United States
Department of
Agriculture

Forest
Service

September 2014

# Forest Plan Monitoring and Evaluation Report

## Fiscal Year 2013

Rio Grande National Forest,
Colorado

# CERTIFICATION

The Rio Grande National Forest's (RGNF or Forest) Land and Resource Management Plan (Forest Plan), approved on November 7, 1996, is a dynamic and evolving document. Monitoring of the Forest Plan is essential in evaluating its effectiveness and making necessary adaptive management changes. The Forest Plan has been amended seven times to date. Overall, the 2013 monitoring and evaluation results indicate that the management of the Forest is meeting goals, desired conditions, standards and guidelines (S&Gs), and prescriptive allocations (per 36 CFR 219.12 (k)). General forest specialist recommendations can be found in the appendix to this document. The following are specialist recommendations for future forest plan changes:

- Place more emphasis on boreal toad monitoring and conservation
- Adjust monitoring for eyries to include sample areas
- Change monitoring frequencies for RMBO
- Re-evaluate monitoring of Spruce-fir zone
- Add Natural Arch site as TCP to the plan
- Add Rio Grande Pyramid as a locale of interest to the plan

I have reviewed the annual monitoring and evaluation report for the RGNF for FY 2013. I believe that the monitoring and evaluation requirements of the Forest Plan have been met and that the decisions in the Forest Plan are still valid. I have noted and considered the recommendations for the RGNF and, after further analysis and required public notification and involvement, will implement those that I decide are appropriate.

Adam Mendonca

Acting Forest Supervisor
Adam Mendonca

9-30-2014

Date

# 1. Introduction and Status

On November 7, 1996, the Revised Land and Resource Management Plan (Forest Plan) for the Rio Grande National Forest (RGNF or Forest) was approved by Regional Forester Elizabeth Estill. The Forest Plan establishes the management direction for all future activities to ensure that an interdisciplinary approach is used to achieve the desired conditions described for all areas of the Forest.

This monitoring and evaluation report is based on the RGNF Monitoring Plan, as described in chapter V of the Forest Plan for the RGNF. This report is not a list of outputs; rather, it describes conditions of the various resources on the Forest. The report is key to the concept of adaptive management (the ability to change as new information or technology is developed) and is the feedback mechanism for improved resource management. The information presented in this report will be used to determine if an amendment or revision of the Forest Plan is needed.

The organization of this report is as follows. First, there is a brief discussion of the status of the Forest Plan appeals, followed by a discussion of amendments and potential amendments. Next are monitoring requirements and results, by resource (results are called "State of the Resource"). An appendix provides a detailed summary of this past year's monitoring results.

# 2. Appeals

There are no outstanding appeals to the RGNF Forest Plan at this time.

# 3. Forest Plan Amendments

Seven Forest Plan amendments have occurred to date. There are also several amendments, corrections, or other actions that have been recommended. These are outlined below.

## Completed Amendments

There have been seven amendments to the Forest Plan to date. A brief description of each amendment is provided below.

### *Amendment # 1*

**Twister Blowdown Management Area Prescription 3.3.** This amendment provided a temporary exception to Management Area (MA) Prescription 3.3. On March 2, 1998, a decision notice was signed that amended the Forest Plan to allow for timber salvage harvesting on approximately 60 acres within MA Prescription 3.3 (Backcountry) in the Twister Blowdown area. The non-significant amendment changed the "no harvest" Forest Plan standard in this prescription so that salvage of blowdown timber could occur to reduce the risk of bark beetle infestation and spread. The timber harvest was completed and the area is again managed as Backcountry. Spruce beetle monitoring is continuing in the backcountry area.

### *Amendment# 2*

**Wilderness Management Direction.** The scope of Forest Plan direction for wilderness management was limited in the 1996 revised Forest Plan due to ongoing wilderness planning efforts. It was recognized that population growth in Colorado has affected the amount and type of recreation use within the South San Juan and the Weminuche Wilderness Areas, the most visited wilderness area in

the State. Forest Plan direction pertaining to the management of recreation use, changes in recreational use patterns, and preservation of the wilderness character of these areas, were reviewed. A "limits of acceptable change" analysis; a planning tool that enables wilderness managers to define acceptable wilderness conditions and then develop standards, guidelines, indicators, and management actions to meet acceptable conditions; was used to help formulate a Forest Plan amendment pertaining to wilderness management direction. On August 3, 1998, a decision notice was signed to:

- implement wilderness management goals for the Forest Plan,
- change MA prescription definitions and locations,
- add wilderness MA prescription and Forest wide standards and guidelines (S&Gs),
- define thresholds and possible management actions within wilderness when thresholds are exceeded,
- add wilderness monitoring requirements, and
- add wilderness management to the Forest Plan.

This amendment also clarified the stocking of indigenous fish in wilderness. The Forest Plan amendment and implementation of the wilderness management direction and action items began on October 1, 1998.

## *Amendment# 3*

**Adjustment of a Botanical Special Interest Area Boundary**. On June 18, 1999, a decision notice was signed approving the adjustment of a special interest area (SIA) boundary. The SIA was originally designed to protect a sensitive plant (Ripley milkvetch), and the adjustment was made to more accurately reflect the actual habitat of the plant. Ripley milkvetch generally grows in relatively open ponderosa pine/Arizona fescue communities (Douglas-fir may also be present and is somewhat co-dominant with ponderosa pine) where canopy coverage by all trees is less than 25 percent and where the elevation is about 9,200 feet or lower. Due to the electronic format used when revising the Forest Plan, abundant higher elevation habitat, not specifically conducive to Ripley milkvetch, was included within the SIA boundary. The analysis to support the non-significant amendment, done as a part of the November Analysis Area Environmental Assessment (EA), resulted in reducing the acreage of the botanical SIA from 2,076 acres to 910 acres. The acreage excluded from the SIA (1,166 acres) was included in a Bighorn Sheep MA Prescription (5.42). The location of the botanical SIA is to the west of Fox Creek, in the Hicks Canyon area, on the Conejos Peak Ranger District.

## *Amendment# 4*

**Timber Suitability Amendment**. On March 2, 2000, a decision notice was signed to amend the Forest Plan to correct suitable timber lands on the RGNF. The non-significant amendment corrected omissions made between the publication of the draft and final environmental impact statements (EISs) for the revised Forest Plan. Net adjustments of acres to the suitable timber land base result in an 8.3 percent increase in suitable lands, which was determined to not be a significant change. The amendment became effective upon completion of the consultation process with U.S. Fish and Wildlife Service (USFWS) regarding the adequacy of the Forest Plan biological assessment and evaluation.

## *Amendment# 5*

**Management Indicator Species (MIS) Amendment**. A decision notice for a non-significant amendment to the Forest Plan was signed on October 24, 2003, which designated nine MIS, and

added or modified the associated S&Gs and monitoring and evaluation strategy in the Forest Plan.

### *Amendment# 6*

**Baca Mountain Tract.** This amendment addressed the ownership and jurisdictional changes due to Public Law 106-530, Great Sand Dunes National Park and Preserve Act of 2000. Portions of the Sangre de Cristo Wilderness within the RGNF became the Great Sand Dunes Preserve. The RGNF also obtained a portion of the Baca Grande Land Grant called the Baca Mountain Tract. This amendment corrected the Forest Plan map to reflect the new RGNF boundaries and to incorporate the Baca Mountain Tract into the Forest Plan. The Baca Mountain Tract Amendment to the Forest Plan was analyzed in the Baca Mountain Tract/Camino Chamisa Environmental Assessment (EA), a joint EA with the Great Sand Dunes National Park and Preserve. The Great Sand Dunes National Park and Preserve, Saguache County, USFWS, and CDOW were cooperating agencies in this EA. The amendment was completed in November 2009.

### *Amendment# 7*

**Southern Rockies Lynx Management Direction Amendment.** A non-significant amendment to all the Forest Plans in Colorado was signed on October 28, 2008, by Rick Cables, Regional Forester. This amendment added lynx conservation measures through the application of revised S&Gs to the Forest Plan.

## Status of Previous Recommendations: Potential Forest Plan Amendments, Administrative Corrections, or Other Actions

- There were several recommendations for changing the wording of some of the silvicultural guidelines and for changing monitoring requirements for fish and birds in the Forest Plan. These were addressed in the MIS amendment discussed above.
- There have been recommendations for correcting mapping errors in the inventoried roadless area (IRA) boundaries. IRA mapping errors were identified in the Forest Roads Analysis Report (2004) and documented in the RGNF Colorado Roadless Review Taskforce Briefing Paper and presentation dated June 7, 2006, and the Colorado Roadless Rule DEIS.
- The Forest continues to suffer from catastrophic, epidemic-level insect infestations. The Forest continues to assess forest health and may propose changes to the Forest Plan to allow for vegetation treatments where necessary.
- The Forest needs to assess the Forest Plan recreation standard which dictates recreational stay duration limits to make the standard consistent with other forests in the region.
- The Village at Wolf Creek access analysis identified the need to change the scenic integrity objective (SIO) at the Wolf Creek Ski Area to make it compatible with the existing visual situation which has been highly modified due to the ski area development, Highway 160 and its improvements, and the Colorado Department of Transportation (CDOT) maintenance facilities. There was also a recommendation to update the desired condition statement for the ski area. These items will be addressed when the next NEPA analysis for ski area development is completed.
- The Forest recently conducted an analysis to assess Forest Plan consistency with the 2005 Travel Management Rule. The analysis concluded that the Forest Plan, including the afternoon ATV big game retrieval direction, is in compliance with the 2005 Travel

Management Rule and no changes to the Forest Plan are needed.

- A recommendation has been made to incorporate current terminology and definitions for wildland fire and prescribed fire management policy and implementation into the Forest Plan. This may be addressed as an administrative correction to the Forest Plan in the future.
- A recommendation has been made to update the Scenic Resources standards and guidelines terminology. This might be accomplished through an administrative correction or during Forest Plan revision.
- The Forest continues to update the motor vehicle use maps. Future travel management planning may propose changes to the Forest Plan.
- A recommendation has been made to conduct a management indicator species (MIS) status assessment for avian species, mule deer, and elk to determine if changes are needed in monitoring.
- A recommendation has been made to update the Forest Plan biological evaluation for wildlife to reflect the current Regional Forester's sensitive species list.

# 4. Monitoring Requirements and State of the Resource

## Introduction

Monitoring and evaluation criteria are based on national policies, regional monitoring emphasis items, interdisciplinary team concepts, and legal and other policy requirements. The monitoring and evaluation program asks the fundamental questions, "How are things working?" and "What needs to be changed?" The purpose of the monitoring program is to establish a basis for periodic determination and evaluation of the effects of management practices (36 CFR 219.11(d)). The criteria include the following:

- Goals, objectives, and desired conditions identified in the Forest Plan,
- Forest management direction,
- Land suitability,
- MA prescriptions, as well as the Forest wide and MA-specific S&Gs,
- The monitoring plan, and
- Congressional recommendations.

Annual monitoring goals can be described in the annual monitoring operation plan detailing monitoring expected to be completed in the upcoming year. Chapter V of the Forest Plan outlines the monitoring task, precision, frequency, reporting method, and the responsible party.

Three types of monitoring are described for Forest management:

- **Implementation Monitoring.** This includes periodic monitoring of project activities to determine if they have been designed and carried out in compliance with Forest Plan direction and management requirements.
- **Effectiveness Monitoring.** This level of monitoring is used to determine if management activities are effective in achieving the desired future condition described for each of the various management areas.
- **Validation Monitoring.** This level of monitoring is used to determine whether the initial data, assumptions, and coefficients used in the development of the Forest Plan are correct,

or if there is a better way to meet goals and objectives and desired future conditions.

The monitoring and evaluation report focuses primarily on implementation and effectiveness monitoring. It also addresses validation monitoring which involves more of a long-term analysis.

# FY 2013 Monitoring and Evaluation by Resource

This section briefly synopsizes the minimum level of monitoring identified for each resource component of the monitoring plan (under "Monitoring Requirements" subheading); and (2) summarizes FY 2013 monitoring results for each resource component (under "State of the Resource" subheading). More detail on monitoring requirements is included in the Forest Plan (chapter V, pages V-4 through V-16).

Note that Forest monitoring efforts are focused on meeting these requirements; however, the amount of monitoring accomplished for each element is a function of available funding.

## *Air Quality*

### Monitoring Requirements

Maintaining air quality at a level adequate for protection and use of National Forest System resources is required by 36 CFR 219.27(a)(12). To accomplish air quality monitoring, a number of techniques will be employed. For instance, visibility data are available from the National Park Service, which monitors visibility at the Great Sand Dunes National Park. Surveys conducted at the same time in all four wilderness areas on the RGNF and Great Sand Dunes National Park have identified the lakes most sensitive to changes in acidity; these have been selected for long-term trend monitoring. Regional protocols and the Forest Air Quality-Monitoring Plan stipulate that these lakes should be monitored three times per summer to be most effective.

### State of the Resource

Air quality for the Forest is excellent and remains an outstanding feature that people come to enjoy. Long visual distances enhance beautiful scenery. Some impacts occur from prescribed burning or wildfire, but are quickly dissipated by stable atmospheric conditions. Regional haze diminishes visibility in some areas, but visual distances remain among the best in the country. Prescribed burn operations did not occur in 2012 due to a state wide ban on prescribed burning activities. Some pile burning occurred in fall/winter of 2011-2012.

In the summer of 2012, samples were collected from eight sensitive high-elevation lakes at established long-term sampling sites. Lake visibility and particulate data are useful in modeling to predict impacts from proposed facilities that could impact air quality. These data are also used to prescribe pollution control technology for new major polluting facilities. No additional information is available from lichen monitoring.

## *Aquatic Resources*

### Monitoring Requirements

Watershed health is a primary focus of the Forest Service, so particular emphasis will be placed on monitoring. Water resource monitoring will include evaluation of how well streams have been protected (including stream banks, shorelines, and wetlands), and how well erosion and flood hazards have been minimized. Watershed disturbance monitoring is expected to:

Identify disturbances from past, present, and proposed activities;

relate severity of disturbances to an equivalent roaded area;

compare total disturbance to a concern level, to measure relative risk; and

vary the concern level, based on existing information and experienced resource managers.

Monitoring and evaluation of stream health, water quality, and riparian conditions will be included in watershed assessments. Watershed assessments are to be completed on at least one stream and riparian area per analysis area for each EA project involving land disturbance. Monitoring of streams identified as "at risk" within watersheds will occur, and be reported in, watershed assessment sections of appropriate EAs. Monitoring to evaluate improvement over time of six streams identified as damaged in the monitoring plan will be reported based on long-term assessments (two streams will be evaluated each year).

## State of the Resource

Watershed disturbance is highest in areas of past timber harvest activities. Areas of low precipitation, such as the Saguache Ranger District, can tolerate more watershed disturbance before stream health begins to be impacted. The location of disturbances and how they are mitigated seem to be the more important criteria for protection of stream health. Forest S&Gs and design criteria to protect stream and soil health have proven effective in recent timber NEPA documents in regard to the spruce beetle epidemic.

The spruce beetle epidemic continued on the RGNF in 2013 and is reducing live basal area in watersheds forest wide. Approximately 480,000 acres of spruce stands have been impacted to date. These losses are likely resulting in minor to moderate increases in total runoff and peak flows. However, direct impacts to channel stability or slope erosion from these effects were not noted during field evaluations. Research has shown healthy streams with stable banks can accommodate these moderate changes in stream flow dynamics. In the coming years, excessive woody debris from falling trees could present problems at culverts and cause erosion of roads at these stream crossings.

Stream health on range allotments in Carnero, Snow Mesa, Alder, Bancos, Jim Creek, Bennet, Cat Creek, Alamosa, Hot Creek, Saw Log and Deer Creek allotments were evaluated and varied from robust to at-risk in more highly utilized areas. Stream health was determined by comparing channel conditions to a similar "reference stream" that represents expected conditions. This comparison is either made visually or by using bank stability and other measurements including PFC assessments. Pebble counts were conducted in 4 location along the Middle Fork Carnero Creek as part of a long term monitoring project associated with the South Saguache range allotment in that location. Isolated areas of hoof alteration were noted at several locations. These problems were noted mainly in small open meadows where drainages are narrow. Livestock missed during pasture cleaning contribute to these impacts. Range specialists have made and will continue to make adjustments to address these impacts to avoid excessive concentration of animals in sensitive riparian areas.

Parts of 16 watersheds and 88,724 acres were burned during the West Fork Complex of Fires which burned primarily in June and July of 2013, also greatly affected watershed conditions where it occurred. Potential issues include increased erosion and sedimentation in streams. Some preliminary monitoring was done in coordination with the BAER process and after monsoon rains by the district. Continued monitoring will occur in the coming years. Some storm proofing on FSR 430 and FSR 522 (Lake Fork and Fern Creek roads respectively) was completed in FY13, but the majority will be accomplished in FY 14.

National Core BMPs were required for the forest for the first time in FY13. Two were accomplished as prescribed by regional direction. One was assessment was done on a water well drilled for cattle and wildlife use and also on the Beaver Creek CG located on the Divide RD.

## Monitoring Requirements

The National Forest Management Act (NFMA) requires the RGNF Forest Plan to provide for the diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives (16 U.S.C. 1604(g)(3)(B). NFMA is implemented through the regulations at 36 CFR 219.19 and 36 CFR 219.27(a)(6), which require management of habitat in order to maintain species viability in the planning area (i.e., the RGNF). Thus, the Forest has a duty to harmonize multiple-use objectives with providing a reasonable certainty for species viability.

To determine if the Forest Plan is meeting this objective, the Forest uses several monitoring tools. Forest specialists will monitor those species and/or habitats about which there are some questions as to their potential viability. Species monitored are found on the threatened and endangered list, the Regional sensitive species list. For plants, species monitored are found on the Colorado Natural Heritage Program's list of species of special concern and significant plant communities. MIS are being monitored beginning in 2004.

Monitoring will occur at two different scales. The "fine-filter" scale will focus on particular plant and wildlife species that generally occupy distinct habitats which cannot be accurately monitored at the landscape level. MIS were specifically selected as one tool to help evaluate diversity and species viability Forestwide. The rest of the fine-filter work is specific to the known location(s) of the particular plant or animal. The intent of the fine-filter work is to track the species' population trends over time. The "coarse-filter" work focuses on tracking the changes in gross habitat conditions (such as cover type and structural changes).

To ensure that the Forest is meeting this objective, four attributes have been selected for monitoring vegetation because they capture the key components of vegetation diversity. Two of them involve tracking changes in the amount, quantity, and pattern of the vegetation that may appear over the life of the Plan. The third is a validation of the reference work and landscape-scale tools. The final attribute is a progress report on the gathering of data for the Forest's old-growth inventory/reconnaissance.

