed.us/fhh/iregion.shtml). Most of the damage and mortality was in lodgepole pine through whitebark pine mortality was also extensive. In combination with fire, this may explain why lodgepole pine and whitebark pine are under-represented in the mixed2 fire regime. Western spruce budworm caused major damage to Douglas-fir, grand fir, and subalpine fir during this timeframe.

The 2010 amendment to the Forest Plan added standards regarding old forest habitat. This condition occurs within the large tree size class described in Appendix A and is based on attributes related primarily to large trees including canopy cover and species composition. There are also attributes for the canopy cover of trees less than 20 inches, and snags and coarse woody debris (CWD) (additional discussion regarding snags and CWD is presented below). Definitions for old forest habitat apply to all PVGs except PVG10 and are displayed in the 2010 Forest Plan Appendix E. Because Appendix E refers back to Appendix A trends relative to old forest habitat are described under this monitoring question.

Inventory plots were assessed to determine whether any met the attributes for old forest habitat. None of the plots currently meet all old forest habitat definitions in combination though some meet individual attributes (Table 27). Overall, the attribute that is least often met is canopy cover of live trees greater than or equal to 20 inches. For all PVGs, this is defined as greater than 30 percent canopy cover. In total, 15 of the 144 large tree size class plots meet this criterion. However, of these only one had the desired species composition, which for all PVGs is defined by a preponderance of early seral species. The one plot that met the definition for canopy cover and species composition was in PVG4.

Table 27. Percentage of Large Tree Size Class Plots that Meet or Do Not Meet Selected Old Forest Habitat Definitions by Fire Regime.

Fire Regime	Canopy Cover of Live Trees ≥20 inches		Number of Snags ≥ 20 inches		Tons of Coarse Woody Debris ≥15 inches	
	Percent of Plots Meeting or Not Meeting Definitions					
	Meeting	Not Meeting	Meeting	Not Meeting	Meeting	Not Meeting
Nonlethal	8%	92%	21%	79%	19%	81%
Mixed1	18%	82%	38%	62%	26%	74%
Mixed2	7%	93%	39%	61%	26%	74%
Lethal [a]	--	--	--	--	--	--

[a] Insufficient number of plots to conduct statistically reliable tests

The total average number of large trees and percent canopy cover varies little between the fire regimes (Table 28). The nonlethal fire regime averages the lowest number of large trees per acre and the mixed1 fire regime the most. The mixed2 fire regime is intermediate. This pattern is the same for the average percent canopy cover, and for the range of canopy cover values. To meet the large tree canopy cover definition for old forest habitat, average canopy cover for all fire regimes would need to increase between 40 and 69 percent of current. This would require on average an increase of 8 to 12 large trees per acre from current levels.

Table 28. Number of Plots, Total Average Large Trees Per Acre and Percent Canopy Cover in the Large Tree Size, with 95 Percent Confidence Interval and Range of Values by Fire Regime.

Fire Regime	Number of Plots	Total Average Number of Large Trees (≥20 inches d.b.h.) Per Acre For Plots Defined as Large Tree Size Class (Mean ± Confidence Interval, Range)	Total Average Large Tree (≥20 inches d.b.h.) Canopy Cover Percent for Plots Defined as Large Tree Size Class (Mean ± Confidence Interval, Range)
Nonlethal	48	16.2 ± 1.8 (6.0 – 30.0)	17.7 ± 1.9 (10.1 – 34.7)
Mixed1	39	20.2 ± 3.4 (9.8 – 54.0)	21.5 ± 3.4 (10.7 – 47.3)
Mixed2	57	18.5 ± 3.0 (6.0 – 48.1)	18.5 ± 1.9 (10.0 – 36.4)
Lethal [a]	--	--	--

[a] Insufficient number of plots to conduct statistically reliable tests

Monitoring Question (32): Are snags and coarse woody debris at, or moving toward, desired conditions as described in Appendix A of the Forest Plan?

Answer: The analysis of the snags and CWD relative to the Appendix A desired conditions using the A and B Grid data was displayed in Section 3.2.4.4 Snags and Coarse Woody Debris of the FEIS for the 2010 Forest Plan amendment. The summary of the findings are as follows:

- Forest-wide, total snag numbers exceed the desired condition range for all PVGs except PVG1;
- All PVGs exceed the high end of the desired range for medium (10.0 to 19.0 inches d.b.h.) sized snags;
- All PVGs except PVG4 and PVG6 are within the desired range for large (≥20.0 inches d.b.h.) sized snags; PVGs 4 and 6 exceed the high end of the range;
- Forest-wide, the high number of snags is due primarily to an over-abundance on the unsuited timberlands; snag numbers are lower on the suited timberlands;
- Total CWD is within the desired range for all PVGs except PVGs 2, 4, and 11;
- PVGs 1, 8/9, 10, and 11 are within the desired range for large CWD; PVGs 2, 3, 4, 6, and 7 are below.

