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Biennial Monitoring Evaluation Report

Boise NF

Fiscal Years 2016-2017

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Contents

List of Tables

List of Figures

Video Links

Replacement of an aquatic organism passage to protect and improve bull trout habitat following the Pioneer Wildfire: https://www.youtube.com/watch?v=BQhdTzboRr0&feature=youtu.be

Impacts to recreation following the Pioneer Wildfire and how the Boise NF is working with partners to address them: https://vimeo.com/245185030/1f66f66a76

How the Boise NF is working collaboratively with partners and local communities to achieve restoration objectives: https://vimeo.com/264636245

Acronyms

ACS – Aquatic Conservation Strategy
AOP – Aquatic Organism Passage
ASQ – Allowable Sale Quantity
BAER – Burned Area Emergency Response
BMP – Best Management Practice
BURP – Beneficial Use Reconnaissance Program
CFR – Code of Federal Regulations
CWD – Coarse Woody Debris
DD – Detrimental Disturbance (soils)
EPA – Environmental Protection Agency
FACTS – Forest Service ACtivities Tracking System
FSM – Forest Service Manual
FY – Fiscal Year
GMHA – General Habitat Management Area
GNA – Good Neighbor Authority
GIS – Geographic Information System

GPS – Global Positioning System
GRAIP – Geomorphic Road Analysis and Inventory Package
HM – Head Months (grazing)
IDEQ – Idaho Department of Environmental Quality
IDPR – Idaho Department of Parks & Recreation
IDT – Interdisciplinary Team
IHMA – Important Habitat Management Area
INFRA – Infrastructure Database
MIS – Management Indicator Species
ML – Maintenance Level
MMBF – Millions of board feet (timber)
NAGPRA – Native American Graves Protection and Repatriation Act
NEPA – National Environmental Policy Act
NF – National Forest
NFS – National Forest System
NRHP – National Register of Historic Places
NRM – Natural Resource Manager
NVUM – National Visitor Use Monitoring
PALS – Planning, Appeals and Litigation System
PHA – Priority Heritage Assets
PHMA – Priority Habitat Management Area
PIBO – Pacfish/Infish Biological Opinion
RCA – Riparian Conservation Area
RD – Ranger District
ROD – Record of Decision
ROS – Recreation Opportunity Spectrum
TEPCS – Threatened, Endangered, Proposed, Candidate and Sensitive (species)
TIM – Timber Information Manager
TMDL – Total Maximum Daily Load
TSPQ – Total Sale Program Quantity
TSRC – Total Soil Resource Commitment
USDA – U.S. Department of Agriculture
USFS – U.S. Forest Service
WBAG – Water Body Assessment Guidance
WCATT – Watershed Condition Assessment Tracking
WCF – Watershed Condition Framework
WCI – Watershed Condition Indicator
WCS – Wildlife Conservation Strategy
WIT – Watershed Improvement Tracking
WUI – Wildland Urban Interface

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Introduction

The 2012 Planning Rule, which is found in the Code of Federal Regulations (CFR) at 36 CFR 219, guides Forest Plan monitoring across the Forest Service. The Boise National Forest (Boise NF) conformance strategy focuses on addressing the purpose of the Forest Plan monitoring program as described in 36 CFR 219.12(a)(1), which includes the need for monitoring information that enables the responsible official to determine if a change in Plan components or other Plan content that guides management of resources on the Plan area may be needed.

The Boise NF Forest Plan was amended in 2010 to incorporate the Wildlife Conservation Strategy. The next Forest Plan revision is projected to occur 5 to 7 years from now. The analysis of the management situation will be developed at that time.

This report presents monitoring information for fiscal years (FY) 2016-2017 and is organized in two main parts. The first part is a discussion of four determinations from which one may conclude whether or not a change to the plan, management activities, or the monitoring program, or a new assessment, may be warranted based on the new information. The second part presents findings for each monitoring question in the monitoring plan and the data source and monitoring result for each indicator for each monitoring question. The monitoring questions and associated indicators address each of the eight requirements which are noted at 36 CFR 219.12(a)(5).

> (i) The status of select watershed conditions.
>
> (ii) The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.
>
> (iii) The status of focal species to assess the ecological conditions required under §219.9.
>
> (iv) The status of a select set of the ecological conditions required under §219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.
>
> (v) The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.
>
> (vi) Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.
>
> (vii) Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities.
>
> (viii) The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land (16 U.S.C. 1604(g)(3)(C)).

Because of the 2016 wildfires, salvage activity associated with those wildfires and limited personnel capacity in some program areas due to recent budget trends and hiring freezes, there has been a limited range of project types and management activities on the Boise NF in 2016 and 2017. Responses to some questions have been deferred until the Forest is able to collect necessary data and update changed conditions for some resources given the recent wildfires, or until such time the Forest has capacity or is scheduled to do monitoring for other programs and resource areas.

Figure 1: 2016 Pioneer Fire

Objective

The Biennial Monitoring Report evaluates new information gathered through the Plan monitoring program and relevant information from the broader-scale strategy and makes this information available to the public. The monitoring evaluation report must indicate whether or not a change to the Plan, management activities, the monitoring program or a new assessment may be warranted based on the new information. The Biennial Monitoring Report is also used to inform adaptive management of the Plan area. Any testing of assumptions, another rule-stated purpose of monitoring, would be addressed where relevant to one of the four determinations to be made.

The objective for this report is to help the Responsible Official understand the needs and/or opportunities for adaptive management, per 36 CFR 219.12(d)(2). The monitoring report is not a decision document representing final Agency action and is not subject to the objection provisions of Subpart B of 36 CFR 219. During monitoring evaluation, resource specialists and program managers considered whether the following needs existed:

- Need for Changing the Forest Plan;
- Need for Changing Management Activities;
- Need for Changing the Monitoring Program; and/or
- Need for Conducting an Assessment to Determine Preliminary Need to Change the Plan

Monitoring Evaluation

This section describes the details of how monitoring data were collected, reported and evaluated for the Plan Monitoring Program to support the recommendations and/or findings. This section displays the summary of data results compiled for each monitoring item.

Each monitoring item includes 1) finding on the needs for change (as previously described); 2) the monitoring question and its indicator(s); and 3) data source, background information if needed and an evaluation of the monitoring results.

Physical & Biological Ecosystems

Terrestrial Ecosystems

Monitoring Question #1

Are live vegetation, snags and coarse woody debris (CWD) at, or moving towards, desired conditions as described in Appendices A and E of the Forest Plan?

Findings

The Boise NF defers addressing this monitoring question to the 2020 Forest Plan Monitoring Report. Due to the numbers of acres burned during wildfires in 2016 and 2017, the Boise NF is in the process of updating its mid-scale existing vegetation conditions data sets to reflect changes from the wildfires. Until the Boise NF completes the updates, results and findings would be based on pre-fire conditions and may not correctly reflect on-the-ground conditions.

Figure 2: Standing snags and fallen CWD within the Bearskin Fire area

Monitoring Question #2

Are restoration and conservation actions being implemented within Sage Grouse Priority Habitat Management Area (PHMA), Important Habitat Management Area (IHMA), and General Habitat Management Area (GMHA) to meet desired outcomes?

Findings

The Boise NF found no need for changing management activities or the Forest Plan monitoring program.

The Forest Service Greater Sage-grouse Records of Decision (GRSG ROD) were signed on September 16, 2015 and with that decision amended the Boise NF Plan (USDA Forest Service 2010). The Greater Sage-grouse Amendment incorporated specific conservation measures intended to protect, enhance and restore greater sage-grouse (GRSG) and their habitat and to provide sufficient regulatory

certainty such that the need for listing the species under the Endangered Species Act could be avoided.

Currently the Forest Service is considering the possibility of amending some, all or none of the Forest Service Land and Resource Management Plans that were amended or revised in 2015. A Notice of Intent (NOI) was published on November 21, 2017, seeking public comments on potential changes to the 2015 GRSG Amendment. In the meantime, the Forest Service continues to follow the Plans as currently written while policy, administrative changes or a new potential planning effort are being considered [USFS Sage Grouse Update Bulletin (2/14/2018)].

Indicator

Number of acres restored in PHMA, IHMA and GHMA

Data Source

Natural Resource Manager (NRM), Watershed Improvement Tracking (WIT) and Forest Service ACtivities Tracking System (FACTS) Databases

Results

Sage-grouse IHMA or GHMA habitat is designated on the Mountain Home RD (Figure 3). There is no PHMA habitat on the Forest. In 2013 the Pony and Elk Fires burned 51,121 and 101,117 acres of National Forest System land, respectively on the Mountain Home RD. The Pony Fire and a portion of the Elk Fire burned in IHMA and GHMA habitat. Post-fire conditions have expanded the extent of annual grasses, spread of noxious weeds and resulted in the loss of sagebrush canopy cover.

Greater sage-grouse habitat restoration activities were a Regional and Forest priority in both 2016 and 2017. The Forest received above-base funding in both years to implement restoration projects in sage grouse habitat which burned in the 2013 Elk and Pony Fires. Table 1 displays the total acres of conservation and habitat restoration actions that have occurred in IHMA and GHMA designated areas by year. Restoration actions consisted of planting bitterbrush and sagebrush seedlings and treating noxious weeds.

Table 1: Restoration Actions in Sage Grouse by Fiscal Year

District	Year	PMHA	IMHA	GHMA	Totals
Mountain Home	2016	N/A	917	198	1,115 acres
	2017	N/A	73	218	291 acres
Totals		--	**990 acres**	**416 acres**	**1,406 acres**

The Forest treated approximately 317 acres and 291 acres for noxious weeds in 2016 and 2017, respectively, and planted approximately 800 acres of bitterbrush and sagebrush seedlings in 2016 and in 2017. Noxious weed treatment acres make up approximately 608 of the 2,206 acres restored in IHMA and GHMA habitats (2016-2017). Treatments and plantings occurred across both GHMA and IHMA designations. These restoration actions improved the habitat quantity and quality of the post-burn habitat for the greater sage grouse.