MIS will also be used to monitor the Forest's objective for providing for and maintaining diversity and to assess species viability. Project-level MIS analyses will address species viability within the context of the entire Forest. MIS analysis at the project level focuses on habitat and its availability and occupancy to support a minimum number of reproductive individuals that are well-distributed so that interactions can occur within the planning area (i.e., at the Forest level). MIS data collected at the project-level is a key component for assessing the relationship between the Forest-level MIS population trends and habitat changes. MIS analysis at the Forest level focuses on population trend data for the selected MIS, which is the appropriate level for biological populations and the cumulative effects to habitat across the Forest. A multitude of information can be used for MIS monitoring which makes possible the evaluation of diversity in terms of its prior and present condition (36 CFR 219.26).

## State of the Resource

**Ecology Program.** The ecology program is responsible for the plant and plant community-related items in the Biodiversity section of the Monitoring Plan; they are: (1) fine-filter assessment of plant species (e.g. *Astragalus ripleyi*; and other special status plants), and (2) coarse-filter assessment of habitat (landtype association status, special status plant communities, and old growth). The ecology program is also responsible for making a determination of whether the biodiversity-related goals, desired conditions, S&Gs, and prescription allocations (per 36 CFR 219.12 (k)) were being met or are still appropriate. A brief assessment of each of these topics follows with additional detail provided in the appendix.

Information on most items associated with Ecology Program goals was not as robust in FY13 as in previous years due to the vacancy created from the retirement of the Forest Ecologist/Botanist in 2012. Due to this absence, information pertaining to sensitive and significant plant communities was reduced or not collected except as needed for project-level evaluations (e.g. Wolf Creek Village Land Exchange EIS). Because of the dramatic change occurring in our spruce-fir cover type due to the spruce beetle outbreak, questions have also arose regarding the goals, desired conditions, and S&Gs for several resource areas as intended in the existing Forest Plan direction. Due to these changes and other factors, some MA prescription allocations may warrant reevaluation (e.g. MA 5.42 Bighorn Sheep). Botanical and ecological plant community expertise is lacking and remains an important need to address at the Forest level due to the changes conditions on the landscape.

The field research work for *Astragalus ripleyi* was completed by FY 2011. No new research information concerning this species or any other R2 sensitive plant species has been collected since that time. Results indicate that the population demographics for this species are primarily influenced by seasonal moisture availability. Furthermore, research shows that livestock grazing does not reduce *Astragalus ripleyi* population viability, at least in the short term. The recommendation is to avoid season-long grazing and to incorporate rotation-grazing schemes so that this species is not grazed at the same time of year every year. Additional research on how *Astragalus ripleyi* responds to the use of prescribed fire would be useful because some fuels related projects are being planned in occupied habitat (e.g. Hot Creek RNA Restoration Project).

There were no specific site visits made to any Forest sensitive plant species sites in FY13 except as needed for project-level evaluations. Information is unavailable to clarify the degree to which botanical surveys were conducted for project-level support during FY13. No new special status plants were found during FY13 relative to the known survey efforts conducted.

Updated vegetation data based on the corporate database (FS VEG Spatial) are regularly being used for project-level analysis work. In 2013, natural disturbance events associated with spruce bark beetles continued to be a primary influence in the spruce-fir cover type (subalpine zone), with over 98,000 additional acres affected. Based on aerial flight data, well over 480,000 acres of S-F forest on the RGNF now exhibits high levels of spruce beetle activity and often results in tree mortality that meets or exceeds 90% of the overstory. This equates to approximately 85% of the S-F cover type on the RGNF. The on-going spruce beetle outbreak warrants frequent updates to our corporate data layers and complicates the accuracy of such data. Options are currently being explored to more accurately capture these changes with an updated cover type and vegetation structural stage mapping.

No CNHP plant communities of special interest areas were visited in FY13. Previous years' visits to sites including 1) *Salix monticola / Calamagrostis canadensis*; 2) *Salix geyeriana /Calamagrostis canadensis*; and 3) *Alnus incana / Cornus sericea* suggests that all CNHP plant communities of special interest are stable with no apparent threats identified. Other special status plants and/or significant plant communities may warrant additional research and monitoring due to the landscape changes occurring in the spruce-fir zone, and increased management in regards to those changes.

No old-growth inventories were completed in FY13. Based on previous years' efforts, however, old growth as defined by the current methodology (Mehl 1992) appears to remain uncommon on the RGNF. Additional questions arose about the adequacy of the current methodology used to assess and define old growth, particularly as associated with forested bristlecone pine communities. Requests for assistance to the RO ecology shop were made to help address these issues. Additional work on redefining old growth for all forest

cover types is recommended for the Forest.

During the summer of 2013, the West Fork Fire Complex added another ecological perspective to the landscape by burning approximately 110,000 acres of spruce-fir/aspen mix on the San Juan and Rio Grande National Forests. Initially starting on the west (San Juan NF) side of the Continental Divide, the perimeter of these three natural-ignition fires involved about 88,000 acres on the RGNF. Much of the burn occurred in spruce-fir cover types that had significant rates of tree mortality due to the spruce beetle. The West Fork Complex represents the first large-scale wildfire in the spruce-fir zone in the history of the RGNF. It offers an additional ecological research opportunity and highlights emerging information needs regarding disturbance regimes and bark beetles, future forests, and influences on various resource values.

**Wildlife Program.** The Wildlife Program is responsible for the terrestrial wildlife-related items in the "Biodiversity" section of the Monitoring Plan. This includes some aquatic or semi-aquatic species such as amphibians. These responsibilities also include a determination of whether the biodiversity-related goals, desired conditions, S&Gs, and prescription allocations (36 CFR 219.12 (k)) are being met or are still appropriate.

The Forest contains a variety of habitats that support approximately 196 species of birds, 69 species of mammals, and 15 species of amphibians/reptiles. Sustainability of this diverse resource is primarily related to the maintenance of a desired vegetative condition, or combination of conditions and fine-scale habitat components, that provide the habitat requirements for specific species or groups of species (Regional Objective 2 of the Forest Plan). For some species, however, viability is tied to geologic or physical features such as rock cliffs (e.g., peregrine falcon), talus (e.g., pika), waterfalls (e.g., black swift), caves or mines (e.g., Townsend's big-eared bat), or specific structural attributes such as snags (e.g., 63 species in Colorado) or high concentrations of downed wood (e.g., Canada lynx denning habitat). Evaluation of habitat conditions across the Forest are primarily limited to support funding associated with timber sales, range allotment management plan revisions, and other project activities that provide an opportunity for both coarse- and fine-scale assessments. Proposed management activities are evaluated for effects on wildlife and their habitats commensurate with the risk associated with the activity, with large-scale activities often accompanied by site-specific surveys and/or habitat evaluations for some species. For groups such as threatened, endangered, and sensitive species (TES), specific survey and management direction are applied as directed in Forest Service Manual 2670. Based on the outcome of the evaluation, conservation measures intended to provide for species viability and habitat sustainability are incorporated, as appropriate. Project-level monitoring is intended to complement the additional monitoring efforts accomplished for species and/or species groups of particular interest as directed in Table V-1 from Chapter 5 (Monitoring) of the Forest Plan.

The RGNF is primarily comprised of high-elevation spruce-fir (S-F) forest and aspen (53 and 20 percent of the plant community types, respectively) and thus has a high conservation responsibility for species associated with these forest types. In 2013, natural disturbance events associated with bark beetles continued to be the primary influence on habitat conditions in spruce-fir, especially in older stands. Based on aerial flight data, well over 480,000 acres of S-F forest on the RGNF now exhibits high levels of spruce beetle activity. This equates to approximately 85% of the S-F cover type on the RGNF. While bark beetle outbreaks of this scale are known to have occurred historically in the Southern Rockies, it is likely that this event will have detectable positive effects on habitat for some species (e.g., woodpeckers) and negative effects on others (e.g., canopy-dwelling birds). The American three-toed woodpecker was formally removed from the sensitive species list for Region 2 in June 2011 because of population increases in response to bark beetle outbreaks.

Timber salvage sales continue to be planned and/or implemented across the Forest in response to the bark beetle mortality. The overall acreage trend in salvage sales in response to the mortality has increased several-fold since 2005 and is expected to continue into the future, suggesting that implementation and effectiveness

monitoring of design criteria and S&Gs for the wildlife resource as associated with salvage may also be increasing in importance. The increase in salvage sale activities in the spruce-fir zone, in concert with the rapid change in tree canopy conditions, suggests that additional information may be warranted to assess habitat conditions for several species of conservation concern. For example, additional understory information may be important to assess where salvage treatments should be focused to protect and/or promote cover needs for snowshoe hare, which is the primary winter prey species for Canada lynx. As reported in 2011, a need has also been identified to determine how to assess understory regeneration on a landscape-scale, and if a correlation exists between summer and winter understory cover measurements in local spruce/fir types. There was no post-sale monitoring for wildlife purposes objectives, standards or guidelines reported for 2013. A recurring district response is that post-project monitoring is lacking due to time and funding limitations. Consistency with the Southern Rockies Lynx Amendment (SRLA) pre- and post-project design and monitoring criteria was expressed as a concern on one district.

A willow-browse evaluation technique was adopted in 2011 to help answer domestic livestock/native ungulate riparian habitat questions regarding desired conditions for riparian-associated wildlife species, particularly MIS birds. Continued sampling using this technique did not occur in FY13 due to other priority workloads. There are several recent environmental analyses that contain provisions for adaptive riparian habitat improvement. This suggests that increased monitoring of the assumptions associated with adaptive management principles will be important in future years and may require additional time and funding. A shift in NFVW funding allocations could be useful to help meet these needs. Currently, rangeland conditions and trends are primarily assessed during grazing permit administration and program review, and the ability of wildlife staff to assess if conditions for sensitive wildlife species are being met in important habitats, such as willow-riparian habitats, remains limited. Continued efforts to work on assessing Wildlife Standard 21 and to some degree, Wildlife Standard 20, is encouraged between range and wildlife staff. One district reports that additional resolution is needed on whether the current range utilization standard provides adequate protection for riparian habitat attributes for wildlife. Additional interdisciplinary discussion regarding Riparian Guideline 6 and 8 may be beneficial to the Forest goals and objectives for riparian habitat management.

In 2013, the Forest wildlife program continued to contribute substantial efforts towards informing potential conflicts between domestic sheep (DS) and native bighorn sheep (BHS) through extensive field inventory efforts, monitoring and an annual interagency ground count. An extensive time commitment was made using primarily NFWF funds, including seasonal and technician time. A NEPA decision on one DS allotment (Fisher/Ivy-Goose) reported in 2012 that was known to have DS/BHS separation conflicts resulted in that allotment being vacated. NEPA and field work began on one additional DS allotment (Snow Mesa/Table Mountain), which also has known BHS/DS conflicts. Boundary adjustments were made in the Annual Operating Instructions to prohibit DS grazing in the known overlap areas until the analysis and NEPA can be completed, which is expected in FY14. In 2013, the Forest continued collaborative efforts with CPW and partners such as the Rocky Mountain Bighorn Sheep Society to address known and potential separation issues on the Conejos Peak RD. As of 2013, seven BHS have been fitted with GPS collars in the San Juan Mountains to help inform DS allotment management in the South San Juan Mountains. This study is expected to continue for several years. The interagency Risk of Contact Tool (Bighorn Sheep Model) became available to the Forest in 2013 and was utilized in the risk analysis for the Fisher/Ivy-Goose decision. The ArcGIS based model fills a critical science-based need for assessing risk of contact between DS and BHS and is expected to be the primary tool for DS allotment analysis on the Forest in the future.

In 2013, the wildlife program conducted habitat improvement projects on 7,821 acres of National Forest System land. Examples of these projects include beaver reintroductions, road closures and barricades, toilet vent screen installations, prescribed burning and wildfire enhancements, and site restoration via seeding. The Forest Be Bear Aware program also purchased and placed bear resistant containers in several developed campgrounds for 2300 acres of achievement. Partnership contributions remained a critical component for

completing priority projects within the wildlife program, with approximately $65,000 of partnership funding and/or in-kind support reported. Habitat improvement projects were targeted at big game species, bear-human interactions, small forest owls, bighorn sheep, and riparian and lake habitats.

There were no changes to the Region 2 Regional Forester's sensitive species list in FY13. Inventories and/or population monitoring for TES species continued based on priority species needs and funding levels, with accomplishments tied to the Forest Monitoring and Inventory (NFIM) program as well as inventory needs at the project level. A considerable amount of inventory effort on two districts was directed towards Rocky Mountain bighorn sheep. In 2013, data input into the Natural Resource Inventory System (NRIS) wildlife database increased slightly, primarily on one ranger district. The 2013 efforts indicate that improvement still needs to occur in regards to utilizing the new NRIS database. This is a critical need for the Forest to address wildlife-related inventory and status questions in the future, particularly to be poised for future Forest Plan revisions.

There were no changes to the Forest lynx habitat map in FY13. Baseline conditions were updated numerically based on project influences. Analysis for proposed projects and management activities continued to utilize the Programmatic Consultation Agreement (i.e., lynx screens) and are reported to the USFWS in an annual report. The Forest also completed and reported monitoring information associated with the use of exemptions and exceptions for the Southern Rockies Lynx Amendment. Although a vast overstory canopy change is occurring due to spruce beetles, lynx continue to be observed on the Forest and are suspected to be using suitable habitat as expected. Anecdotal information regarding snowshoe hare and red squirrel suggests that these primary and secondary prey species continue to be present as expected. In 2013, a study was initiated by CPW to assess the impacts of bark beetle infestations on a suite of wildlife species inhabiting the subalpine zone in Colorado. The study is based on 1 kilometer grids and focuses on 3 mammalian and 12 avian species of conservation concern. All three mammals (snowshoe hare, red squirrel, American marten) are of key interest to the RGNF with two applicable to lynx conservation, while all 12 avian species occur on the Forest including three R2 sensitive species. There are 40 grid samples planned on the RGNF (39 S-F, 1 lodgepole) with 27 sample plots on the Divide RD, 8 on Conejos Peak, and 5 on Saguache (includes the 1 LP site).

One district reported survey efforts at one site for southwestern willow flycatcher in 2013. No detections were associated with that survey effort. To date, the Forest has surveyed approximately 81-85% of the potential habitat on the Forest at all elevation gradients while locating only one individual early-season flycatcher near the lower Forest boundary adjacent to BLM lands. The Forest continues to believe that that this species should be removed from our Unit Species List for evaluating habitat and species effects as associated with project activities. The 2012 habitat conservation plan (HCP) for the southwestern willow flycatcher in the San Luis Valley continued to be implemented in 2013. The HCP does not involve any Forest lands. In 2013, critical habitat was designated on five separate portions of the Rio Grande and Conejos River in the south portion of the San Luis Valley on BLM and federal refuge lands. None of the designated critical habitat occurs on the RGNF.

In 2013, the Forest continued to contribute funds to and cooperate with adjacent Forests, the BLM, USFWS, Western State College, and other partners in conducting population and habitat monitoring for the endangered Uncompahgre fritillary butterfly (UFB). The 2013 report is not yet available to include in this information. There were no Mexican spotted owl surveys conducted on Forest land in 2013, and surveys were not conducted on adjacent BLM lands. To date, the presence of this species remains unconfirmed on the Forest or in the San Luis Valley area.

The number of biological evaluations completed in FY 2013 was not available due to complications with the Wildlife, Fish, and Rare Plant (WFRP) database, which is being abolished and replaced with a new database in 2014. However, it is expected that the Forest completed approximately 70 biological

evaluations/assessments for TES species as usual. There was one formal consultation with a Biological Opinion received (Wolf Creek Village Land Exchange) and one request for concurrence from the USFWS for project determinations (Continental Divide Trail). In 2013, three species that occur or could have potential habitat present on the Forest (Gunnison sage-grouse, North American wolverine, New Mexico Meadow Jumping Mouse) were Proposed for federal listing under Endangered Species Act. A Proposed Critical Habitat designation accompanied one of these species (Gunnison sage-grouse). Due to this status change, two of these species (sage grouse and wolverine) were removed from our Forest list of candidate species. Surveys and/or monitoring for sensitive raptor species occurred on all ranger districts in 2013. These included species such as flammulated owls, northern goshawks, golden eagles, and prairie and peregrine falcons. For some focal species such as northern goshawks, however, inventory efforts were minimal. In total, the districts surveyed 6 of at least 21 known goshawk territories. Efforts on other key raptor species are reported in the Appendix.

In 2013, a monitoring emphasis on boreal toad continued on the Forest. On the Divide RD, all known and/or historic boreal toad sites were monitored, with occupancy documented at 3 of the 5 sites. A cooperative study with Colorado Parks and Wildlife resulted in the release of three adult toads from the Native Aquatic Species Hatchery in Alamosa to one site on the Divide RD to act as sentinels for chytrid fungus tests. These toads were fitted with radio collars and were being tracked by district personnel until the site was burned by the West Fork Fire Complex in June and all individuals perished. A small habitat improvement project to create additional breeding habitat was re-done at the Goose Lake site on the Divide RD. The CPW also provided monitoring and/or status reports for game species such as elk, mule deer, pronghorn, and bighorn sheep. Information was not reported for species such as bats in 2013 due to the reorganization of the Bats/Inactive Mines Project previously associated with the CPW and now coordinated by the Colorado Natural Heritage Program. After being detected in the eastern U.S. in the winter of 2007–08, white-nosed syndrome in bats remained a key issue in 2013. Forest Service Region 2 continued a region-wide closure of all caves and mines, with access by humans limited to a managed permit system and strict decontamination protocols. As of this writing, white-nosed syndrome has not yet been detected in Region 2 or Colorado and the Forest is actively participating in efforts to prevent and detect it.

Survey and monitoring efforts for MIS were again conducted in 2013 on a Forest-wide scale and at the project level in conjunction with some land use activities. In 2013, the Forest continued to provide extra funding to the Rocky Mountain Bird Observatory (RMBO) in regards to the State-wide avian monitoring efforts using the grid-based monitoring design established in 2008. The program continued to incorporate the entire Bird Conservation Region (BCR 16) so that inferences could be made at larger and more appropriate scales. From 2008-2010, the Forest was contained within one forest stratum. The stratum was split into three strata prior to the 2011 field season. The new stratification by elevation allows for adjusting sampling intensity to target MIS on the Forest. In 2013, 32 of 33 (97%) planned sites were monitored within three sampling strata sampled under the new Integrated Monitoring in Bird Conservation Regions (IMBCR) effort. The Forest did not monitor any of the 15 supplemental MIS transects that were established in 2004 under the original Monitoring Colorado Birds (MCB) program, which have been replaced by the grid transects. Based on the IMBCR report for the 2013 survey effort, 91 avian species were detected on the Forest including 6 priority species. With the additional sampling strata and the increase in sample grids, the monitoring effort now yields robust estimates (CV<50%) for 83 species. In 2013, the RMBO rolled out the "Avian Data Center" website which now provides easy access to the Forest data collected during the IMBCR Program, including the raw data relative to the Forest grid samples. Continued funding of the RMBO partnership is needed to continue this program and assess population trends on the Forest relative to other scales of inference.