Comparison of desired conditions for snags and CWD were developed from A and B Grid data. The information presented in the FEIS for the 2010 Forest Plan amendment was through 2007. The data presented below includes information collected through 2009 and therefore deviates slightly from the analysis presented in the FEIS.

Desired conditions in the Forest Plan are presented by PVG. Table 29 displays the current snag and CWD estimates for the forest compared to the Appendix A desired conditions for each PVG grouped by fire regime. As described above, plots were pooled to the fire regimes (Table 30) for making statistical comparisons.

Table 29. Current Conditions for Snags and Coarse Woody Debris Compared to the Appendix A Desired Conditions by PVG and Fire Regime.

PVG	N	Snags (Number per Acre)				Coarse Woody Debris (Tons per Acre)			
		Medium 10.0-19.0 inches		Large ≥20 inches		≥3 inches		≥15[a] inches	
		DC	2010	DC	2010	DC	2010	DC	2010
Nonlethal Fire Regime									
1	15	0.4-0.5	1.6	0.4-2.3	0.4	3-10	3.2	2.3-7.5	2.4
2	131	1.8-2.7	5.9	0.4-3.0	1.8	4-14	3.8	3.0-10.5	1.4
5	5	1.8-5.5	2.0	0.4-3.5	1.2	4-14	1.1	3.0-10.5	1.2
Mixed1 Fire Regime									
3	36	1.8-4.1	5.7	0.2-2.8	1.4	4-14	4.6	2.6-9.1	1.8
6	32	1.8-5.5	8.5	0.2-3.5	3.5	4-14	5.3	2.6-9.1	2.0
Mixed2 Fire Regime									
4	47	1.8-2.7	5.8	0.2-2.1	2.4	4-14	3.2	2.6-9.1	1.2
7	164	1.8-5.5	15.7	0.2-3.5	3.2	5-19	4.9	2.5-9.5	2.0
11	24	1.4-2.2	10.5	0.0-4.4	1.2	4-14	4.0	1.0-3.5	1.6
Lethal Fire Regime									
8	5	1.8-7.5	5.7	0.2-3.0	1.9	5-19	11.6	1.3-4.8	5.4
9	7	1.8-7.5	24.6	0.2-3.0	5.3	5-19	11.6	1.3-4.8	6.4
10	13	1.8-7.7	26.4	N/A	N/A	5-19	7.5	1.3-4.8	4.2

[a]12 inches in PVG10

Table 10. Current Conditions for Snags per Acre and Coarse Woody Debris with 95 Percent Confidence Intervals Compared to Appendix A Desired Conditions by Fire Regime.

PVG	N	Snags (Number per Acre)				Coarse Woody Debris (Tons per Acre)			
		Medium 10.0-19.0 inches		Large ≥20 inches		≥3 inches		≥15[d] inches	
		DC	2010	DC	2010	DC	2010	DC	2010
Nonlethal	**151**	**1.7-2.6**	**5.3±2.1**	**0.4-2.9**	**1.6±0.6**	**3.9-13.6**	**3.7±0.9**	**2.9-10.2**	**1.5±0.6**
Earlier[a]	62		9.2±4.4		2.3±1.2		4.0±1.5		1.0±0.6
Later[b]	89		2.6±1.7		1.2±0.7		3.4±1.1		1.9±0.9
Mixed1	**68**	**1.8-4.8**	**7.0±2.8**	**0.2-3.1**	**2.4±1.0**	**4.0-14.0**	**5.0±1.6**	**2.6-9.1**	**1.9±1.0**
Earlier[c]	13		11.1		2.1		6.2		2.8
Later	55		6.0±2.6		2.5±1.1		2.4±1.1		1.7±1.0
Mixed2	**235**	**1.8-4.6**	**13.2±2.4**	**0.2-3.3**	**2.9±0.7**	**4.7-17.5**	**4.5±0.8**	**2.4-8.8**	**1.6±0.5**
Earlier	94		19.2±4.9		3.6±1.2		4.3±1.2		1.4±0.7
Later	141		9.1±2.2		2.4±0.9		4.5±1.1		1.8±0.7
Lethal	**38[a]**	**1.8-7.6**	**20.6**	**0.1-1.4**	**3.4**	**5.0-19.0**	**9.4**	**1.3-4.8**	**5.0**
Earlier[c]	20		28.4		4.2		8.0		3.8
Later[c]	18		8.9		1.7		11.0		7.1