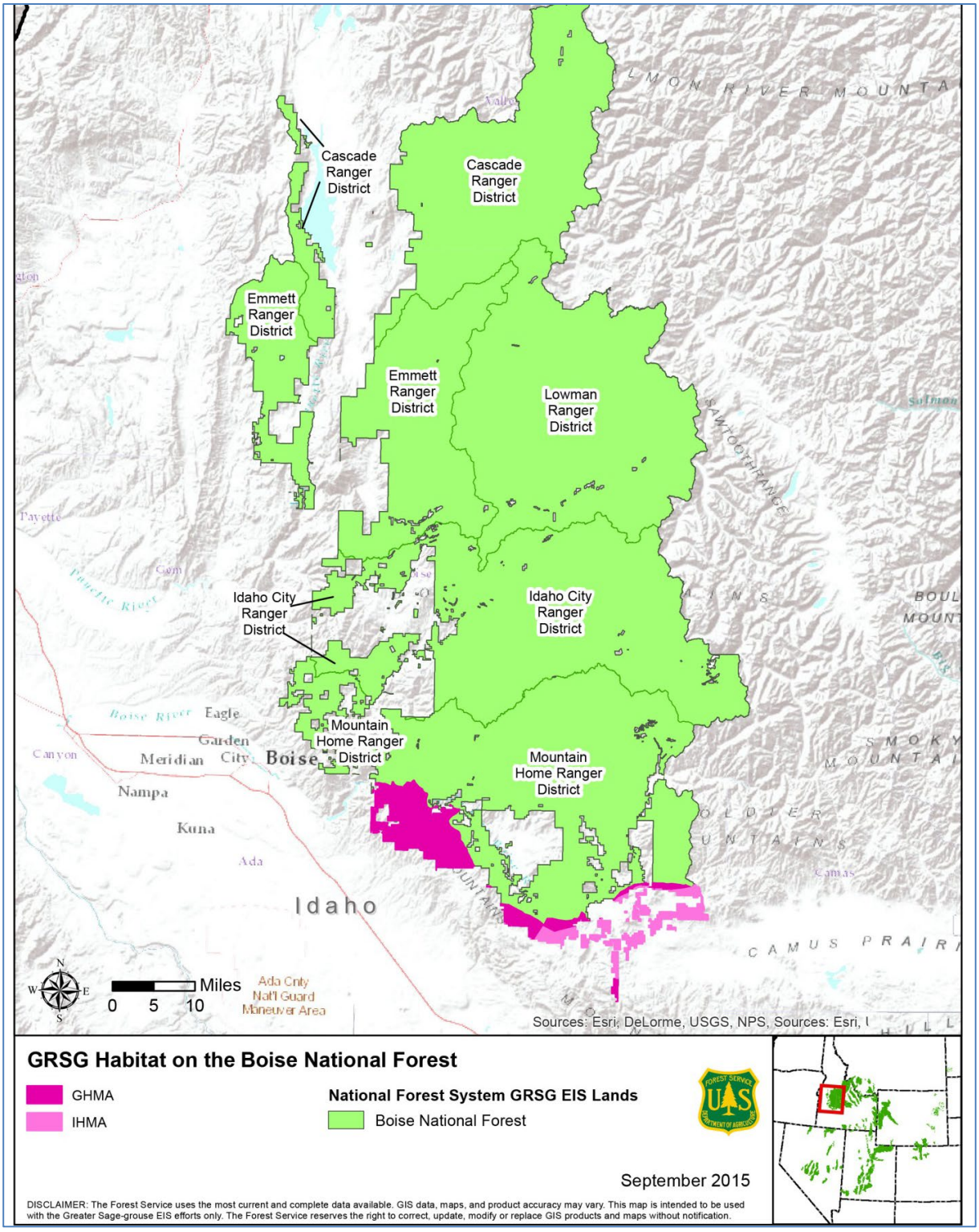

Figure 3: Greater Sage grouse Habitat on the Boise NF. Excerpted from the 2015 GRSG ROD for Idaho and SW Montana, Nevada and Utah

The Forest did not implement any actions in 2016 or 2017 to reduce sagebrush canopy cover below 30 percent through mechanical or prescribed fire actions as identified in the objectives defined in the Sage Grouse Plan Amendment (2015). The changed conditions in IHMA and GHMA areas following

the Pony and Elk Fires have resulted in restoration needs not aligning well with the objectives defined in the 2015 Sage Grouse Plan Amendment. The Forest intends to share information on the changed habitat conditions with the interdisciplinary team that is evaluating the need for a new GRSG planning effort during 2018 in the event that the objectives for the Forest can be updated to better reflect sage-grouse restoration needs.

Monitoring Question #3

Are Forest management actions maintaining and/or restoring the distribution, abundance, and habitat quality of Threatened, Endangered, Proposed, Candidate and Sensitive (TEPCS) terrestrial species, or the occupied habitat of TEPCS and Watch plant species?

Findings

The Boise NF found no need for changing the Forest Plan or Forest Plan monitoring program.

Based on an observed concern reported with Indicator #2's results, the Boise NF has implemented new tools to improve communication between specialists and project managers as a project moves from the Planning/NEPA phase to the Implementation phase. (Discussed further under Indicator #2 for this monitoring question.)

Indicator #1

Acres of Threatened, Endangered, Proposed, Candidate, and Sensitive (TEPCS) habitat maintained or restored

Data Source

Natural Resources Manager (NRM) Watershed Improvement Tracking (WIT) Database and NRM Forest Service ACtivities Tracking System (FACTS) Database; Project Biological Assessments and Biological Evaluations in Boise NF project records for fiscal years 2016 and 2017; Planning, Appeals, and Litigation System (PALS) Database and NEPA Decision Documents for pertinent projects implemented in fiscal years 2016 and 2017.

Results

In 2016 the Boise NF implemented a diversity of restoration projects as a result of pre-FY2016 NEPA decisions. Projects ranged from restoration of low elevation ponderosa pine dominated habitats to high elevation whitebark pine communities and many habitats in between. Noxious weed treatments were implemented on every unit, comprising approximately 36 percent of the total TEPCS acres restored or maintained in 2016, and provided control of the spread of invasive plants which can degrade habitat quality for a number of TEPCS wildlife and plant species. In addition, a variety of habitats used by species such as boreal owl, greater sage grouse, yellow-billed cuckoo, flammulated owl, white-headed woodpecker and northern goshawk were restored or maintained and comprised the other 64 percent of the TEPCS restoration actions in 2016. For example on the Mountain Home RD, ponderosa pine planting in low elevation habitats which burned uncharacteristically lethal in the 2013 Elk Fire was implemented in addition to aspen restoration in the Lake Creek area, riparian hardwood restoration on the South Fork Boise River and bitterbrush and sagebrush plantings in sage grouse Important and General Habitat Management Areas (IHMA, GHMA) burned by the 2013 Pony Fire. On the Idaho City RD, a commercial vegetation treatment benefitting white-headed woodpeckers was implemented and, to protect cavity-seeking species from becoming entrapped (i.e. boreal owls), vent screens were placed on vault toilet pipes at all administrative sites on the unit. The Lowman RD also completed capping pipes on their vault toilets. The Cascade RD completed a small

underburn in a ponderosa pine-aspen community, as well as implemented whitebark pine restoration actions in the Oro Mountain whitebark pine community. Finally, in 2016 the Emmett RD implemented a prescribed fire treatment in low-elevation ponderosa pine habitat, planted trees in low-elevation pine habitat, and constructed a fence to protect a wet meadow in anticipation of beaver re-introduction to the riparian area. Altogether, actions across the five Ranger Districts restored or maintained habitat for several of the Forest's TEPCS wildlife species in 2016.

In 2017 the Boise NF implemented fewer projects that maintained or restored TEPCS wildlife habitat. A main reason for this change was due to the Forest's prioritization of salvage activities after the 2016 Pioneer Fire. The Mountain Home RD was not impacted directly by the 2016 Pioneer Fire and was able to move forward with implementing restoration actions including: reforestation of ponderosa pine conifers in the post-Elk Fire area which burned lethally hot in a fire regime which normally burns non-lethally; planting of whitebark pine in a community burned in the 2012 Trinity Fire; continued planting of sagebrush and bitterbrush seedlings in sage grouse habitat burned by the 2013 Elk and Pony Fires; screening vault toilet pipes to protect cavity-seeking birds; and ongoing treatment of noxious weeds. All units in 2017 were able to treat noxious weeds, some to a greater extent than others. For Cascade and Lowman RDs, noxious weed treatments were the only TEPCS habitat actions in 2017. Treatment of noxious weeds comprised 70 percent of the acres of TEPCS habitat maintained or restored on the Forest in fiscal year 2017. The Idaho City RD was able to restore 75 acres of native vegetation after the 2016 Pioneer Fire in addition to treating weeds, but did not have any other TEPCS habitat improvement. The Emmett RD began implementation of the High Valley Integrated Resource Project with the Padget and Tripod Summit Timber Sales and the commercial treatments in those sales are expected to benefit white-headed woodpeckers by restoring habitat while maintaining habitat conditions for flammulated owls, which are known to occupy these areas. Emmett RD also capped all unit vault toilet pipes on the district to prevent entrapment of cavity-seeking wildlife such as the sensitive species the boreal owl which has been documented on the Forest as becoming entrapped in these structures. Screening, or capping, the Emmett RD and Mountain Home RD vault toilets completed the Forest's 3-year effort to screen pipes at all 200 vault toilets across the Boise NF.