Monitoring data for mammalian MIS (mule deer and elk) populations for 2013 was again furnished by the CPW. Based on CPW's 1991-2013 population model, two of the four deer DAUs on the Forest meets population objectives, one exceeds, and one remains slightly below objectives. Overall mule deer numbers on

the Forest are slightly below the mean population objective established by CPW. For several years previous to 2012, mule deer populations had remained consistently below objectives and the Forest conducted meetings with the CPW to determine if habitat might be a factor. The change in mule deer population objectives, established in 2010, now represent more realistic and achievable population objectives based on available habitat. Based on CPW's 1991-2013 population model for elk, all four elk DAUs vary from about 7-26% above population objective. Overall elk numbers on the Forest exceed mean population objectives by approximately 16 percent, which is a decrease over previous years but may warrant additional attention in some local game management units where potential habitat impacts and conflicts with domestic livestock use may be occurring. The Forest continues to actively assisting CPW is an elk-collaring program in GMU 80 to help assess the population model being used and the distribution and movement of elk.

Because the Forest is expected to undertake Forest Plan Revision in 2014, the Forest-wide MIS status assessment recommended from 2011-12 is no longer a high priority. However, a status assessment of special status species (i.e. federally listed and sensitive) is warranted given some of the above information. Some items that remain important to proceed with include:

1. Review and update of the Forest Avian Monitoring Protocol (2005) to incorporate the new IMBCR sampling design and analyze the current sampling effort for sufficiency and prepare for Forest Plan Revision;

2. Improve habitat monitoring and reporting for some avian MIS, especially riparian-willow species that may be influenced by program activities such as livestock grazing; and

3. Review big game population status to determine if additional efforts are desired to manage elk populations, assess potential travel management impacts, and to assess what efforts could be conducted to improve habitat conditions, if needed, to better maintain mule deer populations.

In 2013, all ranger districts were successful at providing Forest Plan monitoring information for the wildlife resource. Given responses received, continued efforts to assess and improve Forest Plan implementation and effectiveness monitoring are recommended, particularly in regards to potential range influences on riparian-willow habitat goals and bark beetle/forest management influences on Forest MIS birds and unique species such as Canada lynx.

**Fisheries Program.** The desired condition for biodiversity is to maintain viable populations of native and desired nonnative species. The following is a summary of the state of the fisheries resource on the RGNF.

A below average snow pack on the Forest resulted in low early season stream flows, although very good late summer rains improved stream flows as the year progressed. Good-to-excellent fishing was reported on most streams and reservoirs across the forest. Fish management activities conducted in 2013 include: sportfish and native fish inventories; sportfish/native fish stockings; habitat evaluations; genetic testing, stream culvert evaluations; and finalizing a range-wide Rio Grande cutthroat trout management plan and conservation agreement. Some of these activities were completed in partnership with BLM and Colorado Parks and Wildlife. There was also a large wild fire on the Divide Ranger District. The West Fork Complex Fire burned approximately 88,000 acres and likely impacted some of the high mountain streams within the burned area. The extent of the impact will be evaluated over the next several years as the system stabilizes and the area becomes safer to enter.

Sport fishing is a major activity on the Forest. The Forest offers a variety of fishing opportunities ranging from high mountain lakes and streams, to rivers and reservoirs. CPW maintains an active hatchery program supporting recreational fishing on the Forest and stocks a variety of native and desirable nonnative fish species. Stocked nonnative fish include rainbow trout, brown trout, brook trout, Snake River cutthroat

trout, kokanee salmon, and splake. Approximately 448,000 nonnative trout were stocked into Forest lakes and streams in 2013. Fish inventories on the forest were limited due to early low stream flows and warm water temperatures, which were then followed by intense thunderstorms resulting in higher than average late summer stream flows. Population monitoring was completed on two streams and three reservoirs by electrofishing and gill nets. Results from these inventories confirmed stable populations of desirable nonnative trout species in high value recreation waters.

Native fish management and restoration is a high priority on the Forest. Management activities completed in 2013 for native fish include population monitoring and evaluation, wilderness stockings, stream crossing inventories, stream habitat assessments, and genetic analysis. Approximately 73,500 fingerling Rio Grande cutthroat trout were stocked into 48 Forest lakes and streams in 2013. CPW collected fish tissue samples for genetic analysis from 5 Forest streams. Funding was secured in 2013 to replace two road culverts that restrict native fish movement and impacts their distribution. The culverts will be replaced in FY 2014. A Range-wide Rio Grande Cutthroat Trout Conservation Strategy and Conservation Agreement were finalized in 2013 with signatures from various land management agencies and partners in Colorado and New Mexico.

Habitat assessments were completed on three RGCT streams. Stream and riparian areas were in very good to excellent conditions on all three streams. Middle Fork Carnero Creek has responded very well to changes in livestock numbers and timing of grazing, as well as the temporary fencing of key stream segments and the reintroduction of beaver. Several beaver dams have been constructed on the stream which has created great overwintering habitat and low-flow pool habitat. The stream/riparian on Prong Creek and Miners Creek are in excellent condition with dense riparian willow/alder cover and numerous beaver ponds. In 2013, began an assessment of Roaring Fork on the Divide Ranger District to determine suitability for restoration to a RGCT core stream. Conducted initial field recon and participated in several meetings with CPW, Trout Unlimited, USFWS, and private property owners to discuss the project.

Rio Grande cutthroat trout are currently found in 57 streams and 62 lakes/reservoirs on the Forest, totaling approximately 350 stream miles and 1,900 surface acres, respectively. Rio Grande cutthroat trout populations are divided into three categories based upon genetic purity: core populations (greater than 99 percent pure), conservation populations (greater than 90 percent pure), and recreation populations (Rio Grande cutthroat trout coexisting with nonnative trout species). Of the 57 streams, 30 of the streams and 3 lakes are considered core or conservation populations and 27 streams and 59 lakes/reservoirs are considered recreation populations. The number of Rio Grande cutthroat trout recreation populations remains fairly constant on the Forest because they are maintained with CPW hatchery stockings.

The Forest-wide abundance and distribution of Rio Grande cutthroat trout appear to be stable, although the USFWS listed them in 2008 as a candidate species with a listing priority number 9. This determination was based primarily on impacts from nonnative trout and relatively short occupied stream lengths (not from impacts from Forest-related activities or projects). Self-sustaining nonnative trout populations are widespread throughout the perennial streams and habitat concerns appear to be site specific and not an overall threat to trout populations across the Forest. The USFWS initiated another status review in 2013 and their status determination should be released in late 2014.

Nine streams on the Forest support small, introduced Rio Grande sucker populations. Only one viable population of Rio Grande chub is known to exist on the Forest and it is a small population located in the Alamosa River between Silver Lakes and Terrace Reservoir. A supplemental stocking of approximately 30,000 3-inch Rio Grande suckers were released in Forest streams.

The information available for the fishery resources on the Forest suggests that when properly implemented,

the amended Forest Plan direction, desired conditions, and S&Gs, are effective in protecting biodiversity. Therefore, no changes to Forest Plan direction, desired conditions, or S&Gs are warranted at this time. However, fishery resources should continue to be evaluated to determine any need for change.

## *Fire and Fuels Management*

### Monitoring Requirements

Hazard potential from wildfire will be determined through ocular estimates, fuel transects, onsite inspections, and/or surveys. Areas determined to have highest relative hazard potential from wildfire and high relative resource value will be the focus areas for the fuels management program.

### State of the Resource

The fuels resource can best be represented as a component of Forest health. In FY 2013, areas within fire regime 1 (high frequency/low severity) and fire regime 3 (medium frequency/mixed severity) and in condition class 2 or 3 were identified, evaluated, and planned for treatment. Additional areas within fire regimes IV and V (low frequency/high severity) were identified when proximate to high values (mainly WUI). Due to an extremely busy wildfire season and subsequent recovery and rehab efforts, the Forest fuels program was unable to fully implement and meet the fuel treatment objectives established for the year. Approximately 103 acres of fuel treatment was accomplished, all of which was mechanical treatment in WUI. Mechanical treatments help address the lack of appropriate burn windows, alleviate concerns for burn projects near developments, and maintain the focus on key point #3 of the National Fire Plan. Approximately 1,057 additional acres received secondary fuels treatment, primarily through the timber sale program and forest health projects. Planning and implementation in these areas has addressed the silvicultural, forest health and fuel hazard mitigation objectives.

It should be noted that some fuel mitigation treatments were accomplished during management of the large wildfires and protection of the communities and other values at risk.

Also of note is that the lightning caused fires were evaluated by an interdisciplinary group to identify acres effected that were either moving away from or towards Desired Conditions (DC) outlined in the Forest LMP or other planning documents. The following table represents the results of this evaluation:

| | Wilderness Mgt. Areas 1.11, 1.12, 1.13 | Backcountry MA 3.3 | Dispersed & Developed Rec. MA 4.3 | Forest Products MA 5.13 | General Forest & Rangeland MA 5.11 | Deer & Elk Winter Range MA 5.41 |
|---|---|---|---|---|---|---|
| Ac. moving towards DC | 46,155 | 9,808 | 4,460 | 0 | 696 | 286 |
| Ac. moving away fr DC | 0 | 2,731 | 470 | 14,063 | 0 | 0 |

On-going fuels/forest health surveys and evaluations continue to provide land managers with valuable insight into the state of the resource as it relates to the potential for wildland fires to create unacceptable resource impacts or threaten other values. Though some areas have been identified as having the potential for unacceptable resource impacts, the Forest Plan provides adequate direction and needs no significant changes in fire and fuels management.

The February 13, 2009, document "Guidance for Implementation of Federal Wildland Fire Management Policy" and the April 9, 2009, WO memo "Updated Guidance for Implementation of Federal Wildland Fire

Management Policy" have been incorporated into the Forest's program. There are still some terminology changes that may need to be addressed regarding terms used in the Forest Plan.

## Facilities

### Monitoring Requirements

Monitoring will be reported based on the results of routine inspections of all facilities, including dams, facilities, drinking water, road bridges, trail bridges, and Forest development roads.

### State of the Resource

Monitoring, based on the results of routine inspections of all facilities indicates the RGNF is unable to meet general infrastructure maintenance due to lack of personnel and funding.

The RGNF completed a focused effort on dams. As a result, a number of dams were repaired to improve structural integrity. Additional work occurred on two structurally deficient bridges.

Current forest plan standards and guidelines are sufficient to meet the needs for general infrastructure.

## Health and Safety

### Monitoring Requirements

This monitoring objective is focused on meeting the intent of the National Health and Safety Codes and Occupational Safety and Health Administration guidelines.

### State of the Resource

The intent of the National Health and Safety Codes and Occupational Safety and Health Administration guidelines were met through monthly safety sessions and daily tailgate sessions. Forest plan standards and guidelines remain adequate.

## Heritage (Cultural) Resources

### Monitoring Requirements

Monitoring is based on the condition assessments of heritage resources discovered during project proposal evaluations or during or after the implementation of a project. In addition, monitoring of selected significant heritage resources, also known as Priority Heritage Assets (PHA), not associated with specific project proposals will be implemented and reported. Priority Heritage Asset condition assessments are required under the Heritage Program Managed to Standard (HPMS) Guidelines. Consultation efforts with recognized American Indian Tribes and Nations demonstrating concern for areas of cultural importance are also monitored and reported.

### State of the Resource

The monitoring of several completed projects where heritage resource sites were identified for protection indicates that protective measures were adequate. A few notable projects initiated by the Heritage program warrant mention

The River Springs Work center was monitored in 2013 to determine the effectiveness of the work to alleviate water leakage in the ceilings. There are new cracks and peels in the ranger house living room ceiling once

again; suggesting the earlier fix is not working. Heritage Staff will need to meet with the District and an expert to find a lasting fix.

In 2013, range conservationsis Luciano Sandoval alerted archaeologists to undocumented rock art within the Bighorn/Stateline proposed RX near the New Mexico border. The site was visited by a Jicarilla apache elder and deemed to be Apache. Subsequently, fuels specialists designed unit treatment methods that would protect the rock art panels during the RX and thin the fuels in such a way that will protect the rockart into the future.

The Natural Arch, an eligible Traditional Cultural Property suffered graffiti sometime in 2013. Heritage staff enlisted Landscape Architect Kelly Ortiz to assist in painting over the grafitti with her specially developed pallete thet matches the rock color. The Natural Arch site should be documented as TCP and an interprative panel with protective language should be installed. The site should be designated as an eligible TCP or as an SIA in Forest Plan.

Kansas University (KU) completed its third year on the research plot established on Cumbres Pass under a Challenge Cost Share Agreement supported by NFIM funding. Osha (*Ligusticum porteri)* is an ethnobotanically important plant for which roots are harvested and used as various forms of medicine. Previously, KU reported on differences in osha populations between forest and meadow sites, including measurements of root weights per acre and estimates of root market value (Kindscher et al. 2013). KU found that osha was more abundant in an open meadow compared to a forested site for both aboveground plant biomass and belowground root biomass (Kindscher et al. 2013). However, little is known about whether holes left by digging osha plants for roots can be repopulated, and whether this differs in forest or meadow habitats. This is an important first step to understand if we are to provide management recommendations for the sustainable harvest of osha plants. KU tagged and tracked individual plants and asked whether areas in which individual plants were dug can recover from harvesting pressure. One year after harvest, 79% of meadow plots divots and 66% of forested plot divots were recolonized where plants were dug one year earlier. Also, divots had a significant amount of osha cover, an average of 19% in meadow plots and 14% in forested plots. The results suggest that dug osha plants can have a fairly strong ability to repopulate dug areas. However, whether entire osha populations can be sustainable with harvesting over longer time frames is an important question for future research. Longer term monitoring of osha populations, and not just individual plants, under different harvesting intensities will help us to provide more comprehensive management recommendations in the future.

The monitoring of heritage resources not associated with a specific project and that have the potential to be vandalized will continue to be monitored in compliance with established S&Gs. A review of project-level heritage resource inventory reports for FY 2013 indicates that projects with the potential to impact heritage resources are being inventoried and protective measures are adequate.

In October of FY13, the repatriation and reburial was completed for four sets of culturally unidentifiable human remains from the RGNF that were previously housed at the Anasazi Heritage Museum in Dolores, Colorado. The SLV NAGPRA Inter-tribal and inter-agency working group allowed the Ute Mountain Ute to take possession of the remains and rebury two sets on RGNF land near the Natural Arch on the Divide RD using the Farm Bill authority. Because the NPS was not able to rebury the remaining two sets of CUIs, the USFWS agrees to rebury then on the Alamosa Refuge as close to the east side of the Valley as possible where it was thought those two sets of remains came from. The Tribes were very satisfied with the outcomes.

## *Minerals*

### Monitoring Requirements

Monitoring is based on a verification process to determine if the conditions in the Forest Plan are still valid, and whether oil and gas operations could be allowed on a proposed lease tract. Monitoring of oil and gas

will occur if such activities are developed-to date, no oil and gas development has occurred on the Forest, which is well below the potential level analyzed in the Forest Plan. Monitoring of locatable minerals will be reported based on the inspection and enforcement of operation plans to assure compliance with the Forest Plan.

### State of the Resource

The minerals monitoring program requires the Forest to validate leasing activities as well as S&Gs. There was no oil and gas leasing or development on the Forest in 2013. The Rio Grande National Forest approved one plan of operations for exploration and received numerous notices of intent for mining activities. In addition, reclamation was completed on two of the three units. Reclamation activities from mineral exploration conducted in previous years were monitored.

The continued monitoring of the reclamation associated with the two approved plans of operations from 2009 will be ongoing for multiple years following the cessation of operations. Surface disturbing activities associated with the one approved locatable minerals exploration plan from 2010 include road maintenance and construction, as well as, drill pad construction have been inspected and monitored periodically for operating plan conformance and compliance. Issues associated with the exploration activities have been minimal and the operation is in compliance with regulations and the Forest Plan.

In addition, the reclamation, re-vegetation, and monitoring of abandoned mine sites across the forest throughout the summer and fall of 2013. In the mineral materials program, the Forest Service administers a number of in-service, free-use, and commercial common variety mineral operations. All are in compliance with Forest Plan S&Gs.

## *Noxious Weeds*

### Monitoring Requirements

Monitoring of the location and extent of noxious weeds will be reported based on the evaluation of control methods on infested areas on the Forest and adjacent public lands.

### State of the Resource

Noxious weeds are a persistent concern on the Forest. Those species that have increased or have been inventoried more thoroughly are: toadflax, oxeye daisy, short whitetop (also known as hoary cress), Canada thistle, black henbane, Russian knapweed, downy brome (also known as cheatgrass), and musk thistle. The newly located Diffuse and Spotted Knapweeds presents a challenge to the program. In addition, areas within the West Fork Fire Complex are anticipated to experience large increases of invasive species infestations.

The Forest treated 542 acres of noxious weeds in 2013. Acres treated were funded by NFVW Range Veg. These acres were accomplished through a weed spraying contract, and a seasonal employee funded jointly by the RGNF and BLM. Some mechanical treatment was accomplished through volunteer group efforts. The Valley-wide focus for treatment of Invasive Weed Species will continue to be cheat grass, black henbane, Russian, spotted and diffuse knapweed, yellow toad flax and oxeye daisy.

A Supplemental Information Report (SIR) was completed in July 2012 for the 1996 Weed Treatment EA; this analysis was completed for the San Juan and Rio Grande National Forests. Pesticide Use Reports are prepared yearly as a requirement under the SIR.

The Forest and BLM jointly funded a Valley-wide weed coordinator to ensure a more efficient weed program. FS and BLM funding, equipment and personnel were combined; however due to funding and seasonal hiring

difficulties only one seasonal employee was hired in 2013. A portion of the invasives funding was utilized to contract weed spraying activities for the Divide and Conejos Peak RD's.

The Forest continued cooperation and coordination with the San Luis Valley Weed Committee. The committee has reached out to every interested State, County, City, and Federal agency in the Valley. The counties have worked to treat and inventory infestations and educate their residents. There are 35 organizations involved in the program and working to bring in more public support from local individuals. CDOT increased their emphasis on treating State Highway ROW's.

A RACC proposal for the Rio Grande and Conejos Counties will focus a large portion of the $65,000 it received on treatments on private lands adjacent to the National Forest and BLM. This money can also be used on Public lands when infestations threaten private properties. 2011 was used to prepare the contracts and prioritize treatment areas and with treatment to take place starting in 2012 weed treatment season.

Challenges for the invasive species program in 2013 were an increased treatment target, limited funding to hire seasonal employees and award a treatment contract, new reporting requirements through NRIS-TESP, and the absence of a permanent program lead.

## *Range*

### Monitoring Requirements

Monitoring of suitable rangelands for condition and trend will be reported based on the information obtained from the Rocky Mountain Region's Rangeland Analysis and Management Training Guide inventory process. The information is expected to yield baseline data to determine desired conditions of rangelands. Monitoring of range suitability will be reported based on determinations made during the development of EAs and allotment management plans for each allotment. Range utilization will be reported based on the results of routine field analysis.

### State of the Resource

A record low snowpack and extreme drought conditions at the beginning of the summer impacted allotments. 38% of the allotments had reduced numbers; with a large variation between allotments across the Forest. Reductions ranged from 5% to 50%; with the majority in the 20-25% range. 17% of the allotments had a delayed on-date due to lack of available water and/or forage production. Early season forage production on many allotments dictated rapid pasture rotations. In spite of near record precipitation in late July and August, available stock water and forage were limited in some allotments.