[a]Earlier successional: GFSS, Sapling, Small

[b]Later successional: Medium and large tree size class

[a]Insufficient number of plots to develop confidence intervals

[d]12 inches and greater for PVG10 in the lethal fire regime

Forest-wide based on the fire regime pooling, medium sized snags per acre exceed the high end of the desired conditions. Large sized snags are within desired ranges for all fire regimes except the lethal, which exceeds the high end of the range. Relative to the fire regimes, the number of snags per acre in both size classes is lowest in the nonlethal and highest in the lethal fire regime. The mixed1 and mixed2 are intermediate in that order.

In all but one case, there are more medium and large sized snags in the earlier successional stages (assumed to be GFSS, sapling and small tree size class) than in later successional stages (assumed to be medium and large tree size class). This relationship is flipped for large sized snags in the mixed1 fire regime. The association of snags to the earlier successional stage may reflect the disturbance processes that created this stage. Stand-replacing disturbances such as wildfire or insect epidemics would produce large numbers of snags evident in earlier successional stages. Over time, a large number of these snags would fall. Snags present in the later successional stage are generally the result of persistent snags created initially, or snags that occur during stand development.

CWD is within the desired conditions in the mixed1 and lethal fire regimes, below the low end in the nonlethal and mixed2 fire regimes. All fire regimes except lethal are below the low end of the range for CWD over 15 inches. The pattern of CWD as it applies to earlier and later successional stages is less obvious than for snags. For all but the lethal fire regime CWD in earlier and later successional stages is similar. In the lethal fire regime, later successional stages have more CWD than earlier.

II-5. 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:

- How well did the project meet its objectives?
- Were the effects to other resources within the expected range?
- Was the project design and mitigation effective?
- Are actions proposed and associated effects being adequately disclosed in NEPA documents?
- 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 CWD 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?
- Is 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 formal project monitoring reviews were conducted between FY 2008 and 2011. The following projects were monitored during the 2007 field season, and each project review is summarized below.

Mountain Home RD: No project review was conducted on the Mountain Home RD in FY 2007.

Idaho City RD:

- **Gregory Fire Salvage**
  The project's objectives were to capture the value of fire-killed and imminently dead timber not 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 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.

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.

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 firefighters. 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).

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 FYs 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

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 2010/2011 report will be added to the 2008/2009 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.

No errata are included in this year's report.

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 FYs 2009, 2008, and 2007, no 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. The DN/FONSI, including the Forest Plan amendment, is available from the Boise NF.

On July 1, 2010, Boise NF Supervisor Cecilia R. Seesholtz amended the 2003 Forest Plan to include a WCS for the Forested Biological Community.

The goal of the WCS is to maintain or restore forested habitats that provide for a diversity of terrestrial wildlife species, consistent with overall multiple-use objectives. The short-term emphasis is on restoring habitats associated with species of greatest concern, such as low- to mid-elevation ponderosa pine forests, which provide white-headed woodpecker habitat. The amendment moves all forested acres to a restoration emphasis. Commodity outputs will be an outcome of restoration.

Key Features of the 2010 Amendment

- The 2003 Forestwide wildlife standard was deleted and replaced by a more comprehensive and diverse set of management direction that relies on accepted wildlife conservation concepts and principles.
- Approximately 400,000 acres assigned to Management Prescription Category (MPC) 5.2 (Commodity Production Emphasis) were reallocated to MPC 5.1 (Restoration and Maintenance of Forested Landscapes).
- The Forest Supervisor added management direction to emphasize retention of most forest stands defined as "old-forest habitat" or "large tree size class."
- The Forest Supervisor added management direction to focus restoration in "large tree size class" and "medium tree size class" to promote desired old forest habitat and large tree stand conditions, and to reduce hazards and risks to these habitats.
- The Forest Supervisor added or modified management direction to emphasize retention of large snags while balancing other objectives.
- A restoration and prioritization strategy for wildlife habitat was added. More specifically, Forest wide and management area direction was modified or added to focus limited resources and funds in areas where the greatest gains can be made, recognizing both long-term goals and short-term Forest Plan objectives.
- Core watershed areas for wolverine where human disturbance may be affecting denning and overall wolverine persistence were identified. In addition, objectives to focus further data collection and surveys in these areas to determine to what extent winter recreation is influencing wolverine use were added.

The Forest Plan amendment strives to restore low- to mid-elevation ponderosa pine forests, which provide white-headed woodpecker habitat.

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