Table 2: Acres of TEPCS habitat maintained or restored and number of NEPA decisions with future TEPCS habitat actions

District	Year	Acres of TEPCS Habitat Maintained or Restored[1]
Mountain Home	2016	4,953
	2017	692
Idaho City	2016	1,464
	2017	1,238
Cascade	2016	1,810
	2017	56
Lowman	2016	1733
	2017	1,098
Emmett	2016	6,086
	2017	2,116
Forest wide	**2016**	**16,046**
	2017	**5,200**

[1] In 2016 5,709 acres (36 percent) and in 2017 3,642 acres (70 percent) were noxious weed treatments

Indicator #2

Acres of disturbance of occupied habitat of TEPCS plant species and Watch plant species

Data Source

Planning, Appeals and Litigation System (PALS) Database and NEPA Decision Documents for activities implemented in fiscal years 2016 and 2017

The Boise NF reviewed project lists with recent Decision Documents to determine which were implemented in 2016 and 2017 and, of those implemented, which project activities occurred within known occupied habitats for TEPCS and Watch plant species. The review process assessed whether design features and mitigation measures for TEPCS plant species and Watch plant species were successfully implemented and effective in avoiding impacts to plant populations. The activities reviewed included:

- Allred's Adventures Special Use Permit authorization (Lowman RD);
- Elk Post-fire Restoration Reforestation Project (Mountain Home RD);
- North Pioneer Fire Salvage and Reforestation Project (Lowman RD);
- South Pioneer Fire Salvage and Reforestation Project (Idaho City RD);
- Deadwood Outfitters Special Use Permit Renewal (Lowman RD); and
- Table Mountain Outfitters Special Use Permit Renewal (Cascade RD).

Results

For the special use permit renewals, the Boise NF communicated design features and mitigation measures to special use permittees. Follow-up monitoring to determine successful implementation of the design features and mitigation measures has yet to occur. For the reforestation projects, project managers incorporated design features and mitigation measures into timber sales and reforestation and stewardship contracts. Project managers ensured implementation of design features and mitigation measures through timber sale and contract inspections.

During the review process, one concern that arose amongst specialists and project managers stemmed from miscommunications and staff turnover in 2017. Design features and mitigation measures were not always effectively communicated when projects moved from the Planning/NEPA phase to the Implementation phase, resulting in near-misses and implementation inefficiencies. Poor communication between the phases could lead to unintended consequences in the future. Based on this observed concern, the Boise NF reassessed its methods of communication as a project moves from the planning/NEPA phase to the implementation phase to improve effective communication and ensure projects achieve the desired species conservation results. The Forest recently developed and implemented a process for better consolidating design features and mitigation measures during development of more complex projects and transferring these to an "Implementation Guide". This guide makes it easier for the implementation team to understand what is required when implementing certain types of activities in certain areas and how they should proceed when certain resource conditions/circumstances (referred to as "Watch Out Situations") are encountered. This change benefits all pertinent resource areas (e.g. wildlife, fisheries, water quality etc.), not only TEPCS plant species and Watch plant species.

Monitoring Question #4

Are Forest management actions affecting the distribution, abundance and habitat quality of focal species and Species of Conservation Concern?

Findings

The Boise NF determined that indicators #1 and #2 may be answered in 2020. Indicator #3 was answered. At this time, the Forest found no need for changing the Forest Plan or management activities; however, there **may need to be changes to the monitoring program** based on the Forest's capacity to collect and extrapolate data to interpret results for indicators #1 and #2.

Indicator #1

Population trend data for focal species in potential habitat *(Not answered in 2018)*

Indicator #2

Acres treated within focal species habitat *(Not answered in 2018)*

Indicator #3

Proportion of vegetation management projects that include restoration for Species of Conservation Concern in their Purpose and Need

Data Source

NEPA Decision Documents for restoration projects implemented in fiscal years 2016 and 2017; salvage projects were not considered as restoration for TEPCS habitat.

Results

In 2016 and 2017, over 65 percent of the projects included restoration for TEPCS wildlife species habitats in the purpose and need. Though other projects did not include language regarding restoration for TEPCS wildlife species habitats in their purpose and need, some of the proposed actions still contributed to improving habitat quality for TEPCS wildlife species.

In 2016 the Becker Integrated Resource Project (Idaho City RD) and the High Valley Integrated Restoration Project (Emmett RD) decisions included purpose and need statements to maintain or restore sensitive species habitat (white-headed woodpecker, northern goshawks, and flammulated owl).

The Becker Integrated Resource Project area was designed to maintain or restore vegetative conditions beneficial to three sensitive species: white-headed woodpeckers, northern goshawks and flammulated owls. The Becker Integrated Resource Project area Decision was signed in June 2016 but burned later that summer in the 188,404 acre Pioneer Fire. The proposed vegetation management projects will no longer be implemented since stand conditions have changed after the 2016 Pioneer Fire. Transportation management actions under the Becker Integrated Resource Project Decision, however, will move forward. There will be some benefit to recovering sensitive species habitat from road decommissioning and seasonal road closure actions by reducing the risk of snag loss due to fuelwood cutting or spread of noxious weeds.

Vegetation management actions under the High Valley Decision have the potential to restore white-headed woodpecker habitat and maintain flammulated owl habitat. The High Valley Integrated Restoration Project began implementation in 2017 with the Padget and Tripod Summit Timber Sales actions (i.e. commercial harvest and prescribed fire treatments). The High Valley decision will be implemented through year 2023 using Forest Service staff for implementation of layout, marking and administration of contracts and/or under implementation by the State of Idaho under the Good Neighbor Authority, a grants and agreement authority available to the Forest Service.

In 2017 the Buckskin Restoration Project (Idaho City RD) and the Dollar Creek Road Obliteration Project (Cascade RD) decisions were signed. These two projects have the potential to maintain and restore habitat for TEPCS wildlife species, although there were no purpose and need statements stating this. The Buckskin Restoration Project is intended to alter an area of older and younger ponderosa pine plantations by returning fire as an ecological process to many stands and mechanically thinning younger stands (planted in the 80s and 90s) to a variable density to break up the continuity of the stand structure and increase stand patchiness.

The Dollar Creek Road Obliteration Project is restoring non-system road prisms back to contour and in doing so is re-establishing native vegetation in the former prism. These road prisms became visible after the 2007 Cascade Complex Fires burned and killed the trees that camouflaged them from view. The Dollar Creek Road Obliteration Project decision did not identify benefits to TEPCS wildlife; however, this project occurs in lynx and wolverine habitat and restoring the land to contour can improve surrounding area habitat quality and re-development of habitat in the prisms.

Monitoring Question #5

Have habitat restoration and conservation actions been prioritized in watersheds identified in the Forest Plan Wildlife Conservation Strategy (WCS) as priority watersheds?

Findings

The Boise NF determined that indicators #1 and #2 may be answered in 2020. At this time, the Forest found no need for changing the Forest Plan or management activities; however, there **may need to be changes to the monitoring program** based on the Forest's capacity to collect and extrapolate data to interpret results for indicators #1 and #2.

Indicator #1

Proportion of acres restored or enhanced annually in WCS priority watersheds compared to total acres in other 5th field watersheds *(Not answered in 2018)*

Indicator #2

Total acres restored or enhanced of terrestrial habitat *(Not answered in 2018)*

Monitoring Question #6

Are special forest product gathering activities resulting in resource depletion (e.g., overharvest of fungi, bear grass, berries)?

Findings

The Boise NF determined that this question may be answered in 2020. At this time, the Forest found no need for changing the Forest Plan or management activities; however, there **may need to be changes to the monitoring program** based on the Forest's capacity to collect and extrapolate data to interpret results for this question.

Indicator

Number of collection permits and amount of product by species *(Not answered in 2018)*

Monitoring Question #7

Has winter recreation affected source environments in priority watersheds identified in the Forest Plan Source Environment Restoration Strategy?

Findings

The Boise NF determined this question/indicator may be answered in 2020. At this time, the Forest found no need for changing the Forest Plan or management activities; however, there **may need to be changes to the monitoring program** based on the Forest's capacity to collect and extrapolate data answer this question.

Indicator

Level of winter recreation use in priority watersheds identified in the Source Environment Restoration Strategy

Data Source

Natural Resources Manager (NRM) Watershed Improvement Tracking (WIT) Database; NRM Forest Service ACtivities Tracking System (FACTS) Database; Planning, Appeals, and Litigation System (PALS) Database; NEPA Decision Documents for restoration and conservation actions implemented in fiscal years 2016 and 2017; Boise NF corporate GIS Data sets

Fire

Monitoring Question #8

In Wildlife Conservation Strategy (WCS) priority watersheds, is wildland fire and or management-ignited fire moving landscapes towards desired conditions for resiliency and fire condition class?

Findings

The Boise NF found no need for changing management activities or the Forest Plan monitoring program.

In the near future, the Forest may need to re-evaluate priority watersheds and potentially designate new priority watersheds where restoration opportunities exist to use management-ignited wildfire.

For future Forest Plan Monitoring, the Boise NF found it appropriate to answer this monitoring question on a *five-year* monitoring cycle.

Indicator

Wildland fire and/or management-ignited fire acres burned in Wildlife Conservation Strategy (WCS) priority watersheds contributing to desired conditions

Data Source

Natural Resource Manager (NRM) Forest Service ACtivities Tracking System (FACTS) database; NRM Watershed Improvement Tracking (WIT) Database; Planning, Appeals, and Litigation System (PALS) Database; NEPA Decision Documents for restoration and conservation actions implemented in fiscal years 2016 and 2017; and Boise NF corporate GIS data sets.

Results

The Boise NF has a large fire management program that manages fires with a variety of methods ranging from full suppression to allowing fire to play its natural role to achieve desired conditions as described in the Forest Plan. In fiscal years 2016 and 2017, the Boise NF experienced six (6) wildfires that burned 224,374 acres – with 91,754 acres (40%) meeting Forest Plan desired conditions or objectives. Forest Plan Goals, objectives, and guidelines met under fire management include: FMGO02, FMGO04, FMGO05, FMOB01, FMOB03, FMGU03, FMGU04, FMGU05.