The West Fork Fire Complex on the Divide Ranger District directly impacted 5 allotments (1,048 permitted cow/calf pairs) and damaged approximately 8 miles of fence. Short term impacts include reduced grazing seasons and a lack of key infrastructure to control livestock movements. Currently, it is anticipated affected permittees will be able to utilize the burned allotments in 2014; with infrastructure replacement prioritization dependent upon available funding.

There is a continued emphasis to complete Range Rescission allotment NEPA, especially for those domestic sheep allotments with known or suspected overlap with bighorn sheep. In some instances, options for spatial or temporal separation are very limited, and may directly affect sheep permittees.

Current RBRB allocations are insufficient to resolve the backlog of aging range infrastructure. The consequences of ineffective fences and water developments include decreased options for effective management; and non-compliance with Forest Plan forage utilization standards and guidelines.

The spruce beetle epidemic has caused extensive tree mortality across most of the Forest. Damage caused by falling trees creates management issues and concerns for long-term improvement maintenance, and accessibility issues for livestock and managers.

The range program has determined there is a need for a lead in the data management portion of the program since we are not up to date on several of our required data bases. We have assigned one range conservationist to take the lead and work with the other offices to help update and maintain the NRIS, Infra, and FACT's data bases. This will decrease the individual's other range-related work, but it is important to remedy several of the deficiencies we have identified in the range program.

## *Recreation*

### Monitoring Requirements

**Developed Recreation.** Developed recreation sites are monitored to assess: (I) visitor expectations, trends, and customer satisfaction; and (2) quality and safe facilities. Visitor use and expectations will be monitored and reported based on customer surveys and/or customer comment cards. Developed recreation site monitoring will be based on facility condition surveys and hazard inspections. Wolf Creek Ski Area monitoring will be done through approved summer and winter operating plans. Special uses will be monitored through permit compliance and evaluations. Developed sites will be monitored for use compared with projected outputs in the Forest Plan. Developed sites will be evaluated relative to Forest Plan goals and objectives and S&Gs.

**Dispersed Recreation.** The Forest will monitor effects of its travel management plan; including all-terrain vehicle game retrieval and snowmobile use, during routine summer inspections, winter inspections, and fail big game hunter patrols. The Forest will monitor trail conditions and trail needs based on trial inventories and logs. Dispersed recreation will be evaluated relative to Forest Plan goals and objectives and S&Gs.

**Unroaded Areas.** Monitoring will be reported based on a representative assessment of two backcountry areas per year. This will include the assessment of motorized and nonmotorized recreation trail use, levels and type of use, areas of conflicts, identification of areas of concentrated use, and other resource impacts (biological and physical). Backcountry areas will be evaluated relative to Forest Plan goals and objectives and S&Gs.

**Wild and Scenic Rivers.** Monitoring will be reported based on the assessment of resource management activities that occur within one river corridor every 3 years. River corridors will be evaluated relative to Forest Plan goals and objectives and S&Gs every 3 years.

**Wilderness.** Monitoring will be reported based on the evaluation of wilderness management thresholds (specific indicators) and appropriate management actions to determine if wilderness S&Gs are being met. Wilderness areas will be evaluated relative to Forest Plan goals and objectives and S&Gs.

### State of the Resource

Minimal information was available during the construction of this report. No

recommendations or needs for change for the forest plan were recommended/identified during the course of the year.

**Travel Management**: The Forest continued to update the INFRA database to accurately reflect previous travel management decisions in preparation for updated publication of motor vehicle use maps. The ranger districts are continuing to review and update the maps for the public annually.

**All-terrain Vehicle Big Game Retrieval**: The Forest continued efforts to monitor ATV big game retrieval in FY 2013. Informal interviews were conducted with hunters to determine the extent to which they understood the afternoon big game retrieval policy. No resource impacts were observed as a result of legally retrieving game. Resource impacts were observed from the use of ATVs on the Forest, but it could not be specifically attributed to afternoon big game retrieval.

**Unroaded Areas**: The Governor of Colorado submitted a roadless area petition to the Secretary of Agriculture in 2007 which was accepted. An EIS and rule proposal was initiated and completed in 2012. The Forest continues to work to correct errors to the inventoried roadless area boundaries.

**Wilderness**: Wilderness monitoring took place on the South San Juan and the Weminuche Wilderness area. Air quality or atmospheric conditions were monitored through the high lake monitoring program. Campsite inventories occurred as well as encounters and trailhead registration monitoring. Overall, the Forest Plan recreation and wilderness objectives are being met.

Noxious weeds are addressed in the Chief's 2007 "Ten Year Wilderness Stewardship Challenge." The South San Juan and Weminuche wilderness areas have approved noxious weed treatment plans. These plans were reviewed to ensure continued compliance with the Chief's challenge.

## *Research and Information Needs*

### Monitoring Requirements

Monitoring will be reported based on the results of all resource-monitoring activities.

### State of the Resource

In March 2013, the Rio Grande National Forest hosted the Rocky Mountain Research Station (RMRS) Science Application & Integration Staff for assistance in answering some key science questions related to an ongoing spruce-beetle outbreak on the forest. RMRS and RGNF staff worked together to define some of the key issues and questions, which fell into four broad categories of concern: vegetation, fuels, watershed, and wildlife. RMRS enlisted the assistance of the National Forest Service Library to put together an annotated bibliography of the relevant literature that could provide additional background information to forest staff. At the same time, plans moved forward to coordinate a visit to the RGNF by several RMRS scientists and staff. The outbreak of the West Fork Complex fires in June, and then a federal government shutdown in October, delayed the first two attempts at a RMRS/RO assistance field trip. The group finally convened in November 2013, with representatives from the RO, RMRS, and all three districts of the RGNF.

The objective of the field trip was to engage RGNF staff, RMRS scientists, and key Regional Office staff in discussions involving the ongoing spruce beetle epidemic and its potential influences on vegetation, future forests, wildfire, wildlife (particularly Canada lynx, classified as a "threatened" species), resource outputs, and soil, water and other resource values. The local spruce beetle epidemic has influenced approximately 85% of the subalpine spruce-fir on the RNGF, and continues to spread at a rate of about 100,000 acres annually. The outcome is a rapidly changing forest condition with tree mortality often exceeding 90% in all spruce trees greater than about 5" dbh. The dialogue that resulted from this interaction forms the basis for the "Priority Information Needs" listed below.

- **Changed Forest Condition**: The spruce-fir outbreak and subsequent West Fork Complex Fires have dramatically altered the subalpine forest ecosystems on the Forest. RGNF staff seek to understand how best to assess this condition relative to several resource areas, including future stand development trajectories based on various management scenarios.

- **Ecosystem Resilience**: What constitutes resilience of a spruce-fir forest, and are there management actions that the forest should be considering to create more resilience on the landscape?

- **Assessing Influences on priority wildlife habitats and species including Canada lynx**: What are the effects of the spruce-beetle outbreak and fires on priority wildlife and lynx habitat, and how might this in turn affect management decisions and tradeoffs?

- **Watershed Response**: Given the beetle outbreak and fires, what are the impacts to water quality, quantity, and timing to residents of the San Luis Valley and other downstream communities?

In 2013, the Forest began and/or made continued progress on (1) Forest roads assessment process (TAP), (2) collection of faunal occurrence data for inclusion in the Forest Service corporate database, (3) updating and improving the infrastructure (INFRA) database, (4) range condition baseline data, and (5) a vegetation mapping update for forested ecosystems. Due to the vacancy associated with our Forest Ecologist/Botanist position, a monitoring information gap has developed regarding our floral and special plant community responsibilities, and our forest old growth survey program.

## *Research Natural Areas (RNAs)*

### Monitoring Requirements

Monitoring will be reported based on inspections of established research natural areas (RNAs) every 5 years.

### State of the Resource

Substantial effort on collection of pre-treatment data for the Hot Creek RNA occurred in 2013. A collaborative effort with the Rocky Mountain Research Station (RMRS) and Regional Office (R.O.) staff was established, including site visits to inform the management prescription for the RNA. Additional information was collected regarding forest inventory, fuels data, and wildlife baseline information such as flammulated owls, bats, and ponderosa pine associated songbirds. The Hot Creek Research Natural Area represents the first RNA in the Rocky Mountain Region to have a signed Management Plan and a proposed treatment underway, in this case restoring fire to the landscape. Additional field work for FY14 was established during the collaborative process between the RMRS, RO, and Forest staff. No additional RNAs were visited 2013.

## Soil Productivity

### Monitoring Requirements

The protection of soil productivity is monitored based on the requirements of 36 CFR 219.12(k)(2). The Forest uses several tools for soil monitoring, including the collection and analysis of core soil samples, erosion modeling, ocular estimates, transects, soil health assessments, investigations, and professional judgment. Soil health assessments have been completed to determine whether long-term soil productivity and soil health were maintained or improved. Management actions and effects are evaluated using existing Forest Plan S&Gs. Soil evaluation techniques were employed on ground-disturbing projects with potential for high soil-erosion, mass-movement hazards, or other soils concerns.

### State of the Resource

The Forest soil resource is monitored through project evaluations and soil health assessments. Soil health is the assessment of the current soil health condition and its ability to sustain the potential natural community of vegetation over the long term. The Forest uses the established Forest Plan S&Gs as a basis for evaluation. The three types of soil health ratings are as follows: (1) properly functioning, (2) at-risk, and (3) impaired. Properly functioning means that soil physical, biological, and chemical properties are functioning in a manner that maintains soil productivity. At-risk means that some soil feature has been changed to where there is a risk of losing productive capacity through erosion, nutrient losses, or loss of surface cover. Impaired means erosion has been occurring at accelerated rates or there are unmitigated impacts, such as compaction.

In FY 2013, monitoring for range was completed within the cattle grazing allotments of Snow Mesa, Bancos, Jim Creek, Alamosa, Embargo, and Klondyke allotments. Generally soil conditions in range land were acceptable with small areas at risk, usually associated with riparian corridors. Uplands generally are properly functioning with some trailing associated compaction.

A Forest Soil Disturbance Monitoring Protocol (FSDMP) workshop was done for the Timber staff and analysis were assessed for post-harvest soil conditions on the Marble Timber sale located on the Divide ranger District. Conditions were found to approach forest standard but did not exceed. This was primarily due to the careful layout of the sale unit and implementation of the sale and associated BMPs by the timber staff.

Soils concerns also arose with the West Fork Fire Complex fires. It was estimated that 21,192 acres were detrimentally effected by the heat intensity of the fire which leads to hydrophobic soils, which could lead to higher erosion rates and higher mass movement potential. Preliminary monitoring began in FY13 mostly for visual inspections, but continued monitoring of the fire area will be necessary throughout the next 5 to 7 years.

## Timber

### Monitoring Requirements

Restocking of final-harvest areas is required by 36 CFR 219.12(k). Monitoring consists of surveys conducted 1, 3, and 5 years after final harvest. First-year surveys are onsite inspections, while surveys after 3 and 5 years are statistically valid plot-inventory exams.

36 CFR 219.12(k) requires that all Forest lands be examined at least once every 10 years to determine if unsuitable lands have become suitable, or vice versa. Monitoring will also confirm that lands identified as suitable do, in fact, meet suitability criteria.

36 CFR 219.12(k)(5)(iv) requires the Forest to monitor levels of destructive insects and disease organisms following management activities. The monitoring of created openings is tied to various legal requirements, including 36 CFR 219.12(k)(5)(iii) and 36 CFR 219.27(d)(2).

## State of the Resource

Forested lands across the Forest are generally assumed to reflect composition, structure, and pattern with a natural range of variability as described in Appendix A of the Final Environmental Impact Statement for the 1996 Revised Land and Resource Management Plan.

The current insect epidemics affecting forests across the Rocky Mountain Region, including the Rio Grande National Forest, is not unusual. According to Romme *et al.* (2006)[1] it is not unprecedented to have roughly a 100-year period of low insect activity followed by an extensive insect outbreak. Furthermore, the initiation of bark beetle outbreaks is often associated with drought, which the Forest experienced in the early 2000s.

Some short-term human influences have affected, and are still affecting, the composition, structure, and pattern of forested communities, particularly lower-elevation forest cover types that typically experience higher rates of fire return interval disturbance, for example. Human influences can include either management action, such as timber harvest, or inaction that allows other disturbance factors to dominate across the landscape.

Onsite field monitoring during the spring-to-fall field season of 2013 occurred primarily within past timber sale boundaries, or other areas being planned for future timber sales, and are discussed in the following sections.

**Restocking:** Reforestation of areas harvested since the mid-1970s, when the Forest changed from mostly even-aged clearcutting to other regeneration harvest systems, such as two-aged shelterwood and uneven-aged management systems, have been consistently successful with natural regeneration establishment occurring from retained seed tree and surrounding seedwalls sources. Artificial planting after clearcutting has also been consistently successful. The naturally developing annual addition of germinants that commonly develop into seedlings and then saplings, etc., often referred to as advanced regeneration in more mature stands, continues to add to stocking levels in most conifer types regardless whether stands were naturally regenerated or planted. Most conifers begin to develop cones with viable seed by about 20 years of age though younger trees do not yield great quantities of seed. Whether trees establish in smaller openings is largely controlled by available growing space, competition factors (i.e., sunlight, moisture, and nutrients), and the silvics of the tree itself (i.e., tolerance or intolerance to shade). Where supplemental stocking has been needed, either to meet species diversity objectives or the 5-year reforestation timeframe requirement specified in NFMA, artificial planting is prescribed, planned and implemented. It should be noted that the 5-year timeframe is a legal requirement, not a biological capability of some tree species whose reforestation timeframes are longer and largely dependent on "good seed years."

Following the Million Fire in 2002 (11,000 acres), the Forest has not needed to implement artificial planting to meet desired conditions following harvests. However, the ongoing spruce beetle epidemic and the 2013 West Fork Fires (WFF -188,000 acres) have created a need to develop a Reforestation Plan to being to assess future reforestation needs. This plan is expected to be completed in late 2014 or early 2015. To help meet future needs, the Forest has increased efforts to collect cones from local trees which will provide more options in the future in light of large scale disturbances.

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[1] Romme, W.H., J. Clement, J. Hicke, D. Kulakowski, L. H. MacDonald, T. Schoennagel, and T. T. Veblen. 2006. Recent forest insect outbreaks and fire risk in Colorado forests: a brief synthesis of relevant research. Colorado Forest Restoration Institute, Fort Collins, CO.

Table 1 below lists projects/sales where stocking surveys were needed and/or conducted to assess reforestation success, whether reforestation was by natural regeneration or artificial planting, as well as the percent survival by survey-year type. In general, reforestation progress is proceeding as planned. Aspen regeneration following cutting mature aspen stems (coppice cut) have been very successful and aspen regeneration in the Million Fire and the recent WFF is helping to provide forest cover to these areas.

Where stocking anomalies occur that affect the planned trajectory to certification of reforestation establishment, appropriate measures (e.g. planting) would be undertaken to ensure stands are adequately stocked within the 5-year reforestation timeframe requirement. Example of anomalies include mortality caused by animal damage, insects, disease, other disturbance, or other changed conditions such as those resulting from a change in climate, or wildfire. An assessment of suitable and adequate stocking occurs throughout the life of managed stands.

A summary of 2013 stocking surveys, along with past surveys, is displayed in table 1, along with previous survey results and future planned surveys.

**Table 1. Stocking survey and survival percent table, 2013**

| Project/ Sale | Acres | Units | Plant or NR | Stocking Surveys & Survival % | | | Comments |
|---|---|---|---|---|---|---|---|
| | | | | 1st | 3rd | 5th | |
| Trujillo Meadows CG | 44 | all | P | 2013- 30% | | | To be planted in 2015 |
| Blowout II Timber Sale | 243 | all | TBD | 2014 | | | Surveys in 2014 |
| Ruston Aspen TS | 13 | | NR | | 2013 | | 3rd year survey in 2013; planned to certify following 5th yr. in 2015 |
| Willow Aspen TS | 4.5 | | NR | | 2013 | | 3rd year survey in 2013; planned to certify following 5th yr. in 2015 |
| Marble Salvage | 84 | all | TBD | 2013- | | | Survey in 2013 |
| Wolf Beetle Salvage | 289 | | NR/P | 2015 | | | Plant 267 acres in 2015 |
| Grouse Salvage | 810 | | NR | 2011 Rng= X= | 2013 Rng= X= | 2015 | Area is now within the Cumbres AA |
| Long Lost Cabin | 1,341 | all | NR | 2010 Rng=39–94% X= | 2012 | 2014 | |
| Little Kerber Salvage | 83 | All | NR | 2010 Rng=0–22% X= | 2012 | 2014 | Need for planting will be assessed in 2014. Ongoing mountain pine beetle infestation continues to impact stocking levels. |
| Million Fire Salvage [1] | 160 | 4 | 2008 fall plant | 2009 Rng=12–76% X=59% | 2011 Rng= X= | 2013 | |
| Twister II Salvage | 261 | | NR | 2009 Rng= X=95% | 2011 Rng= X= | 2011 | |
| November Salvage | 25 | 5 | NR | 2008 | 2010 Rng= X= | n/a | Certification of NR w/ site prep in 2010. |
| Million Fire Salvage | 748 | | NR | 2008 Rng= X= | 2010 Rng= X=100% | n/a | Certification of NR w/o site prep |
| Black Mountain Beetle Salvage | 672 | | NR | 2008 Rng= X= | 2010 Rng= X= | 2012 | Walkthrough survey conducted in 2008. General observations and no data gathered. Appeared adequately stocked. |
| Drill Pad Salvage | 77 | 1 | NR | 2008 Rng= X= | 2010 Rng= X= | 2012 | 48 acres planted in 2005. Replanted 25 acres in 2007. |

| Project/ Sale | Acres | Units | Plant or NR | Stocking Surveys & Survival % | | | Comments |
|---|---|---|---|---|---|---|---|
| | | | | 1st | 3rd | 5th | |
| Drill Pad Salvage | 48 | 1 | NR | 2008<br>Rng=<br>X= 35% | 2010<br>Rng=<br>X= | 2012 | Certified as adequately stocked. Aspen sprouting ongoing. |
| Shaw Lake Salvage | 241 | | NR | 2008<br>Rng=<br>X=80% | 2010<br>Rng=<br>X=80% | 2012 | 40 acres of walkthrough completed in 2010. |
| Finger Mesa Salvage | 498 | | NR | 2008<br>Rng=<br>X=74% | 2010<br>Rng=<br>X= | 2012 | |
| Buffalo Pass Salvage | 164 | | NR | 2008<br>Rng=<br>X= | 2010<br>Rng=<br>X= | 2012 | |
| Twister Salvage | 60 | 5 | NR | 2006<br>Rng=<br>X= | 2008<br>Rng=<br>X= | 2010<br>Rng=67–91%<br>X=79% | Certified as adequately stocked. |
| Drill Pad Salvage | 17 | 1 | NR | 2006<br>Rng=<br>X= | 2008<br>Rng=<br>X= | 2010<br>Rng=<br>X=26% | Aspen sprouting ongoing. Will assess in 2011. |
| Million Fire Salvage | 1,985 | | NR | 2005<br>Rng=<br>X= | 2007<br>Rng=<br>X= | 2009<br>Rng=<br>X=100% | Certification of NR w/o site prep |

[1] A combination of poor planting stock, heavy competition from grass and forbs, or harsh planting sites attribute to the poor survival rates in some of the units. An assessment will be made in the spring of 2011 on the steps needed to ensure an adequate stocking level.