Table 3: Wildfire Acres on the Boise NF by Fiscal Year and Contribution to Forest Plan Objectives

Fiscal Year	Fire Name	Acres of Wildfire on Boise NF Lands	Acres that Met Forest Plan Objectives
2016	Arrow	255	0
2016	Buck	1,255	1,254
2016	Pioneer	188,404	86,296
2016	Rough	4,134	4,129
2017	Bearskin	30,251	0
2017	Whitehawk	75	75

The 2010 Forest Plan Amendment defined the WCS Priority Watersheds on the Vegetation and Wildlife Habitat Restoration Strategy Map until Year 2017. Wildland fire affected approximately one-third of the total acres in priority watersheds since the Forest Plan Amendment was signed in 2010 and this may result in an inability for the short-term restoration strategy to achieve its intent. The designation of short-term priority status was assigned to watersheds that contained remnant patches of low-elevation, old forest habitat and occupied white-headed woodpecker habitat. Those habitat patches were to serve as building blocks for restoration actions to increase habitat patch size and restore connectivity. Depending on the amount of the watershed that was burned, as well as the burn intensity of the fire, some priority watersheds may no longer meet the intent of their designation because the patches to build upon during the planning period no longer exist.

Table 4 displays the amount of WCS Priority watershed acres affected by wildland fires in fiscal years 2016-2017, as well as since 2010. The Boise NF provides both timeframes to illustrate the magnitude of the changed conditions that occurred since 2010 when the Boise NF delineated the short-term priority watershed to guide future management actions to restore low-elevation, open canopy ponderosa pine habitat types. Three priority watersheds on the Mountain Home and Lowman Ranger Districts burned over most of the watershed. The 2013 Elk Fire and the 2016 Pioneer Fire are examples of wildland fires on the Mountain Home and Lowman Ranger Districts (respectively) that burned uncharacteristically lethal within some nonlethal and mixed 1 fire regimes and, as a result, moved conditions in those WCS Priority watersheds away from desired conditions. In contrast, the 2012 Trinity Fire burned in a manner that helped the landscape move toward desired conditions.

Figure 4: Pioneer – Soil stabilization efforts within the Clear Creek WCS priority watershed area on the Lowman Ranger District, following the Pioneer Fire

Concurrently, during fiscal years 2016-2017, the Boise NF limited the use of management-ignited fire as a tool for restoration in one short-term priority watershed. In 2016 an approximately 2,000-acre burn block of the Rocky Canyon Prescribed Fire Project (Emmett RD) was implemented and was the only management-ignited fire action in a WCS Priority watershed during the 2016-2017 period. The Rocky Canyon Prescribed Fire project has the potential to maintain and restore habitat for wildlife species that use low elevation ponderosa pine habitats. The purpose and need in the 2011 decision document stated the project was to reintroduce low to moderate intensity fire to the landscape through a prescribed burn, focusing on the dominant nonlethal fire regime vegetative groups and to improve forest vegetation and wildlife habitat conditions in areas identified on the Boise NF Vegetation and Wildlife Habitat Restoration Strategy Map.

No additional management-ignited fire projects have undergone NEPA or have been implemented in priority watersheds during the two-year monitoring period documented in this report. Reasons for this include priorities elsewhere on the Forest and the amount of wildland fire that has affected a number of the WCS priority watersheds (as previously discussed).

Table 4: Proportion of those watersheds that have been burned since 2010

District	Short-term Priority Watershed HUC Code	WCS Priority Watersheds Total Acres	Acres Burned in WCS Priority Watersheds 2016-2017	Acres Burned in WCS Priority Watersheds 2010-2017	Percent of WCS Priority Watershed Burned 2010-2017
Mountain Home	1705011304	36,023	0	34,976	**97%**
	1705011305	100,146	0	69,272	**69%**
Idaho City	1705011207	66,534	765	904	1%
Cascade	NA	NA	NA	NA	NA
Lowman	1705012003	29,905	24,615	24,615	**82%**
	1705012006	76,558	15,345	20,259	**26%**
Emmett	1705012102	44,796	2	11	<1%
	1705012103	68,151	5	15	<1%
	1705012214	15,893	0	173	1%
	1705012301	17,758	0	394	2%
	Totals	**455,764**	**40,732**	**150,619**	**33%**

Monitoring Question #9

Are high wildfire risk areas being identified within the Wildland Urban Interface (WUI) and are those acres being subsequently treated to reduce that risk?

Findings

The Boise NF found no need for changing the Forest Plan, management activities or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *two-year* monitoring cycle.

Indicator

Acres of high wildfire risk within the Wildland Urban Interface (WUI) treated in a manner that reduces risk

Data Source

Natural Resource Manager (NRM) Forest Service ACtivities Tracking System (FACTS) Database

Results

Wildfire risk areas within the Wildland Urban Interface (WUI) were identified on the Boise NF and are being treated with hazardous fuels reduction treatments, such as prescribed burning, non-commercial thinning, yarding, mechanical piling and hand piling.

The Boise NF implemented planned WUI treatments for the following acres by fiscal year:

- Fiscal Year 2016: 7,352 acres
- Fiscal Year 2017: 2,053 acres

Decisions on several projects with hazardous fuel reduction objectives are anticipated in fiscal years 2018 and 2019.

Aquatic Ecosystems

Monitoring Question #10

Do implemented activities maintain or restore water quality to fully support beneficial uses?

Findings

No changes needed with respect to the Forest Plan or Forest Plan monitoring program.

For future Forest Plan Monitoring Reports, the Boise NF will be reporting results on a *4-year cycle* beginning in 2020. This is because multiple indicators were identified that could be used, there is variability in data collection timing and a need to synthesize data by indicator.

Indicator #1

Watershed Condition Framework (WCF) change in watershed condition class or key WCF attributes

Data Source

Watershed Condition Assessment Tracking (WCATT) *(No data collected in 2016-2017)*

Results

The initial 2011 Watershed Condition Framework (WCF) assessment identified four Priority Watersheds on the Boise NF: Curtis Creek (170602080402); Stolle Creek-SF (South Fork) Salmon River (170602080403); Bull Creek (170501210102); and Scriver Creek (170501210401). With the exception of Scriver Creek, essential projects have been fully implemented and resulted in improved watershed condition class. Essential projects yet to be implemented in Scriver Creek include 4 culvert replacements (3 aquatic organism passages [AOP]) and road decommissioning. The current WCF schedule indicates a 2019 completion date for Scriver Creek essential projects with improved watershed condition class.

Indicator #2

Applicable Forest Service National Best Management Practices (BMP) monitoring

Figure 5: An interdisciplinary team of specialists evaluates Best Management Practices (BMPs) after bridge construction for an off highway vehicle trail over Lodgepole Creek on the Cascade Ranger District

Data Source

BMP Monitoring Database

Results

Twenty-one (21) BMP monitoring activities (Table 5) designed under the Forest Service National BMP Monitoring program have been completed since 2015/2016. These activities are documented in the National BMP Monitoring database. Implementation scores range from "No BMPs" to "Fully" and effectiveness scores range from "Not" to "Effective".

Table 5: Best Management Practices (BMP) Monitoring for the Forest Plan (2015/16-2017)

Activity	Project	Implementation	Effectiveness
Chemical Use Near Waterbody	Cascade Reservoir CWMA	Fully	Mostly
Wildfire Management Actions	Trinity Ridge	Marginal	Mostly
Completed Facility Reclamation	Dutch Creek Guard Station	Fully	Effective
Dispersed Recreation Areas	Pikes Fork-Banner Creek	No BMPs	NA
Dispersed Recreation Areas	NW Corner 474-483	No BMPs	NA
Trail Construction/Re-route	Lodgepole 254	Fully	Effective
Road-Waterbody Crossing Const	474-472 Lodgepole Creek	Fully	Effective
Stored Roads	497A	Mostly	Effective
Completed Road Decommission	483C	Fully	Marginal
Spring Source Operation & Mtnc	Lyons Spring	Marginal	Mostly
Use of Prescribed Fire	Rocky Canyon Unit 4	Fully	Effective
Road-Waterbody Crossing Const	696	Marginal	Not
Ground-based Skidding & Harvest	Pinney Slope Unit 88	Fully	Effective
Mechanical Site Treatment	Six Shooter/Peacemaker Unit 30	Mostly	Effective
Parking Area Operation & Mtnc	Bender Creek Trailhead	not yet scored	not yet scored
Trail Operation & Maintenance	Willow Creek 167	not yet scored	not yet scored
Boat Launch Maintenance	Danskin	not yet scored	not yet scored
Rangeland-Grazing Management	Dixie Allotment	not yet scored	not yet scored
Dispersed Recreation Areas	Lower SF Boise River Corridor	not yet scored	not yet scored
Road-Waterbody Crossing Const	Pierce Creek Bridge	not yet scored	not yet scored
Boat Launch Maintenance	Cow Creek	not yet scored	not yet scored

Indicator #3

Applicable Forest Plan Pathways and Watershed Condition Indicators (WCIs)

Data Source

Analysis supporting NEPA decision documents for fiscal years 2015/2016 and 2017

Results

See "Results" for Monitoring Question #12, Background and Indicator #1.

Indicator #4

Certified Accomplishments via Watershed Improvement Tracking (WIT) (core and integrated targets).

Data Source

Forest Service Watershed Improvement Tracking (WIT) database

Results

See "Results" for Monitoring Question #12, Indicator #2.

Indicator #5

Idaho Division of Environmental Quality (IDEQ) Beneficial Use Reconnaissance Program (BURP) data

Data Source

IDEQ 2014 Integrated Report

Results

IDEQ routinely monitors Idaho's waters using the BURP and other data and methods described in the Water Body Assessment Guidance (WBAG). 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 Integrated Report must be approved by the EPA before it can be used by a state to guide its management decisions.

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. 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. The Integrated Report can be accessed by clicking on link or by going to http://www.deq.idaho.gov/water-quality/surface-water/monitoring-assessment/integrated-report.aspx.