*Source:* Annual Forest Health Protection Report submitted to the Gunnison Service Center, on file at the Headquarters of the Rio Grande National Forest, Monte Vista, Colo.

**Harvest Openings and Size of Openings:** Harvest openings (in non-salvage treatments) after the enactment of NFMA in 1976 have been designed to be less than the 40-acre limit set for the Rocky Mountain Region. Past openings exceeding the 40-acre limit generally trace back to clearcutting in the 1960s and early 1970s, and prior to enactment of NFMA. The vast majorities of these pre-NFMA harvested areas is adequately stocked with sapling or pole-sized trees and are no longer determined to be openings.

Past harvest units are periodically inspected during routine silvicultural monitoring surveys to assess stand development over time and to ensure they remain on planned trajectories to meet desired stand and landscape conditions outlined in site-specific silvicultural prescriptions and described in the Forest Plan. Any significant change potentially affecting stand development is brought to the attention of the attending silviculturist for potential treatment remediation.

**Timber Suitability:** The Forest amended the Forest Plan in 2000 with amendment #4 to address timber suitability. The suitability amendment took effect in 2003 after USFWS consultation with the updated Forest Plan biological assessment. Timber suitability has been, and will continue to be, evaluated during the landscape and project-level planning phase for all timber sales.

The West Fork Fire burned through several approved vegetation management projects. Most of the Big Moose Vegetation Management Project units (ROD signed in 2012) approved for treatment were burned in the WFF along with a small area of the Black Mesa Vegetation Management Project (ROD signed in March 2013). Supplement Information Reports based on the changed conditions are being prepared for both projects and expect to be competed and signed in October 2013. Several sales in the Big Moose project area were under contract and decisions need to be made on whether sales that had not burned completely could finish. The Shaw Lake Vegetation Management Project SIR was signed in September 2013. The Table Timber Sale was mostly completed prior to the wildfire and it was decided the sale could be completed.

In July 2013 the Cumbres Vegetation Management Project analysis level changed from and Environmental Assessment to and EIS due to the expected adverse effects on lynx habitat caused primarily from the secondary impacts of the spruce beetle epidemic on red squirrel populations, which are an important alternate prey species for lynx.

La Garita Hills Forest Restoration is at the initial stages of planning. It is expected to be an integrated vegetation management project with goals to increase landscape diversity and improve forest and watershed health. The decision for this project expected 2015.

**Insect and Disease Infestation:** Forestry personnel have been actively monitoring insect and disease activities across the Forest, with the assistance from entomologists and pathologists working out of the Gunnison Forest Health Protection Service Center in Gunnison, Colorado.

While there was some success in control activities in the mid to late 2000s, the overall condition of forest health is declining with epidemic levels of spruce beetles, likely related to the extended drought and mild winter temperatures. The large extent of the situation and management limitations has resulted primarily in a strategy of salvaging of dead and dying trees in areas where this activity is permitted in the Forest Plan. Additionally, many of the areas with insect and disease problems occur in the habitat and habitat linkages for the TES Canada lynx.

***Forest–wide Assessments:***

The Forest is working with the Gunnison Service Center in preparing a Forest-wide Insect and Disease Condition Assessment. This project was initiated in early spring of 2009 and was completed in December

2012. Information from this assessment will be used to provide a background for the current situation and to evaluate forest health conditions and to help focus needed management treatments.

The Forest also completed a Bark Beetle Rapid Assessment Project in April 2011 to identify priority treatment needs and to develop response options to the rapidly expanding spruce bark beetle epidemic. . Other bark beetle-affected cover types will be assessed as well. Information from the assessment has been used to focus NEPA planning efforts and to direct treatment to areas where human health and safety is at greatest risk from large numbers of standing dead trees that will eventually fall down; as well as where infrastructure developments, such as powerlines, campgrounds, picnic areas, hiking trails, and heavily traveled roads, etc., are also at great risk from large numbers of standing dead trees that will eventually fall down.

Spruce bark beetle populations and infested acres have continued to expand since 2002 across the Forest, as displayed in table 2.

**Table 2. Approximate spruce bark beetle infested and cumulative infested acres by year, 2002–2013**

| Year | Infested Acres | Cumulative Infested Acres |
|---|---|---|
| 2002 | 324 | 324 |
| 2003 | n/a | 324 |
| 2004 | 156 | 480 |
| 2005 | 54,344 | 54,824 |
| 2006 | 13,226 | 68,050 |
| 2007 | 47.836 | 115,886 |
| 2008 | 38,598 | 154,484 |
| 2009 | 79,970 | 234,454 |
| 2010 | 100,318 | 334,772 |
| 2011 | 80,000 | 275,000 |
| 2012 | 101,000 | 382,000 |
| 2013 | 98,000 | 480,000 |

*Source:* Annual aerial detection survey results, conducted by Forest Health Protection, on file at the Headquarters of the Rio Grande National Forest, Monte Vista, Colo.

### *Ranger District Surveys and Treatments:*

A summary of 2013 project/sale survey and treatment acre accomplishments is displayed in table 3. A detailed description of projects and activities is shown in table 4. Table 5 has a summary of the past treatments and monitoring activities by year for each District.

**Table-3. Summary of the Forest Heath Protection (FHP) funded and accomplished treatment and survey projects using $200,000 of Forest Health Protection funds, as well as integrated treatment accomplishments using other funding sources.**

| Project Number | FHP Funded Treatment Acres | FHP Funded & Accomplished Treatment Acres | Integrated Accomplished Treatment Acres | Total Accomplished Acres | Percent Accomplished |
|---|---|---|---|---|---|
| RIOG-01 | 1,750 | 1,750 | 1,151 | 2,901 | Treatment |
| RIOG 02 | 400 | 400 | 402 | 802 | Treatment |
| RIOG 03 | | | — | | Dropped |
| RIOG 04 | | 1,000 | 3,500 | 4,500 | Survey |
| RIOG 05 | 20,000 | 19,600 | — | 19,600 | Survey |
| **TOTAL - treatment** | **2,150** | **2,150** | **1,553** | **3,703** | **172.2 %** |

The forest accomplished 100% of its FHP funded treatment acre target. It accomplished an additional 72.2%, or 172.2% total, through other integrated projects funded using other funding codes, as shown in table-4 below. A discussion of project accomplishment follows.

**Table 4. Detailed project activity description for each project number for 2013.**

| Project Number | Project Description |
|---|---|
| RIOG 01 | Forest wide SBB Sanitation/Salvage Treatments<br><br>*Developed Silvicultural prescriptions, completed presale field work (layout, GPS, mark and cruise) and assemble contracts for the 2013 timber program of 992 acres and 1,909 acres of 2014 timber offer. Treatments were accomplished as part of the Spruce Park (219 acres), Boomerang (143 ac) Beetle Salvage Timber Sales awarded contracts on the Conejos Peak District and Last Chance (257 ac), Wapiti (208 ac), Wolf Creek Ski Area Decks (100 ac) and Lost Poplar (65 ac) Beetle Salvage Timber Sales awarded contracts on the Divide District. Additional layout, marking, and timber cruising also occurred in the Mater (450 acres), Belle (550 acres) and Simba (350 acres) Beetle Salvage Timber Sales on the Divide District and Jasper(347 ac), Reservoir (199 ac) and Chihuahua (13 ac) Beetle Salvage Timber Sales on the Conejos Peak District. Additional marking of ongoing timber sales of 111 acres was completed on the La Besouro (39 ac) and Rock Creek 72 acres) Beetle Salvage Timber Sales.* |
| RIOG 02 | Buffalo Pass MCH Installation and Post-Treatment Evaluation/Monitoring<br><br>*Due to weather the pre-commercial tinning/I&D reduction treatment part of this project was not completed until late spring 2013. Therefore further treatment (follow up burning, MCH caps) was dropped. This affected the timing for the follow up prescribed burning. Monitoring of thinning completed in the fall of 2012 (350 acres) to check effectiveness of treatment and assess level of activity fuels (802 acres) for the burn plan has been completed.* |
| RIOG 03 | Buffalo Pass WSBW, BB & DMT Treatment<br><br>*This project was not funded in 2013 and was therefore dropped. Funding will be requested for 2014.* |
| RIOG 04 | La Garita Hills I&D Survey<br><br>*Personnel from the Gunnison Service Center and Saguache Ranger District completed surveys on approximately 4500 acres putting survey points in 38 spruce stands across the analysis area (188,000 acres) to identify the leading edge of the infestation and to provide information on the age and intensity of the infestation for further analysis as part of the La Garita Hills NEPA..* |
| RIOG 05 | Forestwide Surveys and Evaluation Monitoring<br><br>*9,000 acres were surveyed for I&D populations on the Divide RD, and are as follows:*<br>• *Tiny Beaver/Demijohn Cattle Mountain (1,000 ac) – new and light SBB hits observed on Demmijohn, WSBW light, aspen defoliation severe but recovering, and armillaria root rot in isolated pockets.*<br>• *Seven Parks (1,000 ac) – new SBB hits light.*<br>• *Ford/Five Mile (500 ac) – less than 10% new SBB hits observed.*<br>• *Poage Lake/Cross Creek (1,500 ac) – less than 10% new SBB; no new evidence of WSBW.*<br>• *Tucker Ponds/camp Molino (1,000 ac) - 50% new SBB evidence in large trees; no new evidence of WSBW.*<br>• *Del Norte Peak (1,000 ac) -90% new SBB evidence in large trees east of old blowdown; no evidence of new WSBW.*<br>• *Burro/Blowout (2,000 ac) – Small pockets of new infestation in La besouro and Bennett TS areas.*<br>• *Rock Creek (1,000 ac) – less than 10% new infestations in harvested areas.*<br><br>*6,000 acres were surveyed for I&D populations on the Saguache RD including completing life* |

| Project Number | Project Description |
|---|---|
| | *stage surveys to estimate year of attack and identify the leading edge of the infestation on the Forest. Areas surveyed are as follows:* |
| | • *Lujan Pass/Spanish Divide (2,500 ac) – new (2013) and some older (2012-2010)SBB hits observed in Englemann spruce. Lodgepole pine is also being hit by spruce bark beetle in the area. .*<br>• *North Pass (1,000 ac) new (2013) and some older (2012)SBB hits observed in Englemann spruce. Lodgepole pine is also being hit by spruce bark beetle in the area.*<br>• *Razor Park/Sargents Mesa (2,500 ac) - new (2013) and some older (2012) SBB hits observed in Englemann spruce. Lodgepole pine are also being hit by spruce bark beetle in the area*<br>*4,600 acres were surveyed for I&D populations on the Conejos Peak RD and are as follows:* |
| | • *Red Mountain (2,500 ac)s, 0-5% new spruce beetle hits, Some WSBW*<br>• *Cornwall Mountain, (1,600 ac) , 20-80 % recent/new spruce beetle hits.*<br>• *Summitville, (500 ac)s ,No new spruce beetle activity noted:*<br>Although not formally surveyed due to fire suppression activities and other priorities, tent caterpillar was widely prevalent in aspen stands across the forest in June and July. Most aspen infested with tent caterpillar had leafed out by August.<br>Due to the West Fork Fire Complex on the Divide Ranger District, seven spruce beetle salvage sales that were under contract burned over. Three sales were a total loss whereas the other four had various degrees of burn severity.<br>While the spruce bark beetle infestation is currently the most prevalent at this time, other forest health issues such as western spruce budworm, dwarf mistletoe and Douglas-fir bark beetle are also a concern across the forest. |

*Source:* Annual Forest Health Protection Report submitted to the Gunnison Service Center, on file. At the Headquarters of the Rio Grande National Forest, Monte Vista, Colo.

**Table 5. Previous treatment and monitoring activities by year for the Forest.**

| Project/Sale | District | Contract Sold | Treatments [1] | Bark Beetle Monitoring | Contract Termination | Comments |
|---|---|---|---|---|---|---|
| Del Norte Peak Blowdown Salvage | Divide | 2011 | Expected 2011 | 2009–2010 | TBD | 75 acres affected, 30 acres planned treatment. |
| Bennett I Beetle Salvage | | 2009 | 2010 | 2009–2010 | March 2014 | |
| Rock Creek Trap Tree | | 2009 | | 2009–2010 | October 2011 | |
| Big Meadows Campground | | 2009 | 2009–2010 | 2009–2010 | May 2010 | |
| (Wolf Creek) Ski Area Blowdown | | 2008 | 2008–2009 | 2007–2010 | June 2010 | New 2400-4 contract to be awarded to remove recent blowdown. |
| Rock Creek Beetle Salvage | | 2008 | 2009–2010 | 2008–2010 | June 2008 | Beetle infestation began in Rock Creek drainage in 2005; NEPA decision 2007. |
| Cathedral Salvage | | 2007 | 2008 | 2007–2010 | January 2009 | |
| Blowout II Beetle Salvage | | 2006 | 2006–2008 | 2006–2010 | October 2008 | |
| Marble Beetle Salvage | | 2006 | 2006–2009 | 2006–2010 | June 2010 | |
| Shaw Lake Beetle Salvage | | 2005 | 2007–2008 | 2005–2010 | September 2010 | Planned 2011 monitoring surveys and reoffer defaulted sale. |
| Black Mountain Salvage | | 2005 | 2006–2007 | 2005–2010 | October 2007 | Included in Black Mesa analysis. |
| Finger Mesa Beetle | | 2004 | 2005–2008 | 2004–2010 | August | Included in Black Mesa analysis. |

| Project/Sale | District | Contract Sold | Treatments [1] | Bark Beetle Monitoring | Contract Termination | Comments |
|---|---|---|---|---|---|---|
| Salvage | | | | | 2008 | |
| Twister II Beetle Salvage | | 2004 | 2005–2008 | 2004–2010 | September 2008 | |
| Million Fire Salvage | | 2004 | 2004–2005 | 2004–2010 | December 2005 | Third year on 160 acres. |
| Fern Creek Beetle Salvage | | 2003 | 2003–2004 | 2003–2010 | April 2005 | Assessed with Big Moose project. |
| Drill Pad Fire Salvage | | 2003 | 2003–2004 | 2003–2010 | October 2004 | |
| West Fork Fire Salvage | | 2003 | 2003 | 2003–2010 | December 2003 | |
| Twister Beetle Salvage | | 2003 | 2003–2004 | 2003–2010 | March 2005 | No survey in 2011 planned. |
| El Gato Salvage | Conejos Peak | 2011 | 2011–2015 | 2007–2010 | 2015 | Bark beetle activity high in 2010 |
| Grouse III Salvage | | 2009 | 2009, 2010 | 2009–2010 | September 2012 | Bark beetle activity medium in 2010 (an increase). |
| Neff II Salvage | | 2009 | 2009, 2010 | 2009–2010 | July 2011 | Bark beetle activity high in 2010 (an increase). |
| Spruce Park Salvage | | 2008 | | 2008–2010 | August 2012 | Bark beetle activity high in 2010. |
| La Manga III Salvage | | 2008 | 2008–2009 | 2008–2010 | August 2009 | Bark beetle activity low in 2010. |
| Escarabajo Salvage | | 2007 | 2008, 2009, 2010 | 2007–2010 | August 2012 | Bark beetle activity high in 2010. |
| La Manga II Salvage | | 2007 | 2007–2008 | 2007–2010 | November 2008 | Bark beetle activity low in 2010. |
| Wolf Beetle Salvage | | 2006 | 2007, 2008, 2009 | 2006–2010 | August 2012 | Bark beetle activity high in 2010. |
| Grouse II Salvage | | 2006 | 2006 | 2006–2010 | October 2009 | Bark beetle activity medium in 2010 (an increase). |
| Cerro Rojo Salvage | | 2006 | 2006–2008 | 2006–2010 | December 2008 | Bark beetle activity medium in 2010. |
| Neff Mountain Beetle Salvage | | 2005 | 2005 | 2005–2010 | December 2005 | Bark beetle activity high in 2010 (an increase). |
| Spruce Hole Beetle Salvage | | 2004 | 2004–2005 | 2004–2010 | March 2006 | Bark beetle activity low in 2010. |
| La Manga Beetle Salvage | | 2004 | 2004–2005 | 2004–2010 | September 2005 | Bark beetle activity low in 2010. |
| November Salvage | | 2003 | 2003–2004 | 2003–2010 | August 2004 | Bark beetle activity low in 2010. |

| Project/Sale | District | Contract Sold | Treatments [1] | Bark Beetle Monitoring | Contract Termination | Comments |
|---|---|---|---|---|---|---|
| Grouse Creek Salvage | | 2002 | 2002–2005 | 2002–2010 | April 2006 | Bark beetle activity medium in 2010. |
| Brown's Creek B Salvage | Saguache | 2009 | 2009–2010 | 2009–2010 | March 2012 | |
| Moab Salvage | | 2009 | 2009–2010 | 2009–2010 | September 2011 | SBB in windthrown ES |
| McIntyre Gulch Salvage | | 2007 | 2008–2009 | 2007–2010 | September 2010 | MPB in PP & LP, WSBW in DF |
| Little Kerber Salvage | | 2006 | 2006–2009 | 2006–2010 | April 2010 | |
| Long Lost Cabin | | 2005 | 2005–2009 | 2005–2010 | May 2010 | |
| Antelope Trickle Stewardship | | 2005 | 2005–2009 | 2004–2010 | October 2009 | MPB in PP |
| Buffalo Pass Campground Salvage | | 2004 | 2004–2006 | 2004–2010 | March 2007 | |
| Park Creek Salvage | | 1998 | 1998–2004 | 1998–2008 | October 2004 | |

[1] Spruce Bark Beetle Salvage
*Source:* Annual Forest Health Protection Report submitted to the Gunnison Service Center, on file at the Headquarters of the Rio Grande National Forest, Monte Vista, Colo.

**Output Performance:** Timber resource outputs are measured in various ways including "acres treated" and "volume of material harvested" (in either cubic or board feet). Several key outputs are stated in the performance accomplishment report/summary. Performance accomplishment report/summary timber resource outputs for FY 2013 are displayed in table 6.

**Table 6. Performance accomplishment report/summary timber resource outputs for FY 2013**

| Item [1] | Measure | Planned | Accomplished | % Accomplishment |
|---|---|---|---|---|
| FOR-VEG-EST Planting | Acres | 0 | 0 | 0.0 % |
| FOR-VEG-EST Natural Regeneration Surveys & Certification | Acres | 841.5 | 841.5 | 100 % |
| FOR-VEG-IMP Precommercial Thinning, Weeding, Cleaning, Release | Acres | 523.6 | 392.6 | 74.9 % |
| Timber Volume Offer | CCF | 23,600 | 26,300 | 111.4 % |
| Timber Volume Sold | CCF | 26,600 | 26,300 | 111.4 % |

[1] FOR-VEG-EST = Forest Vegetation Establishment; FOR-VEG-IMP = Forest Vegetation Improvement.

**Recommendations:** No major changes need to be made to the Forest Plan. Suggested minor changes in the Forest Plan include:

Continuing Forestwide assessments of insect and disease infestation should occur to address the expansion of the current spruce bark beetle epidemic, as well as effects from climate change.

# Appendix: Rio Grande National Forest Monitoring and Evaluation Accomplishments

This appendix synopsizes the monitoring actions and results for FY 2013. The monitoring items listed below correspond with the components listed in table V-1 from the 1996 revised Forest Plan, as amended.

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
|---|---|---|---|---|
| **Air Quality** | | | | |
| Monitor and evaluate (M&E) visibility, lake chemistry, and terrestrial systems [36 CFR 219.27 (a)]. | (1) Photographic documentation of visibility; coordinate with NPS [P. Reinholtz]. | Great Sand Dunes National Park. | Visibility and particulate monitoring was completed. | No changes in the Forest Plan recommended. |
| M&E burn plan [36 CFR 219.27 (a)]. | (2) Chemistry of most sensitive lakes [K. Garcia, J. Fairchild, Lisa McClure, K. Murphy, P. Reinholtz]. | 3 lakes in the Weminuche Watershed Wilderness Area (WA); 2 in the South San Juan WA; 2 in the La Garita WA; and 1 in the Sangre de Cristo WA. | Sampling was completed at all 8 lakes in 2013. These results are available to define current good conditions and appropriate control technology when new major polluting sources are proposed that could impact these wilderness areas. | No changes in the Forest Plan recommended. |
| | Visual verification of smoke dispersal [L. Floyd, P. Reinholtz] and compliance with Colorado APCD permit [L. Floyd]. | Prescribed burn project locations on all 3 ranger districts. | Appropriate conditions existed on all burn projects, therefore no adverse smoke impacts occurred and smoke dispersal was adequate. No complaints were received from the public. | No changes in the Forest Plan recommended. |
| Assess air resources relative to (a) Forestwide goals, objectives, S&Gs; (b) MA prescription objectives, DCs, and S&Gs; (c) MA prescription allocations and monitoring methods [36 CFR 219.12 (k)]. | From monitoring results, conclude whether S&Gs and regulations are being followed, and if desired conditions are being met [P. Reinholtz]. | As a result of monitoring all of the above sites. | Forest management activities are following S&Gs; desired conditions are being achieved. | No changes in the Forest Plan recommended. |
| Monitor and evaluate (M&E) visibility, lake chemistry, and terrestrial systems [36 CFR 219.27 (a)]. | (1) Photographic documentation of visibility; coordinate with NPS [P. Reinholtz]. | Great Sand Dunes National Park. | Visibility and particulate monitoring was completed. | No changes in the Forest Plan recommended. |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
|---|---|---|---|---|
| **Aquatic Resources** | | | | |
| M&E watershed disturbances [36 CFR 219.27]. | Level I watershed assessment to measure total and connected watershed disturbance and compare to concern levels. Measure acres of disturbance in each $6^{th}/7^{th}$-level watershed. Use runoff curve numbers to equate all disturbances to an equivalent roaded area. Assess risk to watershed health from increased runoff [hydrologist: P. Reinholtz]. | Timber sales: Evaluation of active timber sales occurred in 2013. | Two large timber project analysis areas continued. No new watersheds of concern. | From past work it appears that concern levels for total watershed disturbance have been set at a conservative level to ensure adequate watershed health.<br>No changes in the Forest Plan recommended. |
| M&E stream and riparian health [36 CFR 219.27a]. | (1) Level III stream assessment on 1 stream per $6^{th}$-level watershed for each EA analysis area. By comparing to a like reference stream, assess water quality, channel condition, and riparian function to measure amount, if any, of impairment [hydrologists: P. Reinholtz, N. Tedela]. | As described in the next column. | Stream health on range allotments in Carnero, Snow Mesa, Alder, Bancos, Jim Creek, Bennet, Cat Creek, Alamosa, Hot Creek, Saw Log and Deer Creek allotments were evaluated and varied from robust to at-risk in more highly utilized areas. Stream health was determined by comparing channel conditions to a similar "reference stream" that represents expected conditions. | Stream health direction in the Plan is appropriate.<br>No changes in the Forest Plan recommended. |
| | (2) Level III assessment to measure recovery of damaged streams over time. Compare changes in channel shape and composition to see if recovery is occurring with prescribed mitigation [hydrologists: P. Reinholtz]. | Leopard Creek and Middle Creek above Love Lake. | Riparian conditions have improved, but bank stability issues remain. Alteration guidelines likely exceeded at times, slowing recovery. | No changes in the Forest Plan recommended.<br>Continue monitoring to evaluate livestock use on recovery and recommend management changes if necessary. |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| Assess aquatic resources [36 CFR 219.12 (k)]. | Visually determine if S&Gs have been implemented and are achieving the desired conditions [hydrologists: P. Reinholtz, N. Tedela]. | Timber, range, and watershed specialists routinely evaluate past and ongoing projects for compliance with Forest Plan direction. | Implementation monitoring has occcured and will continue to occur during timber sale administration. | No changes in the Forest Plan recommended. |
| **Biodiversity** | | | | |
| Monitor change in occurrence of selected native species (fine filter) [36 CFR 219.27 and .19 (6)]. | (a) Ripley milkvetch: use plots and transects [CSU Ph.D. candidate: J. Burt; ecologist). | Hick's Canyon and Terrace Reservoir. | The assessment work involving *Astragalus ripleyi* population viability was completed in FY11. No additional work involving native plant species was completed in FY13. | A void in expertise and information regarding native and special plant communities had developed due to the vacancy associated with our Forest Ecologist/Botanist position. The Forest should explore opportunities to fill this void. |
| | (b) Rio Grande cutthroat trout, chub, and sucker (native fish population monitoring); utilize electrofishing and gill nets. [Forest fish biologist: B. Wiley; FS/BLM seasonal employees, CDOW]. | Numerous streams and lakes across the Forest are monitored for population status, genetic purity, and whirling disease. | Rio Grande cutthroat trout populations monitored include Lake Fork Conejos, Osier Creek, Adams Fork Conejos and Wolf Creek. Nonnative trout fisheries monitored include House Canyon, Crooked Creek, Four Mile Creek, Long Canyon, Ivy Creek, Sheep Creek, Conejos River, Rio Grande River, Mill Creek, Road Canyon Reservoir, Rio Grande Reservoir, Blue Lake, and Lake Ann. All population data were collected following CDOW protocols and entered into CDOW database. CDOW "2010 Fisheries Inventories Rio Grande Basin" includes detailed analysis for these populations (unpublished).<br><br>A stream culvert that was a fish migration barrier was replaced on Middle Fork Carnero Creek. Another fish migration barrier was repaired on Wolf Creek. | No changes in the Forest Plan recommended. |
| | (c) Boreal toad: monitoring and survey [CDOW, FS]. | 5 existing breeding sites were monitored (Jumper Crk, Trout Crk/W.Trout Crk, Little Squaw Crk, Goose Lake, Fisher Crk). No new sites | *Known Sites*: West Trout Creek visited 1 time. 3 adults, 2 YOY, and tadpoles (<100) present. 5 visits were made to the Jumper Creek site, all negative. Site has tested chytrid positive and there are concerns that toads have vansihed. 3 sentinel toads from the NASRF released in early June. Site was burned in the West Fork Fire Complex and no toads survived. Goose Lake site visited 3 times. No adults noted, <100 tadpoles noted in 2 locations. 1 site dried up and the other may have supported metamorphs. | It is recommended that the Forest Plan place more of an emphasis on monitoring and recovery of the boreal toad. Should be an emphasis species for continued |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| | | documented . All 5 sites monitored by USFS.<br><br>1 site surveyed by CPW (Boots Pond). No toads present for several years. 4 toads from the Native Aquatic Species Restoration Facility (NASRF) in Alamosa were also released at this site by CPW. Release was unsuccessful.<br><br>No surveys conducted on CP or SAG RDs. Addressed in 1 project on CP. | The Little Squaw Creek site was only visited once in 2013 due to the Papoose Fire. No adults or tads noted. 2 visits to Fisher Creek Kettle Pond site yiedled 4 adults, and 4 tadpoles. Summary: 3 of 5 sites had successful reproduction, all but one site Bd positive. Concern for long-term viability of species. | monitoring in future years.<br><br>The fact that 3 of the 4 occupied toad sites on the Forest are known to be positive for chytrid fungus (*Batrachochytrium dendrobatidis*) or "Bd" remains a concern and needs further evaluation to determine if additional monitoring and/or protection efforts are needed.<br><br>Additional educational awareness is recommended concerning Bd and the 2001 Interagency Conservation Agreement for this species.<br><br>Forest should explore possible reintroduction of toads at approved locations. |
| | (d) Peregrine falcon: ocular surveys of nests [CDOW, FS]. | All known sites on the RGNF . 10 known eyries on Forest and 3 on others on public lands within or adjacent to Forest administrative boundaries. | Of 10 known exisitng sites, 8 were monitored by FS, effort includes all districts. No CPW monitoring reported. Of the sites monitored 2 were active, 3 with adults in vicinity but unknown outcome, and 3 with no birds present or unknown. The 2 known active eyries produced 3 young.<br><br>No new eyries were located in 2013. Several historic eyries appear to have chaged location, making monitoring for occupancy more of a challenge. | Recommend adjusting Forest Plan monitoring requirement to monitor a sample of eyries rather than all eyries annually.<br><br>Trend reported is that several historically active sites have recently become vacated and/or the eyrie has just moved so more time is needed to adequately search for the new eyries. Time consuming effort.<br><br>No R2 monitoring |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| | | | | protocol available. Need to adjust R6 protocol for Forest. |
| | (e) Southwest willow flycatcher (SWFL) [FS, USFWS, CDOW] | Mapped habitats on RGNF. Project-specific sites for range allotments were surveyed on a project-specific basis. | No monitoring or field surveys reported in FY12. No sightings on FS lands.<br>HCP for SLV pvt lands which involves BLM is in its second year of implementation. | No changes in the Forest Plan recommended.<br>Recommended reminder to District Rangers that we still have ESA survey requirements for this species. Recommend new effort to work with FWS to remove this species from the Unit Species list for the Forest. |
| | (f) Black swift (BLSW): surveys of nests [RMBO]. | All sites on the RGNF every 3 years. 26 known or potential sites Forest-wide. 10 known breeding sites on the Forest.<br>No new sites located in 2013. | Except for the local BLM Zapata site, no information on black swift surveys was available from the RMBO in 2013. In 2013, only 3 sites were surveyed Forest-wide. Summary: the CP surveyed 1 site but too late to determine occupancy, 2 others located that may have potential for future nest surveys. The Divide RD surveyed 2 of 7 sites, with a focus on the new Red Mtn Crk and West Trout Creek (Sugar Bowl) sites. Nesting was documented at both sites. The SAG RD did not attempt surveys at any of the 8 sites on the district. A local site on adjacent State/BLM lands was again used for banding of adults and young for a long-term assessment of productivity and survival. | Changes to monitoring frequency in Forest Plan recommended.<br>RMBO is no longer actively monitoring BLSW on the Forest and the criteria in Table V-1 are not being met. Recmmeded that the Forest monitor 1-2 sites per disrtrict per year, rotating sites. Recommend a long-term solution and funding to meet Forest Plan monitoring requirements. |
| | (g) Bats: surveys [CDOW] | CDOW and USFS bat surveys of known mine locations and sample sites on the Forest. | In 2013, USFS Region 2 continued the region-wide emergency closure regarding human entry into caves and mines to help prevent the spread of white-nose syndrome (WNS) into local bat populations. As of 2013, WNS has not been detected in Colorado. In FY 2013, local surveys for bat species were limited but the Forest did begin bat monitoring activities at select locations using remote acoustic recorders. These efforts yeielded several bat species including 1 sensitive (fringed myotis). The Forest did continue to implement a program and database to document all past mine | No changes in the Forest Plan recommended.<br>Additional NFIM funding recommended to supplement the bat inventory program and continue the effort to monitor for |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| | | | closures with bat gates. Interagency protocols to continue bat inventories and monitor for WNS are in place, with 1 site located on the RGNF. | potential WNS.<br><br>Need for the Forest to participate in 1-2 AML sites for acoustic monitroing for WNS purposes. |
| | (h) MIS birds [FS and RMBO] | The Forest is included in the IMBCR program implemented by RMBO. In 2013, 32 of 33 (97%) planned grid sites were monitored. Both the RO and Forest paid for additional samples to boost sample size. The 15 supplemental transects associated with the original MCB program on the RGNF were not monitored in 2013.<br><br>Project-specific inventories continued to be conducted on the RGNF in some cases. | The RMBO conducted the third year of surveys for the MCB program using the new grid design on the RGNF. In 2011, grids were sampled using 3 strata based on elevation to allow for better adjustment to detect MIS birds. None of the Forest supplemental transects were monitored.<br><br>Based on the 2013 MCB Report, 91 avian species were detected on the Forest. These include 6 priority species of conservation concern. With the addition of new sampling strata, population information is now being provided on all avian MIS for the Forest.<br><br>Project-specific inventory results are incorporated into project analyses and data are recorded in unpublished reports and internal databases, such as NRIS Wildlife. Although variable by location and project type, presence of MIS avian species were confirmed on proposed project sites on all ranger districts. | No changes in the Forest Plan recommended.<br><br>The grid-based MCB program was stratified and sampling was increased from 10 to 25 grid plots. Additional funding in 2013 purchsed 34 grid plots. This amount of sampling is recommended for the Forest to attain a sufficient sample size for our avian MIS and select species of conservation concern. |
| | (i) MIS bird habitat [FS]. | Available habitat on the Forest as estimated based on species habitat requirements, species habitat models, and/or landtype associations (LTAs); habitat availability is ground-truthed at the project level. | Habitats for most MIS and FS sensitive bird species have been modeled to establish an estimated baseline for avian MIS. These habitat models and other GIS data sets were updated in 2011 and are available for use during project-level surveys and analysis. However, they are not being fully utilized.<br><br>Site-specific habitat availability and occupancy was documented through general project inventories. Design criteria were included in project NEPA documents and included snag protection/signing.<br><br>Difficulties in defining and assessing the desired habitat condition for willow-riparian associated MIS remains a need, with one | A new modeling effort for avian habitat conditions in spruce-fir is recommended due to the extensive canopy mortality occurring in this forest cover type.<br><br>The Forestwide MIS status assessment scheduled for FY13 was not completed due to |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| | | | district reproting that ties b/t the current grazing utilization allowance and standards for riparian birds is unclear. The extensive canopy cover change occurring on the Forest within the spruce-fir zone warrants additional efforts in regards to avian species of concern. | other priority work. An assessment focused on MIS birds is no longer needed because of the transition to the new 2012 Planning Rule. However, an assessment of avian habitat conditions for several species of conservation concern is recommended because of the extensive habtat change within the S-F zone. |
| | (j) Deer and elk [CDOW]. | CPW conducts population and harvest surveys by game management units (GMUs). CPW models population estimates by data analysis units (DAUs). | Population estimates for mule deer in the Forest's 4 DAUs for 2013 are provided by CPW. Based on the 1991–2013 data, 2 deer DAUs meets population objectives, 1 exceeds, and 1 remains below objectives. Overall mule deer numbers on the Forest meet the mean population objectives established by the CPW.<br><br>Population estimates for elk in the Forest's 4 DAUs are provided by the CPW. Based on the 1991–2013 data, all elk DAUs are above population objective. Overall elk numbers on the Forest exceed mean population objectives by approximately 16%. This may warrant attention in some local game management units. | No changes in the Forest Plan recommended.<br><br>An elk study in DAU E-32 by CPW to test the existing population model continued through 2013. Continued collaborative work with CPW should continue to assess the model and provide input to possible elk population changes, as needed. |
| | (k) Deer and elk habitat [FS] | Habitat condition is evaluated on a site-specific basis by project. Overall trends are evaluated at the Forest level in concert with CPW. | General winter range assessments were limited in 2013.<br><br>Road density was not considered a major factor on habitat in the Forest Plan. Mule deer and elk habitat, based on road densities, generally are considered in the mid-range Forestwide, but could be variable on a site-specific basis by project. No ranger districts reported road densities as a primary concern for big game species. However, there is a lack of analysis regarding road density responses from deer and elk. Compliance with winter range S&Gs in regards to livestock grazing remains an issue in some areas, and off-road vehicle use and potential disturbance from ATVs and over-the-snow vehicles is increasing as an issue and | No changes in the Forest Plan recommended.<br><br>Recommend additional education to range personnel regarding winter range livestock S&Gs. Recommend discussion and resolution between recurring livestock and |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| | | | conflict with big game winter range S&Gs. | range issues in regards to Forest Plan S&Gs, goals and objectives.<br>Recommend evaluation of potential conflict b/t off-road veicles and winter range S&Gs, particularly the increasing use of snowmobiles and track vehicles. |
| Monitor the change in selected species habitat (coarse filter) [36 CFR 219.27]. | (a) Other EIS special-status plants. Photo interpretaion site visits, GIS, satellite imagery [ecologist: D. Erhard]. | Special-status plants are at various sites over the Forest. | There was no work regarding this crietria in F13 due to Forest personel vacancies. | No changes in the Forest Plan recommended in previous years. |
| | (b) Snag-dependent species [FS]. | Species and snag inventories are conducted at the project level.<br>Habitat is Forestwide by cover type. | There are at least 63 wildlife species in Colorado whose numbers are strongly associated with snag habitat. Surveys and observations of snag-dependent species were conducted in conjunction with some proposed projects, particularly timber sales and fire projects. All districts reported that the desired conditions for snag habitat appear to met, although one district notes concern about ponderosa pine snags due to firewood cutting. At a landscape perspective, snags continue to be extremely abundant in the spruce/fir zone due to bark beetle mortality.<br>Local data were also collected during the IMBCR program. Unusually high numbers of species such as American three-toed woodpeckers continued to be noted in association with bark beetles in spruce-fir forest types.<br>Habitat monitoring is scheduled every 5 years. | No changes in the Forest Plan recommended.<br>Recommend continued educational outreach to the timber program and public regarding snag retention requirements in timber sales and during firewood cutting operations. Ponderosa pine systems remain the primary snag component most heavily influenced by the firewood program.<br>Current Forest Plan requirements for CWD in the spruce-fir zone should be reevaluated given the mortality and amount of salvage being conducted, and the long-term |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| | | | | implications for snag recruitment for soils and wildlife. |
| | (c) Animal TES except those addressed above and those that can be covered under the riparian wetland objective [FS]. | Species inventories by project, in associaton with the Forest I&M program, or in cooperation with other agencies.<br><br>Assessment is Forestwide. | There was no change in the Forest sensitive species list in 2013, however, some species designations changed from sensitive because they became proposed for listing . Thus, the current Forest list includes 30 species (15 birds, 9 mammals, 3 fish, 2 ampbibians, 1 invertebrate).<br><br>Species inventories were conducted in conjunction with proposed projects and at the Forestwide scale. TEP surveys are ongoing (Uncomphagre fritillary butterfly, USFWS & partners; SW willow flycatcher, FS, by project). Sensitive species surveys are conducted by project, at the Forestwide scale, or in conjunction with contracted surveys. RMBO and BBS surveys document presence of avian species on the Forest.<br><br>*Results for FY 2013 include*:<br><br>*Lynx*–In 2013: CPW completed the test program to detect lynx use based on a passive monitoring design comparing remote cameras in 2011. No additional work was completed and data associated with radio collars is no longer being collected. FS personnel continue to document the species through opportunistic encounters and remote cameras. Lynx appear to be using primary habitat as expected despite the change in conditions related to the bark beetle.<br><br>*Uncompahgre Frittilary Butterfly*–Surveys in 2013: Surveys were conducted via the UFB Partnerhsip but the report was not available as of the time of this writing. Updates will be provided in 2014<br><br>*Mexican Spotted Owl*–MSO surveys were not conducted on the RGNF in 2013. All available information suggests the species could be removed from the unit species list for section 7 consultation purposes.<br><br>*Additional surveys for certain Region 2 sensitive species were reported by all 3 ranger districts in 2013; species and results include*:<br><br>*Boreal owl– No FS* Surveys or habitat improvement work reported . BOOW expected to be negatively impacted by two projects on the CP District.<br><br>*Goshawk*– All 3 ranger districts report surveys conducted for occupancy of known nest sites. 6 of 21 (29%) known nesting territories monitored on the Forest. Only 1 nest known to be active in | No changes in the Forest Plan recommended.<br><br>*For Uncomphagre fritillary butterfly*: High concern that SAG colony may be extirpated. Conduct analysis and possible section 7 consultation for the Halfmoon Pass/Machin Lake site on the Sauguach Ranger District when that particular allotment is up for renewal.<br><br>*For Mexican spotted owl*: Provide report to USFWS that recommends removing the species from the PLC Unit.<br><br>*For goshawk*: Recommend additional focus for surveys of known and potential nest sites, map territories to delineate core nesting areas and PFAs.<br><br>*For sensitive and other species*: The 2010 recommend to update the Forest Plan BE to include new sensitive species from the 2007, 2009 , and 2011 was completed in 2013.<br><br>Ensure adequate |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| | | | 2013 – mortality of check documented. All other nests inactive although in some cases adult NOGOs were noticed in the vicinity. No new nests documented.<br><br>*Bighorn Sheep*– Divide and CP RDs both put extensive focus towards survey and/or habitat assessment work for bighorn sheep. Conducted inter-agency counts and/or focused survey work on 2 ranger districts. Completed 1 NEPA decision that vacated a collection of DS allotments due to overlap with BHS. An interagencyGIS-based Risk of Contact Tool (BHS Model) became available and was utilzed for risk analysis. Boundary adjustments made in another DS allotment. Potential issues with domestic sheep remain in areas of the CP District and at least 2 areas on the Divide RD. GPS collars placed on 7 BHS in S29 and S29 on the Conejos Peak RD. The issue being worked on in concert with the range program. Immedaite resolution is needed in some cases due to the nature of the issue.<br><br>A need remains to explore restrictions using the pack goats in the Sangre de Cristo Wilderness on the SAG RD. Discussions with the Pike/San Isabel Forest need to continue.<br><br>*Other*–Additional survey/work efforts reported by the ranger districts include efforts for bald eagle (summer sighting Conejos Canyon; flammulated owl (CP district/Hot Creek RNA w/ extensive effort of 23 sampling points documented 17-18 territories); olive-sided flycatcher (detections on 1 district), white-tailed ptarmigan (detections /documented breeding on 1 district); American marten (detected on 1 district), Gunnison prairie dog (5 colonies monitored, 3 new colonies, 1 apparent expansion in area, 1 declining, participated in dusting w/ CPW); wolverine (2 cameras deployed, no detections); hoary bat and fringed myotis (acoustic detections in Hot Creek RNA). | NFIM funding and time to complete monitoring workload.<br><br>Assess species list to see if some species can be removed.<br><br>Ensure that new prairie dog colonies are mapped in GIS/ NRIS Wildlife. Participate as needed with flea dusting to protect colonies.<br><br>Ensure all ptarmigan locations are mapped in NRIS Wildlife.<br><br>As noted in the 2010 Conservation Assessmrnt and BE update for the Forest regarding bighorn sheep, the Forest Plan lacks management direction to eleviate this issue. Although the issue is being dealt with successfully in some cases, we now have a Risk of Contact Tool that estimates what is needed to attain adequate separartion b/t domestic sheep and BHS on a scientifc basis. Recommend a standard for effective separation be developed for future Forest Plan revision. |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| | | | | Continue work with the Pike/San Isabel NF to address pack goat use in the Sangre de Cristo Wilderness involving Unit S9. Address this issue in Forest Plan Revision. |
| Monitor changes in composition, structure, and pattern for each LTA [36 CFR 219.27]. | Photo interpretation, GIS, satellite imagery, and/or spatial analysis [ecologist/wildlife biologist]. | All LTAs over the entire Forest. | No monitoring was required this year. This item is evaluated once every 10 years and was accomplished in 2006. | Ecological chages occurring in the spruce-fir subalpine zone due to spruce beetle warrant a reevaluation of this monitoring item. |
| Validate the vegetation composition and structure of LTA 1 reference landscapes [36 CFR 219.27]. | Photo interpretaion, GIS, satellite imagery, and/or site visit [ecologist: D. Erhard]. | 14 reference areas within Englemann Spruce on Mountain Slopes LTA. Found throughout the upper elevations of the Forest. | Vegetation layers are being updated in FS Veg. The on-going spruce beetle epidemic continues to reduce the live Engelmann spruce component in the spruce/fir zone. Additional information regarding structue and composition in LTA 1 is needed. | The updated cover type mapping recommended in FY11 for the subalpine zone remains applicable to FY13. Forest Plan warrants updating. |
| Monitor changes in Colorado Natural Heritage Program Significant Plant Communities listed in EIS [36 CFR219.27]. | Photo interpretaion, site visits, GIS, and/or satellite imagery [ecologist: D. Erhard]. | Special status plant communities are at various sites over the entire Forest. | No sites were visited in FY13. | Key work not being completed due to vacancy of Ecologist/Botanist position. CNHP data is not being regularly updated. |
| Monitor the progress of old-growth (Mehl 1992) inventory and reconnaissance on the Forest. | Ocular, plots, GIS, and/or satellite imagery ecologist, wildlife biologist, forester]. | Forestwide. | No work completed in FY13. Discovered that there is no current OG definition for bristlecone pine ecosystems. | Recommend evaluation of Mehl old growth application to the Forest, new OG crietria most likely needed to adequately inventory this attribute. Need OG criteria for bristlecone pine systems. |
| Evaluate biodiversity and | Ocular, plots, transects | Forestwide. | Botanical and special plant community work not completed. Relative to the faunal biodiversity, | No changes in the Forest Plan |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| wildlife [36 CFR 219.12 (k)]. | [ecologist, wildlife biologist]. | | monitoring did not indicate that biodiversity items in 36 CFR 219.12 (k) were in need of change. However, structure and composition changes occurring in the spruce-fir zone warrant additional wildlife evaluations. | recommended. Item should be re-evaluated in Forest Plan revision. |
| **Fire and Fuels Management** | | | | |
| Assess fire/fuels [36 CFR 219.12 (k)]. | Ocular estimates using photo guides for estimating downed woody fuels. Fuel transects and surveys to determine actual loading and arrangement. Onsite inspections [AFFMO,Fuels Spec./Tech, and silviculturist]. | Ponderosa pine and mixed-conifer cover types (fire regimes 1 & 3, condition class 2 & 3), Forestwide.<br>Wildland/urban interface/interm ix (WUI) areas. | Analysis and evaluation of fuel profiles (loading, arrangement, continuity) and Fire Regime/Condition Class were conducted in various mid- to low-elevation areas (mixed conifer, ponderosa pine, Douglas-fir) of the Cochetopa Hills, in the Alamosa, Upper Rio Grande, Conejos River drainages, and in the Piedrosa area. Treatment methods (Rx fire, mechanical) have been developed and appropriate project plans (i.e., burn plans, thinning/mastication plans) have been implemented. Monitoring of wildland-urban interface and non-wildland-urban interface projects indicated treatment objectives were met. Wildland-urban interface project planning continues in the Conejos River, Baca/Crestone and South Fork/Creede areas. | Continue focus on wildland-urban interface areas and fire regimes 1 & 3 in condition classes 2 & 3.<br>No changes in the Forest Plan recommended. |
| **General Infrastructure** | | | | |
| Assess facilities for compliance with state and Federal requirements and FS Handbook/Manual direction. | (1) Inspect dams, facilities, drinking water, road and trail bridges, and FDRs for safety and maintenance [Forest engineer]. | 50% of Forest road bridges; high-hazard dams every 3 years; medium-low hazard dams every 5 years; 25% of all trail bridges; 25% all drinking-water systems as required by the Safe Drinking Water Act; 20% of all facilities and 20% of all level 3, 4, and 5 roads as required by programs/per FSH and FSM. | Two major bridges were repaired to improve public health and safety.<br>Major dam reconstruction occurred on 3 dams including Love Lake, Beaver, and Continental.<br>Level 3, 4, and 5 road inspections were determined by random statistical sample in FY 2013. All required inspections were completed. | No changes needed in Forest Plan monitoring requirements. Inspections and testing will continue as outlined. |
| | (2) On-site inspections to monitor compliance with Travel Management Plan [law enforcement officers (LEOs), district level II officers, and other | Various locations around the Forest as patrolled by Forest LEOs and other Forest Personnel. | Inspections were conducted through hunter patrols and day-to-day contacts by LEOs and other FS personnel. Numerous issues were raised and some citations issued. Forest continues to seek compliance with the current motor vehicle use map. | No changes in the Forest Plan recommended. |