Monitoring Question #11

Are management activities in riparian conservation areas (RCAs) designed to maintain or restore riparian functions and ecological processes?

Findings

The Boise NF found no need for changing the Forest Plan or management activities. The Boise NF found a **need for changing the monitoring question and indicator, as worded**. For the 2020 Forest Plan Monitoring Report, the Boise NF will reassess the monitoring question and the Forest Plan

components which the question intends to address and will provide a final recommendation to revise the monitoring question and potential indicator or remove the question. Frequency for addressing this question will also be determined based on recommendations for revising.

Indicator

Acres of projects in RCAs with Purpose and Need to restore riparian functions and ecological processes

Data Source

NEPA decision documents from fiscal years 2016 and 2017

Results

For fiscal years 2016 and 2017, the Boise NF used RCA buffers – as described in the Forest Plan – to avoid impacts to riparian functions and ecological processes during project implementation. Design of vegetation management activities have limited ground disturbing activities to the outer margins of RCAs, resulting in little if any change to riparian function and process.

Monitoring Question #12

Have habitat restoration and conservation been prioritized in watersheds identified in the Forest Plan Aquatic Conservation Strategy (ACS) priority watersheds?

Findings

The Boise NF found no need for changing the Forest Plan, management activities, or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *two-year* monitoring cycle.

Indicator #1

Within ACS priority watersheds: Applicable Forest Plan Pathways and WCIs

Data Source

WIT/NEPA decision documents for pertinent projects implemented in fiscal years 2016 and 2017, with cross-walk to Forest Plan ACS priority watersheds.

Results

Although the Aquatic Conservation Strategy (ACS) and (Watershed and Aquatic Recovery Strategy) WARS high priority subwatersheds are the highest priority for aquatic restoration, not all projects implemented or dollars spent in fiscal years 2016 and 2017 occurred in these subwatersheds due to several reasons. First, some projects are driven by other Forest Plan priorities or resource issues that must be addressed immediately. The Boise NF had an 188,404 acre fire in 2016 and directed all emphasis to the fire. The following year the focus was on two Environmental Assessments (salvaging timber within the Pioneer Fire) and forest-wide consultation in response to the Cottonwood court decision (ESA consultation on newly listed species or habitat). Second, some projects were implemented because the Forest Service must meet its multiple use obligations and respond to special use requests. 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 fiscal years 2016 and 2017 still addressed some key forest wide or management area objectives in ACS or high priority WCF subwatersheds.

VIDEO: Replacement of an aquatic organism passage to protect and improve bull trout habitat following the Pioneer Wildfire

Indicator #2

Within ACS priority watersheds: Certified accomplishments (core and integrated targets)

Data Source

Forest Service Watershed Improvement Tracking (WIT) database

Results

In fiscal years 2016 and 2017, the Boise NF implemented two actions in ACS priority watersheds, resulting in 10 stream miles restored or enhanced.

Additional actions outside ACS priority watersheds restored or enhanced 89 miles of aquatic habitat.

Table 6: Activities within ACS Priority Watersheds (by Fiscal Year)

Fiscal Year 2016 Projects	Fiscal Year 2017 Projects
• GRAIP to WINE Road Obliteration • Nez Perce Tribe Road Obliteration • South Fork Boise River Post Fire Restoration • Six-shooter Reforestation • Clear Creek Road Decommissioning • South Fork Boise River Wildfire Rehabilitation • Elk Creek Reforestation • Rabbit Creek Trail Crossing Improvements	• Dollar Creek Road Obliteration • South Fork Boise River Post Fire Restoration • BAER Big Spruce AOP • BAER Pole Creek AOP • BAER Unauthorized Route Decommissioning – Clear Creek • BAER Unauthorized Route Decommissioning – Pikes Fork Creek • BAER Mulching • BAER Wood Mulch • BAER Bearskin Culvert removal • BAER O'Keefe Creek Culvert removal • Smith Creek Reforestation

Monitoring Question #13

Are Forest management actions affecting the distribution, abundance and quality of habitat for TEPC aquatic species or focal species?

Findings

The Boise NF found no need for changing the Forest Plan or the Forest Plan monitoring program. For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *six-year* monitoring cycle. The 2024 Monitoring Report would report on the 2017-2023 period.

Background

The Boise NF selected bull trout as an aquatic management indicator species because bull trout are sensitive to habitat changes, dependent upon habitat conditions that are important to many aquatic organisms, relatively well understood by Forest biologists, and widely distributed throughout the Forest. In addition, bull trout populations are not influenced by stocking by Idaho Department of Fish and Game.

Direction for management indicator species comes from 36 CFR 219.19. Specifically, 36 CFR 219.19(a)(1) states that species shall be selected because their population changes are believed to indicate the effects of management activities. 36 CFR 219.19(a)(6) states that, "Population trends of the management indicator species will be monitored and relationships to habitat changes determined." To address this direction, monitoring for management indicator species must establish the trend of the species in relation to habitat changes caused by management activities.

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 inter-annual variation in abundance (Platts and Nelson 1988; Maxell 1999; Ham and Pearsons 2000; Dunham et al. 2001). 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 trend monitoring approach was needed.

The alternate approach to abundance monitoring 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 are 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.

The Boise NF used criteria similar to those used by the Rocky Mountain Research Station in the Boise and Payette subbasins. Patches initially were defined based on major physical gradients (patch size as it related to stream size and elevation). Patches were identified as the catchments above 1600 meters and delineated from U.S. Geological Survey 10 m Digital Elevation Models (DEM). The 1600 m elevation was used because Rieman and McIntyre (1995) observed juvenile bull trout (<150 mm) in streams at or above this elevation in the Boise basin. Small (< 150 mm) bull trout were found at elevations as low as 1,520 m, but the frequency of occurrence increased sharply at about 1,600 m (Rieman and McIntyre 1995; Dunham and Rieman 1999).

Subwatersheds that were above 1600 m, but less than 500 hectares, were also not included because they rarely supported perennial streams large enough to support bull trout. Watson and Hillman (1997) found bull trout only in streams >2 m in width, even with free access to many smaller habitats

within occupied patches. Studies in western Montana (Rich 1996) and southwest Idaho (Rieman and McIntyre 1995; Dunham and Rieman 1999) show bull trout are less likely to occur in streams less than two meters in width. The Boise NF used the assumption that patches less than 500 hectares would have streams with a wetted width smaller than 2 m.

Once bull trout patches were identified, they were classified into four categories to further focus sampling efforts over the life of the Forest Plan. These categories included: (1 - Occupied) patches known to support a bull trout population (i.e., spawning and/or early rearing has been documented by the occurrence of bull trout <150mm) as indicated by past surveys (last 7 years); (2 - Suitable) patches that have been surveyed and baseline conditions likely will support a bull trout population, but bull trout have not been detected or patches where bull trout have been detected, but observation are older than 7 years; (3 - Unsuitable) patches that have been surveyed, baseline conditions (i.e., stream temperature, etc.) likely will not support a bull trout population, and bull trout have not been detected (i.e. we assume these patches are unsuitable and unoccupied); and (4 - Unknown) patches that have not been surveyed.

Observations used to define patch boundaries were based on the more restricted movements of small (less than 150 mm) bull trout. Although some bull trout may exhibit seasonal movements from natal habitats to wintering or foraging areas (e.g. larger rivers, lakes or reservoirs), fidelity to the natal environments is likely during spawning and initial rearing. Because spawning salmonids home to natal streams and even reaches (Quinn 1993), occupied patches separated by thermally unsuitable habitat are likely to represent populations with some reproductive isolation.

Indicator

WCIs tracked for selected aquatic focal species:

- Presence/absence data;
- Acres/miles of occupied habitat;
- Number of strongholds; and
- Number of isolated populations.

Data Source

Annual/MIS monitoring, eDNA etc.

Results

For reasons identified above, two years is not ample time between reporting periods to discuss bull trout trends. Therefore, bull trout trend monitoring will make comparisons between this reporting period (fiscal years 2016 and 2017) and 2009 (the first year the Boise NF obtained baseline conditions for all 179 bull trout patches). The Boise NF started Bull trout patch monitoring in 2003 and completed initial surveys for all strata 4 patches by 2009.

Monitoring bull trout patches across the Boise NF since 2003 indicate most subbasins maintained or had an improving trend while two subbasins had a declining trend (Table 7). The Forest Plan Aquatic Conservation Strategy (ACS) calls for aquatic conditions to be maintained or restored.

Two subbasins had a declining trend:

- **North Middle Fork Boise subbasin**: There are 45 bull trout patches within the North Middle Fork Boise River subbasin. Management action implemented by the Boise NF that may influence bull

trout population trends within the North Middle Fork Boise subbasin include: road and trail management, recreation (developed and dispersed), special uses and range management. Additionally, the Bureau of Reclamation manages Arrowrock Reservoir that may also have an influence on bull trout populations within the North Middle Fork Boise River Subbasin.

Largescale wildfires burned a significant (76%) portion of the North Middle Fork Boise subbasin at varying intensities. Post fire debris flows were documented within several bull trout patches which may have influenced bull trout occurrence and reproduction. Bull trout populations will likely return to these patches as habitat and riparian conditions improve.

- **Payette subbasin**: There are five bull trout patches within the Payette subbasin. Management action implemented by the Boise NF that may influence bull trout population trends within the Payette subbasin include: road and trail management, recreation (developed and dispersed), special uses and range management.

  There were no large scale wildfires within the Payette subbasin. High road densities, dispersed recreation and cattle grazing may be influencing bull trout in the higher elevations where bull trout are known to occur. The District has taken steps to minimize impacts from recreational users by constructing buck and pole fences within bull trout patches. Additionally, the District and grazing allotment permittees have used temporary electric fences to manage cattle within the allotment.