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| | personnel as assigned]. | | | |
| | (3) Assess planned road closures through onsite inspections [engineering and timber]. | Various locations across the Forest. | Onsite inspections were made by Forest personnel of proposed closures of illegal routes. In the fall of 2006 (FY 2006), the Forest conducted an onsite investigation to evaluate closure activities of illegal routes. A combination of treatments that effectively closed illegal routes were implemented. The treatments included subsoiling, installing carsonite or cedar closure posts and signs, brushing in illegal routes, and physical rock barriers. The efforts continued in FY 2013. The ultimate success of such treatments is determined over time. Additional evaluation will be made in FY 2014 to determine how well hunters and other recreationists complied with the closures. | No changes in the Forest Plan recommended. |
| M&E infrastructure [36 CFR 219.12 (k)]. | Review and monitor infrastructure-related inspections and reports for compliance with Forest Plan guidelines and objectives [Forest engineer]. | As outlined in the Infrastructure section of the AMOP. | Two major bridges were repaired to improve public health and safety.<br>Major dam reconstruction occurred on 3 dams including Love Lake, Beaver, and Continental.<br>Level 3, 4, and 5 road inspections were determined by random statistical sample in FY 2013. All required inspections were completed. | No changes in the Forest Plan recommended. |
| **Health and Safety** | | | | |
| M&E Forest activities with respect to National Health and Safety Codes and Occupational Safety and Health Administration guidelines. | Review and monitor guidelines on public safety and health [Forest engineer/safety officer]. | Forest. | All contract "Notice To Proceed" meetings include a safety review. Road crew tailgate meetings are held weekly and include project work zone safety requirements discussion. Road crew supervisor ensures compliance. Monthly safety meetings are held to discuss accidents and near misses.<br>Facilities safety inspections were completed in FY 2013. | No changes in the Forest Plan recommended. |
| **Heritage (Cultural) Resources** | | | | |
| M&E projects to assure heritage resources have been appropriately protected. | Onsite inspection of selected significant heritage resources (Priority heritage assets).<br>Onsite inspection of National Register-eligible heritage resources identified for protection during ground-disturbing project-related activities [heritage | Identified significant heritage resources including prehistoric open lithic and camp sites, rock art, and historic sites.<br>Heritage resources located on selected range | **Heritage Resources Monitored in FY13:**<br>Bighorn Rockart site (5CN1565) within Bighorn/Stateline RX had unit treatment design to protect rock art panels.<br>The Natural Arch, and eligible TCP suffered graffiti and was painted over with the help of Kelly Ortiz, LA.<br>River Springs WC (5CN756): Despite fixes, there is re-occuring water damage on the living room ceiling (on-going issue)<br>Duncan Townsite (5SH3484) is in good condition. Though the cabin itself needs | Natural Arch site should be documented as TCP and an interp panel with protective language should be installed. Should designate as an eligible TCP or as an SIA in Forest Plan.<br>River Springs (5CN756) needs |

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| | specialist, A. Krall]. | allotments, range improvement projects, vegetation treatment projects, AML, mining proposals,and prescribed fire projects. | attention from recreation.<br><br>Creede Clay Mine (5ML329): In good condition.<br><br>North Tracy Canyon Site (5SH193): Noted leaking pipe with water running on to site and notified range personnel.<br><br>Dog Mtn Site (5RN330): In good condition<br><br>Off Cow Camp (5RN315) and Fitton GS: The site is in excellent condition and ready for rental. The extra rodent protection installed by Historicorps seems to be keeping the pack rats out. The barn is in exellent shape as well.<br><br>Fitton GS (314) The cabin is in great shape. The battons are weathering nicely to return the exterior to a more historic look.<br><br>Black Mtn Folsom (5HN55): Requires second look at travel management in the area.<br><br>English Valley Folsom Site (5RN1028): Good condition.<br><br>Bunker Site (5SH614): In good condition<br><br>Upper Beaver CCC Toilet (5RN518): Good condition and being used. Needs work getting cupala fan more functional to mitigate odor.<br><br>FY13 Kansas University Osha Study ~ 3rd year gathering data on the sustainable harvest of osha (*Ligusticum porteri*), and culturally important plant to Native peoples and Hispanic populations. | an expert to inspect the root of the water damage problem.<br><br>Duncan Townsite (5SH3484) will require ARPA signage before the cabin is rented. Door is difficult to open and outhouse has drainage issues.<br><br>KU Osha Study could inform future forest plan with regard to alternative Forest products |
| M&E consultations with American Indians. | Assess proposed management activities and programs to determine if American Indian consultation was accomplished [heritage specialist: A. Krall]. | Review proposed project EAs where there is a potential for sites or geographic features that are, or have the potential to be, considered culturally sensitive to Native American Indians. | In FY 2013 Tribal consultation was initiated on a project by project basis and via the RGNF Quarterly Scoping Document (SOPA).<br><br>Four sets of Native American remains successfully reburied October 2, 2012.<br><br>Emailed affiliated Tribes during West Fork Complex and received information that Rio Grande Pyramid is sacred to Jicarilla Apaches. | Need to reference Inter-agency and Inter-tribal NAGPRA MOU in Forest Plan.<br><br>Need to reference Rio Grande Pyramid as a locale of interest in Forest Plan that should not have slurry dropped on it.<br><br>Should entertain notion of 'reburial areas' in Forest Plan. |
| M&E heritage resource program [36 CFR 219.12 (k)]. | Review of all heritage resource reports done in the current monitoring year [heritage | Review of all heritage resource reports done in | Reports for proposed projects sent to the Colorado State Historic Preservation Officer for concurrence were reviewed. | No changes in the Forest Plan recommended. Proposed projects comply |

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| | specialist: A. Krall]. | FY 2013. | | with 36 CFR 219.2 (k). |
| **Minerals** | | | | |
| M&E oil & gas activities so effects do not exceed predicted by 10%. | Compare annual and cumulative oil and gas activity [minerals specialist]. | Forest summary. | There was no oil and gas development on the Forest in 2013. The Forest Plan reasonable and foreseeable development scenario and its predicted effects are still valid as described in the Forest Plan. | No changes in the Forest Plan recommended. |
| Verify if areas are compatible with Forest Plan stipulations. Assess if occupancy could be allowed on the lease tract [36 CFR228.1.2 (e) 1, 2, 3]. | Verification form [minerals specialist]. | Each lease. | There was no oil and gas development on the Forest in 2013. The Forest Plan reasonable and foreseeable development scenario and its predicted effects are still valid as described in the Forest Plan. | No changes in the Forest Plan recommended. No additional analysis is needed. |
| M&E minerals program [36 CFR 219.12 (k)]. | Onsite inspections of mineral activities; review reports [minerals specialist]. | Forest summary. | Twenty three proposals were processed for locatable mineral exploration. All comply with Forest Plan Standards and Guidelines. The Forest Plan is still valid. | No changes in the Forest Plan recommended. No additional analysis is needed. |
| **Noxious Weeds** | | | | |
| M&E noxious weeds [36 CFR 219.12 (k)]. | Monitoring of noxious weeds (where and to what extent they are present) will be reported based on the evaluation of control methods on infested areas on the Forest/BLM [Valley-wide weed coordinator]. | 542 acreswere treated on the Forest in 2013 | Noxious weed inventories were conducted in 2013, monitoring of past treatments identified several areas of concern. Specific information on species found and areas treated/monitored can be found in the FACTS data base and on the Forest Invasives species treatment, inventory, and monitoring layer. The 542 acres treated on the RGNF was accomplished by the use of chemicals and hand pulling with volunteers. | No changes in the Forest Plan recommended. |
| Assess the extent of infestation and control methods of noxious weeds. | Monitor noxious weed infestations and control methods by using on-the-ground surveys. | New locations of invasive species continue to be inventoried. Several infestations of musk thistle were successfully controlled as was the Diffuse knapweed on the Hanson Mill | The Forest & BLM continued to jointly fund a Valley-wide weed coordinator to ensure a more coordinated weed program within the Valley. Due to lack of funding the Force Account Crew was made up of only one technician. | No changes in the Forest Plan recommended. |

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| | | road. | | |
| **Range** | | | | |
| Access the extent of infestation and controld methods of noxious weeds | Monitor of noxious weeds (where and to what extent they are present) will e reported based on evaluation of control methods infested areas on the Forest/BLM valley-wide weed coordinator.<br><br>Monitor noxious weeds infestation and control methods by using on the ground surveys. | Treatment on all 3 Districts occurred in FY13 Full aggressive treatment continues on BLM Lands throughout the Public Lands Center<br><br>See Above | Noxious weed inventories were conducted on the Forest in 2013. Specific information on species found and areas treated can be found in the FACTS data base. 542 acres of infestation were treated by chemical, biological, and hand pulling on the Forest.<br><br>The Forest & BLM continue to jointly fund a valley-wide weed program | No changes in the Forest Plan recommended. |
| M&E rangeland and seral stage to ensure the desired conditions | (1) Various methods and techniques will be derived from RAMTAG. | Snow Mesa, Saguache Park, Rough Creek, Cumbres | Continue monitori of existing utilization cages and long-term transects. | No changes in the Forest Plan recommended. |
| | (2) Monitor desired condition for trend. | See Above. | See Above | No changes in the Forest Plan recommended. |
| Assess rangeland suitability. | (1)Evaluate suitability of Forest Plan rangelands. Intensive review at site-specific areas while applying criteria for capability and ID Team determination of suitability | A rangeland suitability determination by specific allotments was undertaken for NEPA as per Region 2 RAMTAG. | Rangeland suitability assessments were initiated in 2005 and continued to 2013 | No changes in the Forest Plan recommended. |
| | (2)Evaluate suitability of rangelands at the AMP level. | See above. | See above. | No changes in the Forest Plan recommended. |
| Monitor utilization of Rangelands | Various methods will be used including: P/U cages, height-weight, stubble height ocular estimates | Each Ranger District will conduct analysis based on Forest Priority Recission Act | Monitoring for vegetation utiliztion wa conducted on all 3 Ranger Districts for all allotments utilized during the grazing season. Various methods were used, including P/U cages, height-weight, stubble height measurements, and ocular estimates. Allotments monitored by districts were the same as planned locations in | No changes in the Forest Plan recommended. |