Table 7: Bull trout patch occupancy and apparent trends for the Boise NF

Basin / Subbasin	2009[2]			2017			Trend
Boise Basin	Strata 1	Strata 2	Strata 3	Strata 1	Strata 2	Strata 3	
Boise Mores	1	4	9	1	4	9	ø
South Fork Boise	4	11	12	4	10	13	ø
North Middle Fork Boise	14	17	14	13	16	16	-
Payette Basin	Strata 1	Strata 2	Strata 3	Strata 1	Strata 2	Strata 3	
Payette	4	0	1	2	2	1	-
South Fork Payette	15	20	5	15	17	8	ø
Middle Fork Payette	3	3	6	3	2	7	ø
North Fork Payette	1	0	0	1	0	0	ø
Salmon Basin	Strata 1	Strata 2	Strata 3	Strata 1	Strata 2	Strata 3	
South Fork Salmon	10	5	9	12	3	9	+
Middle Fork Salmon	9	1	1	10	1	0	+

[2] Bull trout patch monitoring started in 2003, however 2009 was the first year all strata 4 patches (patches that have not been surveyed) had the initial surveys conducted.

Monitoring Question #14

Is water quality in priority watersheds being maintained or restored to fully support beneficial uses and native and desired non-native fish species and their habitats?

Findings

The Boise NF found no need for changing the Forest Plan, management activities, or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on an approximate *six-year* monitoring cycle. When the next Integrated Report is available, it will be compared to the 2014 Integrated Report and addressed in the following Forest Plan Monitoring Report.

Indicator

Miles of stream habitat improved

Data Source

State data, including BURP data, PIBO data collection, WIT

Results

As discussed in the results for Question 10, Indicator #5, the Boise NF compared the 2008 Integrated Report to the 2014 Integrated Report to determine if there were any changes in water quality data on the Forest. There were only five ACS priority subwatersheds that had streams not supporting beneficial uses (Table 8). Water quality monitoring by IDEQ determined all ACS priority subwatersheds monitored are being maintained or are on an improving trend to fully support beneficial uses and native/desired non-native fish species and their habitats.

Table 8: ACS Priority Subwatersheds with Streams Not Supporting Beneficial Uses

Basin/Subbasin/Subwatershed	**2008** (miles of streams)	**2014**(miles of streams)	**Water Quality Trend**
Boise Basin			
Boise Mores subbasin	340.5	378.8	-
ACS Upper Mores Creek 6th HU	**36.1**	**36.1**	Ø
Lower Boise subbasin	11.9	11.9	Ø
South Fork Boise subbasin	375.2	110.5	+
North Middle Fork Boise subbasin	185.8	5.0	+
Payette Basin			
Payette subbasin	0	0	Ø
South Fork Payette subbasin	229.6	121.5	+
Middle Fork Payette subbasin	144.5	22.8	+
ACS Upper MF Payette 6th HU	**27.6**	**0.0**	+
North Fork Payette	50.8	83.9	-
Salmon Basin			
South Fork Salmon subbasin	39.1	250.6	-
ACS Wardenhoff-Bear 6th HU	**13.1**	**13.1**	Ø
Middle Fork Salmon subbasin	43.3	48.8	-

Basin/Subbasin/Subwatershed	2008 (miles of streams)	2014(miles of streams)	Water Quality Trend
ACS Upper Bear Valley 6th HU	NA	28.9	NT
ACS Upper Elk 6th HU	1.1	1.1	∅

N/A = Not Assessed; NT = No Trend

Productivity of the Land

Soils

Monitoring Question #15

Is the Forest maintaining or restoring soil quality?

Findings

The Boise NF found no need for changing the Forest Plan or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *two-year* monitoring cycle.

Indicator #1

Amount of activity area in non-detrimentally disturbed condition

Indicator #2

Amount of activity area Total Soil Resource Commitment (TSRC)

Data Source (for both Indicators)

NEPA decision documents from fiscal years 2016 and 2017, implementation review of selected projects and Forest BMP monitoring.

Results (for both Indicators)

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. The types of monitoring conducted range from interdisciplinary team (IDT) review of implemented projects to 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 and associated implementation activities (e.g. road construction, reconstruction and/or decommissioning), 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.

Road decommissioning is an important component in restoring soil quality and watershed conditions. The Forest is continually evaluating the road system to achieve Forest Plan desired conditions. Roads not likely needed for future use are decommissioned or converted to other uses through project-level NEPA decisions.

The following table highlights projects that were evaluated using different monitoring methods: IDT reviews, soil disturbance monitoring protocol (FSDMP) (Page-Dumroese et al. 2009), soil health assessments, or Burned Area Emergency Response (BAER) assessments.

Table 9: Projects Evaluated for Soil Productivity Determinations

Activity	Conclusions / Summary of Results
Forested Vegetation Treatments	Detrimental disturbance (DD) was found to be within the Forest Plan criteria of less than 15% for each activity area after completion project activities; Total Soil Resource Commitment (TSRC) was below 5% for defined activity areas, with decreases of up to 2% attributed to road decommissioning. DD & TSRC objectives were achieved because of project design features, which included recontouring skid trails, rehabilitating landings, and decommissioning temporary roads. Projects included: Scriver Integrated Resource Project, Williams Creek Project, Buckskin Restoration Project, Clear Creek Integrated Project, High Valley Integrated Restoration Project, and North Pioneer & South Pioneer Fire Salvage & Reforestation Projects.
Prescribed Fire	DD was found to be within the Forest Plan criteria of less than 15% for each activity area after completion project activities; TSRC is not an appropriate indicator. Projects include Rocky Canyon and Cottonwood II Fuels Reduction Project.
Rangeland Management	DD was found to be within the Forest Plan criteria of less than 15% for each activity area after completion project activities; effective ground cover (EGC) was representative of vegetation communities to protect soils; TSRC is not an appropriate indicator. Allotments evaluated include Ola Hill and Dixie.
Road Decommissioning	FY2016: 8.1 miles. FY2017: 29.3 miles. Projects include: GRAIP to WINE, Dollar Creek, Clear Creek, BAER – decommission unauthorized routes.

Invasive Species

Monitoring Question #16

Are Forest invasive species management activities effectively controlling or eradicating targeted populations of noxious weeds and preventing new invader species from becoming established?

Findings

The Boise NF found no need for changing the Forest Plan, management activities, or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *two-year* monitoring cycle.

Indicator #1

Acres treated of current infestations

Indicator #2

Acres treated of new infestations

Indicator #3

Acres treated of new invader species to the Forest

Figure 6: Range technicians perform early detection rapid response work for invasive species in the Bearskin Fire area

Data Source for All Indicators

The data used to respond to this question was generated from the Forest Service Intrastructure (INFRA) database and Boise NF Corporate GIS data sets. Annually, field personnel record site information and log in GPS points at each noxious weed treatment site. This data is entered into the official Forest Service database, INFRA, with the spatial data being entered into Boise NF Corporate GIS data sets. This database tracks locations and acres treated, as well as target noxious weed species. The data for this report was drawn from these field level entries from INFRA and GIS data sets.

Results for All Indicators

When comparing acres of weed infestations treated from year to year, it is generally noted that if sites are retreated, the amount of herbicide used on the site becomes less over time for a given site – meaning the weed infestation is contained, controlled and/or eradicated at that site. Retreatments occur at a site because the seed source that exists in the soil continues to germinate each year. Some sites do not require retreatment the following year, but may require retreatments 2 or 3 years in the future. Acres of weed infestations treated each year will fluctuate due to environmental conditions that influence seed germination, wildfire disturbances, drought and other management activities or priorities.

Table 10: Infestation Treatment Acres

Acres of known infestations in management areas identified for eradication or control	Acres treated of new invader species to the Forest	Acres treated of new infestations
This is the acreage sum from INFRA called 'Acres Applied' for treatment areas (SUIDs) that were treated in 2017	This is the acreage sum from INFRA called 'Acres Applied' for SUIDs with new invader species identified in 2017	This is the acreage sum from GIS and INFRA called 'Acres Applied' for treatment areas (SUIDs) that were newly created in 2017
15,890	0	2,459

The acres identified above in the first column of Table 10 are less than previous years mainly because in previous years the Forest was treating many sites that experienced wildfires. It is common for treated acres to increase following wildfire disturbances, then decline 4-5 years following wildfire, once native vegetation re-establishes on the site.

Human Uses & Designations

Facilities

Monitoring Question #17

Is the transportation system providing recreational opportunities and safe and efficient public and agency access, and are they environmentally compatible?

Findings

The Boise NF found no need for changing the Forest Plan, management activities, or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to report the results for this monitoring question's Indicators #1, 2, and 3 on a *two-year* monitoring cycle. Indicator #4 (National Visitor Use Monitoring [NVUM] Survey) will be reported on a *five-year* monitoring cycle with results and findings reported in the monitoring report the year after the Boise NF receives the NVUM data.

The National Visitor Use Monitoring Survey is scheduled to be completed in Fiscal Year 2019. The Boise NF will evaluate results for the 2020 Forest Plan monitoring report.

Maintenance of the transportation system is complex because it is partially accomplished through cooperation with other agencies (e.g. County and Highway districts), cost share cooperators (e.g. Idaho Department of Lands) and private landowners (e.g. Potlatch). In some cases, maintenance responsibilities are exchanged with other jurisdictions through maintenance agreements when such actions create efficiencies for both parties.

VIDEO: Impacts to recreation following the Pioneer Wildfire and how the Boise NF is working with partners to address them

The Forest's ability to maintain the road system depends on a number of factors, such as:

- Total miles of open roads
- Allocated funding for road maintenance
- Miles maintained through commercial activities, such as timber sale and stewardship contracts
- Allocated funding for road improvement projects to support other resources
- Road maintenance levels
- Resource protection levels
- Recreation traffic levels

Road maintenance budgets fluctuate year to year but have generally declined over the years. As timber sales have declined, commercial user contributions to road maintenance have also declined.