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| | | Allotments | previous column. | |
| **Recreation – *Developed*** | | | | |
| Assess developed sites for (a) visitor expectations, trends, and customer satisfaction; and (b) quality and safe facilities. | (1) Customer survey; Forestwide market and customer survey [Forest and ranger district recreational personnel]. | Forestwide. | A Forestwide customer survey was completed in FY 2005 and again in FY 2010. The next survey will tentatively be FY 2015.<br>Information from the FY 2005 customer survey on the RGNF is on the website at http://www.fs.fed.us/recreation/recuse/recuse.shtml. | No changes in the Forest Plan recommended. |
| | (2) Annual developed-site hazard tree inspections. Inspection of Forest's campgrounds and picnic areas for removal of hazard trees [I&D specialist and ranger district recreation/timber personnel]. | Campgrounds and picnic areas. | Annual hazard tree inspections of campgrounds and picnic areas were completed as part of the sites' preseason maintenance inspections. In FY 2013 hazard tree identification and removal was a continual process throughout the season. There is a significant increase in tree mortality due to the bark beetle. In addition, water sampling for safe drinking water is completed on a monthly basis. | No changes in the Forest Plan recommended. |
| | (3) Monitor ski area summer and winter activities. Monitor Wolf Creek Ski Area for compliance with approved summer/winter operating plans [S. Brigham]. | Wolf Creek Ski Area. | FY 2013 winter and summer operating plans were developed and approved and monitoring inspections made. Inspection reports are on file at the Divide Ranger District office. Winter inspections included lift operations, ski patrol operations and procedures, avalanche procedures and operations, ski school operations, annual billings and payments and the monitoring of the cross country ski trail and use. | Continue to work with the ski area in conjunction with planned projects.<br>No other changes in the Forest Plan recommended. |
| | (4) Monitor special use permits. Inspections documented and/or inspection reports MAR 62.5 [Forest and district recreation personnel]. | Forest recreation residences, outfitter guides, recreation events, and concession permits. | Annual billings and issuance of special use permits is done in the SUDS database.<br>The Forest continued to administer a majority of its special use permits. | A screening checklist is also required when determining whether to permit recreation events for compliance with FSM2721.49, FSH 1909.15, 30.3-2 and the terrestrial BA/BE.<br>No Forest Plan changes are recommended. |
| Assess developed sites actual use compared with projected outputs [36 CFR | Use figures collected by concession campground managers and FS campground hosts | All concession and FS campgrounds and picnic sites. | Campground use and occupancy rates were recorded in our Forest concession campgrounds by the concession managers. Use reports are on file at the Forest's Supervisor Office. The Saguache District does not have concession campgrounds. | No changes in the Forest Plan recommended. |

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| 219.12 (k)]. | in our fee campgrounds. | | The Forest continued to implement the recreation facilities analysis and reviewed occupancy rates for developed fee sites. | |
| Evaluate developed recreation [36 CFR 219.12 (k)]. | Comparative evaluation for M&E report [Forest and district recreation personnel]. | Forestwide developed-recreation prescription areas. | Forest recreation objectives, Forestwide standards, recreation management area standards, desired conditions, S&Gs, and monitoring were assessed in conjunction with proposed project assessments. | No changes in the Forest Plan recommended. |
| **Recreation – *Dispersed*** | | | | |
| Evaluate traditional and nontraditional recreation opportunities. | (1) Trail log inventory using GPS (MAR 62.3, 64.3) [Forest trails specialist and district trail coordinators]. | 10–15% of Forest trails. | Almost all Forest trails have been inventoried and entered into INFRA. | No changes in the Forest Plan recommended. |
| | (2) Monitor representative watersheds to assess baseline capacity allocation. Monitor the amount of public and outfitter/guide use occurring in identified watersheds [Forest and district recreation personnel/RSST]. | Forestwide compartments. | Commercial capacity is monitored in all compartments and there are several compartments indicating over-allocation; these will be evaluated during permit re-issuance evaluation. | We will look at our calculations to determine if our baseline figures are correct and if so, what management actions might be needed.<br>No other changes in the Forest Plan recommended. |
| Monitor effects of off-road vehicle use of Forest trails and roads [36 CFR 295.5]. | Assess impacts to physical, biological, and social resources (indicators) [Forest recreation specialist/RSST]. | Hunter patrols during hunting season. | Hunter patrols were implemented again during the hunting season.<br>The Forest emphasized monitoring of afternoon ATV big-game retrieval. | No changes in the Forest Plan recommended.<br>The Forest continues updating the motor vehicle use maps. Future travel management planning efforts are planned. |
| Evaluate dispersed recreation [36 CFR 219.12 (k)]. | Comparative evaluation for M&E report [Forest and district recreation personnel]. | Forestwide dispersed Rx areas. | Forest dispersed-recreation objectives, Forestwide standards, management area S&Gs and guidelines, desired conditions and monitoring were assessed in conjunction with proposed project assessments. | No changes in the Forest Plan recommended. |
| **Recreation – *Unroaded Areas*** | | | | |
| Assess the physical, biological, and social resources | Assess the impacts on the physical, biological, and | Forestwide backcountry areas. | The Forest worked with the regional office to support the State of Colorado Roadless Rule Environmental Impact Statement. This work included correcting previous mapping errors of | No changes in the Forest Plan recommended at this time. |

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| within backcountry areas. | social resources (indicators) [Forest recreation specialist and RSST]. | | inventoried roadless areas. | |
| Evaluate backcountry areas [36 CFR 219.12 (k)]. | Comparative evaluation for the M&E report [Forest and district recreation personnel]. | Forestwide backcountry areas. | Forest backcountry area objectives, Forestwide standards, management area S&Gs, desired conditions and monitoring were assessed by ranger district staff. | No changes in the Forest Plan recommended. |
| **Recreation – *Wild and Scenic Rivers*** | | | | |
| Assess the physical, biological, and social resources within wild and scenic river corridors. | Assess impacts on the physical, biological, and social resources (Indicators) [Forest/district recreation personnel and core team]. | | No wild and scenic river corridors were monitored this year. | No changes in the Forest Plan recommended. |
| Evaluate Wild and Scenic River MA prescription objectives, desired conditions, and S&Gs [36 CFR 219.12 (k)]. | Comparative evaluation for the M&E report [Forest and district recreation personnel]. | Forestwide Wild and Scenic River MA. | The wild and scenic river standards, desired conditions, allocation and monitoring were reviewed. | No changes in the Forest Plan recommended. |
| **Recreation – *Wilderness*** | | | | |
| M&E visitor-use levels and other wilderness resources [36 CFR 293.2]. | Schedule for implementation those priority 1 items outlined in each wilderness area wilderness implementation schedule. Surveys, data gathering, and reports [District wilderness coordinators, wilderness rangers, and resource specialists). | South San Juan, Weminuche, Sangre de Cristo, and La Garita wilderness areas. | The districts continually monitor the wilderness areas. Air quality, campsite and registration monitoring occurred in FY 2013. | The wilderness team is assessing those compartments where some standards have been exceeded and developing recommended management actions.<br>No changes are needed to the monitoring indicators outlined in the 9/1998 wilderness EA decision (which amended the Forest Plan). |
| Evaluate wilderness Forestwide | Comparative evaluation for the M&E report [Forest | Forestwide wilderness MAs. | The wilderness team has prioritized and monitored wilderness compartments to evaluate whether standards are being met or exceeded. | Continue to monitor wilderness |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| goals, objectives, S&Gs, and wilderness MA objectives, desired conditions, and S&Gs [36 CFR 219.12 (k)]. | recreation specialist and district wilderness coordinators]. | | | compartments.<br>No changes in the Forest Plan recommended. |
| **Research and Information Needs** | | | | |
| Determine progress of accomplishing needed research [Items listed on the top of page V-16 of the Forest Plan]. | Questionnaire [Forest staff]. | Poll Forest resource specialists on progress. | No new information for FY12. NRIS databases continue to be updated. | No changes in the Forest Plan recommended. |
| **Research Natural Areas (RNAs)** | | | | |
| Evaluate RNAs [36 CFR 219.12 (k)]. | Ocular, plots, transects, GIS [ecologist: D. Erhard]. | Designated RNAs. | New pre-treatment inventory work was completed in the Hot Creek RNA, including extensive CSE and wildlife data collection. No additional RNAs were visited or evaluated in FY12. | No changes in the Forest Plan recommended. |
| **Scenic Resources** | | | | |
| Determine if project scenic integrity objectives (SIOs) were met. Assess changes in SIO with respect to ROS. | Onsite or photo-point monitoring [landscape architect: K. Ortiz]. | Projects where scenic resources is a key issue, and special areas such as campgrounds, gravel pits, and utility sites. | Many of the sites monitored for 2013 are the same sites monitored in 2012 (relative to meeting SIOs). | Additional assessment of visual effects from the bark beetle epidemic need to occur during project analysis. In addition, more simulations can provide timber coeficients to determine the appropriate level of trees to be left during harvest to still meet the minimum requirements of the scenic integrity objectives.<br>No changes in the Forest Plan recommended. |
| Determine if SIOs were met. Assess constituent | Constituent surveys, visitor observations, interviews, and | Ranger district roads, trails, and recreation sites. | Constituent surveys were not completed in FY 2013 as there was no specific project related to this. | No changes in the Forest Plan recommended. |

| Monitoring Item | Method and [Contact] | Planned Locations | Monitoring Accomplished (What, where, results, summary, and references?) | Evaluation (What are the recommendations based on monitoring? Are changes needed to the Forest Plan?) |
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| survey information. | public participation [landscape architect: K. Ortiz]. | | | |
| Evaluate scenic resources [36 CFR 219.12 (k)]. | Summarize report. | Forest. | Three separate areas were monitored for scenic resource compliance during FY 2013. Under the terms of scenic resources, all areas have 2 years to come into compliance with the SIOs for any area after project implementation. These projects will continue to be monitored over the next year. | No changes in the Forest Plan recommended. However, terminology in the Forest Plan with respect to the scenic S&Gs should be updated during the next plan revision. |
| **Soil Productivity** | | | | |
| Assure that land productivity is maintained or improved. | (1) Monitor soil quality standards [Soil Scientist: Dustin Walters (TEAMS EU)] | Burro Blowout. | Overall, potential harvested units checked within the analysis area are meeting the 15% limit for allowable detrimental soil conditions. | No changes in the Forest Plan recommended. Standards and assessments are adequately working. |
| | (2) Use erosion model to predict erosion or analyze projects after completion. | No new projects requiring WEPP analysis. | | No changes in the Forest Plan recommended. |
| | (3) Ocular estimates, pace transects, on-site, professional judgements to monitor fertility, erosion, mass movement [soil scientist: Dustin Walters (TEAMS EU)]. | Provided on range projects. | Field review found the current grazing management is maintaining and generally improving the soil productivity over the majority of the area and thereby meets the RGNF plan objectives. Areas of concern were discribed and documentated and will be addressed as per design criteria. | No changes in the Forest Plan recommended. |
| | (4) Mass-movement evaluation by monitoring existing and potential problem areas [soil scientist: Michael McNamara (TEAMS EU)]. | No new projects needing mass-movement evaluation. | | No changes in the Forest Plan recommended. |
| M&E soil productivity [36 CFR 219.12 (k)]. | Onsite review and use of pre-existing photo points [soil scientist]. | No new or continuing projects assessed. | | No changes in the Forest Plan recommended. |

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| **Special Interest Areas (SIAs)** | | | | |
| Assess protective measures and interpretive efforts. | Ocular surveys [ecologist: D. Erhard; heritage resource specialist: A. Krall]. | SIAs. | No information was collected on SAIs in FY13. | No changes in the Forest Plan recommended. Evaluations not being completed due to vacancy of Ecologist/Botanist position. |
| Evaluate special interest areas [36 CFR 219.12 (k)]. | Summarize reports or information from districts [ecologist: D. Erhard; heritage resource specialist: A. Krall]. | SIAs. | No information was collected on SAIs in FY13. | No changes in the Forest Plan recommended. Evaluations not being completed due to vacancy of Ecologist/Botanist position. |
| **Timber** | | | | |
| Restocking of harvest areas [36 CFR 219.12]. | Stocking surveys [Forest silviculturist/program manager]. | All locations/sites planned for 1st-, 3rd-, and/or 5th-year surveys. | In 2013 no areas were certified. | No changes in the Forest Plan recommended. |
| Assess timber suitability [36 CFR 219.12; 219.27]. | (1) Standard suitability determination at the Forestwide level [Forest silviculturist/program manager]. | Forest Supervisor's Office, Monte Vista, Colorado. | Forestwide suitability assessments were not planned or completed in 2013. | No changes in the Forest Plan recommended. |
| | (2) Standard suitability determination at landscape or project level [Forest silviculturist/ program manager]. | Forest Supervisor's Office, Monte Vista, Colorado; and District Offices: Conejos Peak – La Jara, Colorado; Divide – Del Norte, Colorado; Saquache – Saguache, Colorado. | On going project are being verified as suitable as part of each planning effort. | No changes in the Forest Plan recommended. |
| Assess insect and disease infestations relative to endemic levels prior to and following management | Onsite inspections, observations and limited sampling. Can include statistically accurate plots [Forest silviculturist/progra | All active timber sales, post-sales and ongoing landscape analyses<br><br>Areas | Insect and disease infestations were surveyed on 68,200 acres. See the narrative description for details. Surveys were conducted to validate aerial flight data and to assess current infestation locations and extent. Surveys corroborated aerial flight data and other observations passed on by Forest personnel. See tables 3 & 4 above.Surveys continue to | Continue insect and disease assessments.<br><br>No changes in the Forest Plan recommended. |

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| activities [36 CFR 219.12]. | m manager]. | undergoing extensive natural disturbance. | show expanding spruce beetle impacts and confirmed spruce beetles are attacking lodgepole pine on the Saguache RD. Other insects noted include: tent caterpillars were impacting scattered aspen clones in June & July; western Spruce Budworm continues to be cronic concern in many areas; pockets of Douglas-fir bark beetle continue to be active. | |
| Monitor size of harvest openings [36 CFR 219.27] | GPS traverses and onsite inspections and reconnaissance [Forest silviculturist/ program manager]. | All current active timber sales and timber sale preparation projects. | All active timber sales boundaries are monitored by sale administrators and harvest inspectors to ensure boundaries have not been altered during harvest operations. At final acceptance of harvest units boundaries are once again checked, including tests for tracer paint. No irregularity in pre-sale boundary locations were noted in inspection reports in 2013. All non-salvage units are less than 40 acres. Salvage units are not required to be less than 40 acres. | No changes in the Forest Plan recommended. |
| Assess implementation of silvicultural objectives during pre-sale, harvesting, and post-sale review periods. | Review silvicultural prescription, onsite inspections, validate before/after photo points, density measurements [Forest silviculturist/ program manager]. | ***See Tables 3 & 4 for details***<br>***Pre-sale:*** *Mater, Belle, and Simba, Jasper Creek, Roman Nose, Chihuahua, salvage sales.*<br>***Harvesting:*** Spruce Park Salvage, Rock Creek Beetle Salvage re-offer, Del Norte Peak Blowdown Salvage, El Gato Salvage, Snowshoe, Boomerang, LaBesouro Salvage, Lost Poplar aspen, Mallard salvage, Mill Creek Salvage, Wapitati Beetle Salvage (BS)*, Last Chance BS*, Baldy BS*, CooperHead BS*, Atlered BS*, Gold Nugget BS*, Table BS*<br>****Burned in*** | *Pre-sale* reviews indicated that the sales were being prepared to achieve the silvicultural objectives for sales evaluated.<br>*Harvesting* reviews indicated that the sales were being implemented in accordance with the silvicultural objectives for the sales evaluated.<br>*Post-sale* reviews indicated that the sales met the silvicultural objectives for the sales evaluated. | No changes in the Forest Plan recommended. |

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| | | ***wildfire***<br>***Post-sale:*** None due to wildfire Bennet Salvage IDT and State BMP monitoring review completed in 2012. All FP standards and BMPs were in compliance.. | | |
| Assess output performance of timber sale program quantity components [36 CFR 219.12]. | Comparative evaluations (MAR items: 17.1, 17.2, 19.0, 19.1, 20.0, 20.1, 77.1, 77.4, 77.5, 77.8, 77.9, 79.1, 79.2 [Forest silviculturist/program manager]. | Forest Supervisor's Office, Monte Vista, Colorado; and District Offices: Conejos Peak – La Jara, Colorado; Divide – Del Norte, Colorado; Saquache – Saguache, Colorado. | *Silviculture Program:* Forest achieved 841.5 acres of a 841.5-acre planned FOR-VEG-EST target (100%). Forest achieved 392.6 acres of a 523.6-acre planned FOR-VEG-IMP target (74.9%) due to fire borrow. The Forest collected 117.5 bushels of Engelmann spruce cones on 6 areas across 3 of 4 seed zones.<br>*Timber Program:* The amount of timber sale volume offerred and sold was 26,600 ccf which was 100% of planned. | No changes in the Forest Plan recommended. |
| Assess timber program [36 CFR 219.12 (k)]. | Comparative evaluations [Forest silviculturist/program manager]. | Forest Supervisor's Office, Monte Vista, Colorado; and District Offices: Conejos Peak – La Jara, Colorado; Divide – Del Norte, Colorado; Saquache – Saguache, Colorado. | The Forest reviewed Forest Plan (Forestwide) desired conditions (goals), objectives, and S&Gs (for Silviculture); reviewed MA, prescriptions, and S&Gs for MAs including suitable timberlands (4.21, 4.3, 5.11, 5.13, and 5.41); and reviewed monitoring approaches to timber-related desired conditions.<br>A Regional Log Accountability Audit was conducted on the Forest in 2012. Results of the audit, and action items needing attention, were sent to the Forest Supervisor. The Forest responded to the action items in a response letter. Most of the action items have been completed; some are ongoing activities needing further attention.<br>A Regional Trust Fund Audit was conducted on the Forest in 2008. Results of the audit, and action items needing attention, were sent to the Forest. The Forest responded to the action items in a response letter in 2009. Most of the action items have been completed; some are ongoing activities needing further attention. | No changes in the Forest Plan recommended. |