However, traffic volumes on the Forest road system have steadily increased, which has increased the need for traffic induced seasonal blading and long-term surface aggregate replacement. Local population growth has increased the burden on County-maintained road systems, while budgetary constraints have concentrated maintenance priorities on roads with the highest use and closer to urban areas.

A Forest Road Maintenance Plan is developed each year after meeting with District personnel to determine priorities. Generally, roads subject to the Highway Safety Act (maintained for passenger car vehicles) are given a higher priority. Critical health and safety work items are also assigned a higher priority than critical resource protection work items. The Maintenance Plan is subject to change as field conditions are continually being monitored by Forest staff.

Figure 7: Entrance to Grayback Gulch designated recreation area where the bridge is scheduled for replacement

Indicator #1

Miles of roads maintained by maintenance level

Data Source

Forest Service Infrastructure (INFRA) Roads Database Road Maintenance Plan and Accomplishments

Results

Roads under the jurisdiction of the Boise NF are classified according to Operational Maintenance Levels (ML). Nationally, the Forest Service defines five Operational Maintenance Levels: 1, 2, 3, 4, and 5. ML 1 roads are closed to motor vehicle use. ML 2 roads are maintained for high-clearance vehicles. ML 3, 4 and 5 roads are maintained for passage by standard passenger cars during the normal season of use.

Table 11: Total Miles of Roads by Operational Maintenance Level (ML) under the Jurisdiction of the Boise NF

ML5	ML4	ML3	ML2	ML1[3]
0	14	501	2,597	1,556

[3] ML1 roads are closed to motorized traffic and in a state of storage. Road maintenance level 1 is defined in the FSH 7709.59, sec. 62.32 as: "These are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the

Table 12: Accomplishments by Road Maintenance Level (ML) (in miles)

Fiscal Year (FY)	ML5	ML4	ML3	ML2	ML1
2016	0	8.5	434.0	343.9	7.2
2017	0	8.5	360.8	381.0	12.0

Indicator #2

Miles of road decommissioned

Data Source

Forest Service Watershed Improvement Tracking database

Background

The Forest Service is continually evaluating the road system needed to achieve the desired conditions in the Forest's 2010 Land and Resource Management Plan: promote ecosystem health; address public safety and efficiency of operations in an environmentally sensitive manner within current and anticipated funding levels; and provide for a safe and cost-effective transportation system that provides access for the use and enjoyment of NFS lands. Roads not likely needed for future use are decommissioned or converted to other uses through project level NEPA decisions.

Results

For fiscal years 2016 and 2017, the Boise NF reported accomplished road decommissioning for:

- Fiscal Year 2016: 8.1 miles
- Fiscal Year 2017: 29.3 miles

Indicator #3

Miles of trail maintained

Figure 8: Day hiking within the Trinity Mountain area located on the Mountain Home Ranger District

road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level."

Data Source

Forest Service Infrastructure (INFRA) Trails Database

Results

There are 2,009 miles of National Forest System trails on the Forest. In Fiscal Year 2016, 810 miles were maintained and 38% met agency standards. In 2017, 781 miles were maintained and 40% met agency standards. According to the Government Accountability Office, the Forest Service nationally is only able to maintain about 25% of National Forest System Trails to agency standard. In 2016, 523 miles of the trails maintained were maintained by partners and volunteers. In 2017, 393 miles of the trails maintained were maintained by partners and volunteers.

Indicator #4

National Visitor Use Monitoring Survey Percent Satisfaction Index for facilities, road conditions, trail conditions, and services provided *(Not answered in 2018)*

Monitoring Question #18

Do potable water systems meet federal, State and local requirements?

Findings

The Boise NF found no need for changing the Forest Plan, management activities, or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *two-year* monitoring cycle.

Indicator

Water quality monitoring results and condition surveys

Data Source

Infrastructure (INFRA) Water Systems Database and Water Sampling Module

Results

All of the water systems in operation during fiscal years 2016 and 2017 were sampled per all applicable requirements. During both fiscal years 2016 and 2017, several systems were closed for extended periods due to active fire and fire restoration activities for public safety. Sanitary surveys are performed once every 5 years on every system.

For systems with initial positive coliform samples, the Boise NF addressed potential sanitary concerns and repeat coliform samples came back negative.

Table 13: Water System Samples and Surveys by Fiscal Year

Fiscal Year	Systems Open	Total Coliform Samples	Positive Coliform Samples	Repeat Coliform Samples	Nitrite Samples	Nitrate Samples	Sanitary Surveys Conducted
2016	79	419	21	21	40	96	15
2017	79	374	26	26	2	67	12

Recreation

Monitoring Question #19

Are recreation activity levels changing, and are shifts occurring between types of activities and locations of recreational use?

Findings

The Boise NF found no need for changing the Forest Plan, management activities or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to answer this monitoring question on a *five-year* monitoring cycle with results and findings reported in the monitoring report the year after the Boise NF receives the monitoring data. The National Visitor Use Monitoring Survey is scheduled to be completed in fiscal year 2019. The Boise NF will evaluate results in the 2020 Forest Plan monitoring report.

The current Recreation Opportunity Spectrum (ROS) provides a diversity of user experiences and reduces user conflicts.

Indicator #1

Project-specific changes to the Recreation Opportunity Spectrum (ROS)

Data Source

NEPA decision documents for pertinent projects implemented in fiscal years 2016 and 2017

Results

No project-specific changes occurred to the Recreation Opportunity Spectrum (ROS) in fiscal years 2016 or 2017. However, the Becker Integrated Resource Project (decision signed in 2016) improved and enhanced the quality and diversity of recreational opportunities in the Middle Crooked River and Pikes Fork subwatersheds by providing for a variety of recreation experiences. It also reduced the potential for conflicts between motorized and non-motorized recreational users. The Decision added 37.9 miles of summer non-motorized trail and 60.2 miles of existing winter non-motorized trail. The miles of summer non-motorized trail include approximately 32.4 miles of existing trails managed in partnership with Idaho Parks and Recreation (IDPR) through a partnership agreement. Authorizing these trail systems allows the Forest to expend trail maintenance dollars and require IDPR to maintain the trails to Forest Service standards. The project also reduced the potential for non-motorized and motorized user conflicts in the winter by adding three new winter motorized restriction areas, totaling 3,215 acres, which will provide for a safer winter recreation experience for users of this area.

Indicator #2

National Visitor Use Monitoring results by activity *(Not answered in 2018)*

Economic, Cultural & Social Environment

Social & Economic

Monitoring Question #20

Is the Forest meeting the expected outcomes as by-products of restoration?

Findings

The Boise NF found no need for changing the Forest Plan.

The Boise NF proposes to use a broader suite of implementation tools – including GNA, stewardship contracting, and traditional timber sale contracting – to ensure management activities continue to offer economic development and local community opportunities while maintaining and restoring ecological integrity of National Forest System lands.

The Boise NF found there **may be a need for changing the monitoring program** as Indicator #2 (number of stewardship contracts awarded) may no longer be the appropriate measure for assessing whether the Forest met the expected outcomes as by-products of restoration. The Boise NF proposes to use a broader suite of implementation tools – including GNA, stewardship contracting, and traditional timber sale contracting – to ensure management activities continue to offer economic development and local community opportunities while maintaining and restoring ecological integrity of National Forest System lands.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *two-year* monitoring cycle.

VIDEO: How the Boise NF is working collaboratively with partners and local communities to achieve restoration objectives

Indicator #1

Amount of commercial and non- commercial wood products provided Allowable Sale Quantity (ASQ) and Total Sale Program Quantity (TSPQ)

Data Source

Timber Information Manager (TIM) applications databases

Results

Table 14: Amount of Commercial/Non-Commercial by Wood Product & Fiscal Year

Commercial/Non-Commercial Wood Product	Unit of Measure	Fiscal Year 2016 Quantity	Fiscal Year 2017 Quantity
Sawtimber	MMBF	3.171	60.054*
Commercial fuelwood	MMBF	0.265	0.31896
Poles	MMBF	0.035	0

Indicator #2

Number of stewardship contracts awarded

Data Source

Internal Forest Service Contracting records

Results

In fiscal years 2016 and 2017, the Boise NF offered three (3) stewardship contracts but were unable to award any of the stewardship contracts due to the difficulty of developing a stewardship contracts for salvage harvest. The Boise NF anticipates offering at least one stewardship contract each year.

Indicator #3

Acres treated that contribute to achievement of desired restoration conditions

Data Source

Natural Resource Manager (NRM), Forest Service ACtivities Tracking System (FACTS) Database

Results

The Boise NF reported 40,518 acres of vegetation restoration as accomplished in fiscal years 2016 and 2017. For reforestation, the Forest Service includes only acres certified successfully established following a stocking survey. The Boise NF does not include salvage harvesting as a restoration action, nor wildfire, even if portions of the fire resulted in resource benefits. Refer to the discussion under Monitoring Question #8 for reported natural ignition wildfire acres for fiscal years 2016 and 2017.

Monitoring Question #21

Are current allotment management strategies effective in meeting or moving toward desired vegetation, ground cover, and soil stability conditions for non-forested vegetation types?

Findings

The Boise NF found no need for changing the Forest Plan, management activities or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to report the results for this monitoring question's Indicator #1 on a *two-year* monitoring cycle. For Indicator #2 (long-term Allotment Trend monitoring) a *two-year* monitoring cycle applies with results and findings reported in the Monitoring Report the year after the Boise NF receives the monitoring data.

Indicator #1

Number of grazing authorizations provided annually and over a 10-year period

Data Source

Forest Service Infrastructure (INFRA) database and a data response from each Ranger District

In order to identify the number of grazing authorizations provided annually and over a 10 year period, the Annual Grazing Statistical Forest/Grassland report was generated from INFRA. From the Statistical Report, the Total National Forest System (NFS) Authorized Head Months (HMs) was used to compare each year, instead of number of grazing authorizations, which usually remain fairly constant.

Results

The fluctuation seen in the Authorized HMs is usually due to annual variations in climate, resulting in drought conditions or excess forage availability, as well as wildfire followed by non-use for resource protection. Often times Authorized HMs may fluctuate due to permittees requesting non-use for personal convenience due to livestock market variability.

The decline in HMs is due to the catastrophic wildfires that have occurred across the Boise NF over the past 7 years.

Table 15: Total NFS Authorized HMs by Year

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total NFS Authorized HMs	57,746	59,625	65,119	58,173	65,262	69,906	72,031	74,110	87,970	70,342

Indicator #2

Percentage of upland and riparian sites monitored that have a long-term trend at meeting or moving toward meeting desired future conditions

Data Source

Forest Service Infrastructure (INFRA) database and a data response from each Ranger District

Results

No trend monitoring was available at the time of this report.

While District staffs monitor and collect livestock use data annually on grazing allotments, trend data is not generally collected every year. Trend is a long-term measurement that is monitored and compared over a long period of time. Allotment trend sites are usually monitored once in a 10-year period; however, it is not uncommon for measurements to be collected more often (3-5 years), or less often (15-20 years). Therefore, there may be Forest Plan reporting periods where no trend sites were monitored, or periods where several sites were monitored. The trend numbers generated for each Forest Plan reporting period are unique to that reporting period, and cannot be compared over time. Trend monitoring may include nested frequency, Multiple Indicator Measurements, soil cover, photo points, etc.

Monitoring Question #22

What is the visitor satisfaction on National Forest System (NFS) lands?

Findings

The Boise NF found no need for changing the Forest Plan, management activities or the Forest Plan monitoring program.

For future Forest Plan Monitoring, the Boise NF found it appropriate to answer this monitoring question on a *five-year* monitoring cycle with results and findings reported in the monitoring report the year after the Boise NF receives the monitoring data. The National Visitor Use Monitoring Survey is scheduled to be completed in Fiscal Year 2019. The Boise NF will evaluate results for the 2020 Forest Plan monitoring report.

Indicator

National Visitor Use Monitoring (NVUM) visitor satisfaction *(Not answered in 2018)*

Tribal Interests & Rights

Monitoring Question #23

Are tribal interest and rights identified through consultation being addressed?

Findings

The Boise NF found no need to change the Forest Plan or management activities related to tribal interests and/or rights.

The Boise NF found a **need to change the Forest Plan monitoring program**. The Boise NF recommends removing Indicator #2 ("Results of consultation are reported annually") since the Forest does not consistently receive requests for annual reports of tribal consultation results. Indicator #1 adequately addresses the monitoring question and relevant plan components. For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *two-year* monitoring cycle.

Indicator #1

Challenges to addressing tribal interests and rights identified are reviewed with tribal representatives through the agreed upon consultation forum to determine opportunities to improve consultation processes to better achieve desired outcomes.

Data Source

Tribal Consultation Protocols, Tribal Letters and Government-to-Government Meetings

Results

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. Twenty-three (23) informal and formal government-to-government consultation meetings were conducted with the three tribal governments during fiscal years 2016 and 2017. Items of tribal interest and rights were identified and discussed at these meetings and tribal comments were taken into consideration during the decision making process. Additionally, project information was sent to two tribal governments, per Forest tribal consultation protocols, on thirty-six (36) projects during the reporting period.

Indicator #2

Results of consultation are reported annually

Data Source

No data source available

Results

No annual reports requested in 2016 or 2017.

Monitoring Question #24

Are cultural resources and historic properties being managed to standard?

Findings

The Boise NF found no changes needed to the Forest Plan or management activities.

For future Forest Plan Monitoring, the Boise NF found it appropriate to continue to answer this monitoring question on a *two-year* monitoring cycle.

Background

The purpose of the Heritage Program is to find, protect, and manage the most valuable cultural and historic properties under Agency care. FSM 2360 – Heritage Program Management – provides

direction for achieving this purpose through planning and collaboration with stakeholders, finding and protecting the most important resources, and providing opportunities for the public to learn about the prehistory and history evident on NFS lands.

In 2011, the Forest Service implemented a new standard for Heritage Program management that provides an indication of each national forest's ability to balance operations in support of environmental compliance (e.g. National Historic Preservation Act of 1966, National Environmental Policy Act of 1969) with broader goals for cultural and historic properties stewardship. The Boise NF adopted the seven indicators of the standard to reflect its accomplishments in managing cultural and historic properties to standard, as displayed below.

Indicator #1

Presence of a Heritage Program Plan (comprehensive plan that consists of a cultural resource overview, predictive model, monitoring plan, Native American Graves Protection and Repatriation Act (NAGPRA) protocol, looting and vandalism protocol, and emergency response protocol)

Data Source

Natural Resource Manager (NRM) Heritage Database

Results

The Boise NF maintains two of the seven elements of a comprehensive plan: the cultural resources overview and site predictive model.

Indicator #2

Inventory of National Forest System (NFS) Lands (Survey of NFS lands for cultural resources)

Data Source

NRM Heritage Database

Results

In 2016 and 2017, the Boise NF inventoried 1090 acres for cultural resources and identified thirteen new sites.

Indicator #3

National Register of Historic Places (NRHP) evaluations (Cultural resources [i.e. unevaluated sites] are evaluated for NRHP eligibility)

Data Source

NRM Heritage Database

Results

The Boise NF has documented over 2,000 sites since 1976. The majority have not been evaluated for their National Register of Historic Places eligibility, creating a backlog in terms of long-term management direction for these sites. In 2016 and 2017, the Boise NF consulted with the Idaho State Historic Preservation Office (SHPO) on the NRHP eligibility of 18 sites, none of which were determined eligible for the Register.

Indicator #4

Priority Heritage Assets (PHA) Condition Assessments (Historic properties of distinct public value are PHAs and have current condition assessments less than five years old)

Data Source

NRM Heritage Database

Results

In 2016 and 2017, 32 PHAs were identified on the Boise NF; 25 of those had current condition assessments.

Indicator #5

Cultural Resource Stewardship (Activities that physically protect historic properties)

Data Source

NRM Heritage Database

Results

In 2016, the Boise NF Heritage Program completed historic preservation maintenance for the Whitehawk Lookout. In 2017, the Boise NF worked with the Region 1 Historic Preservation Team to replace deteriorating logs on a historic barn at Elk Creek Ranger Station.

Indicator #6

Opportunities for Study and/or Public Use (Conservation education and the scientific study and/or interpretation of historic properties)

Figure 9: Boise NF Heritage program staff participate in the Idaho Center for Outdoor Education event held on the Idaho City Ranger District

Data Source

NRM Heritage Database

Results

In 2016 and 2017, Heritage program staff engaged in 13 public outreach events. These events ranged from outdoor education projects to historic site tours. Presentations were given at the Osher Lifelong Learning Institute at Boise State University. Scientific analysis (x-ray fluorescence) was conducted on artifacts from three archeological sites to determine the source of obsidian used to make projectile points and other stone tools.

Indicator #7

Volunteer Hours (Volunteer participation on historic preservation projects)

Data Source

NRM Heritage Database

Results

In 2016, volunteers contributed 365 hours to historic preservation projects on the Boise NF. These projects included work on archeological collections, historic photograph collections, and historic preservation maintenance on the Whitehawk Lookout. In 2017, volunteers contributed 125 hours. These projects included archeological excavation of a Chinese miner's cabin, researching historic mining ditches in the Idaho City area, and log work on a historic barn at Elk Creek Ranger Station.

Conclusion

Table 16 summarizes the findings for each question and indicator, as well as the anticipated frequency of answering the question and/or indicator.

Table 16. Summary of monitoring evaluation findings for all monitoring questions

Monitoring Question/Indicator	Summary of Findings	Anticipated Frequency of Answering
Question 1	May be addressed in 2020	To be determined
Question 2	No need for change	Every 2 years
Question 3, Indicators 1 & 2	No need for change	Every 2 years
Question 4, Indicators 1 & 2	May be addressed in 2020; may need to change indicators	To be determined
Question 4, Indicator 3	No need for change	Every 2 years
Question 5, Indicators 1 & 2	May be addressed in 2020; may need to change indicators	To be determined
Question 6	May be addressed in 2020; may need to change indicator	To be determined
Question 7	May be addressed in 2020; may need to change indicator	To be determined
Question 8	No need for change	Every 5 years
Question 9	No need for change	Every 2 years
Question 10, Indicators 1-5	No need for change	Every 4 years beginning in 2020

Monitoring Question/Indicator	Summary of Findings	Anticipated Frequency of Answering
Question 11	Reassess monitoring question and make final recommendation on revising	To be determined
Question 12, Indicators 1 & 2	No need for change	Every 2 years
Question 13	No need for change	Every 6 years; 2024 report will address 2017-2023
Question 14	No need for change	Every 6 years; next Integrated Report will be compared to 2014 Report
Question 15, Indicators 1 & 2	No need for change	Every 2 years
Question 16, Indicators 1-3	No need for change	Every 2 years
Question 17, Indicators 1-3	No need for change	Every 2 years
Question 17, Indicator 4	No need for change	Every 5 years, following National Visitor Use Monitoring report
Question 18	No need for change	Every 2 years
Question 19, Indicators 1 & 2	No need for change	Every 5 years, following National Visitor Use Monitoring report
Question 20, Indicators 1 & 3	No need for change	Every 2 years
Question 20, Indicator 2	Reassess indicator and make final recommendation on revising	Every 2 years
Question 21, Indicators 1 & 2	No need for change	Every 2 years; Indicator #2 answered in the monitoring report following receipt of long-term Allotment Trend reporting
Question 22	No need for change	Every 5 years, following National Visitor Use Monitoring report
Question 23, Indicator 1	No need for change	Every 2 years
Question 23, Indicator 2	Recommended to be removed	N/A if removed
Question 24, Indicators 1-7	No need for change	Every 2 years