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**Southwestern
Region**

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Apache-Sitgreaves National Forests Plan

Monitoring and Evaluation Report Fiscal Year 2015

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Introduction

This Apache-Sitgreaves National Forests (ASNFs or the Forests) monitoring and evaluation report for fiscal year 2015 provides monitoring information and addresses monitoring questions as identified in chapter five (monitoring plan) of the 1987 Apache-Sitgreaves National Forests Plan. The ASNFs finished revising the 1987 plan in fiscal year 2015, and the revised plan went into effect on October 24, 2015. This, therefore, is the final report prepared under the 1987 plan. Monitoring and evaluation reports under the revised Land Management Plan will be published biennially beginning in summer 2018.

Integrated Resource Restoration

During fiscal year 2012, the Forest Service initiated a pilot project in Regions 1, 3, and 4 to realign the budget structure to focus landscape-scale restoration across multiple resource areas and to support and accelerate the pace of a wide spectrum of restoration and resiliency enhancing activities. This new emphasis merged programs previously separated out as forest products, vegetation and watershed management, fish and wildlife habitat management, non-WUI (wildland urban interface) hazardous fuels, post-fire restoration and rehabilitation, and legacy roads and trails (including road decommissioning).

This change was prompted by the Secretary of Agriculture's vision for integrated watershed protection and restoration that recognizes the role of healthy forests in enhancing water resources and maintaining resiliency within a changing climate. This integrated approach has facilitated the reduction of risk from uncharacteristic wildfire, aided the restoration of habitat in entire watersheds, and provided wood to local and regional industries.

The Forests began using this integrated approach in planning during fiscal year 2012 and continued through fiscal year 2015. Seven priority landscapes with 6 priority watersheds were identified to implement Integrated Resource Restoration over the 5 year pilot period. The priority landscapes are Timber-Mesa-Vernon, Rim Lakes, Larson, Escudilla East, East Eagle-Sheep Wash, Black River, and Wildcat. The priority watersheds are Long Tom Canyon-Chevelon Canyon, Upper Wildcat Creek, Canovis Creek-Coyote Creek, Pratt Lake, Long Lake, and Dry Lakes-Nutrioso Creek.

Soil, Water, Riparian, and Air Quality Management

The Forest continues to design, implement and monitor Best Management Practices (BMPs) to mitigate non-point source pollution for all ground-disturbing activities. Resource activities such as logging, grazing, burning, and road maintenance were monitored in 9 locations in 2015 (Figure 1). In most cases, BMPs were implemented correctly, and those BMPs implemented were effective in reducing or eliminating pollutants from entering stream courses. Corrective actions were initiated in instances where monitoring indicated noncompliance with BMPs. In 2015, the Forests also conducted soil disturbance monitoring on forest and woodland harvest projects. Five sites were monitored with mixed results. The Forests recommended training to ensure that the protocol was being administered correctly and to bring awareness to project personnel. A multi-forest soil monitoring workshop was held on the ASNFs in the spring of 2016.

Figure 1. Minor rutting within Burro Salvage harvest area monitored in 2015. Soil disturbance for this unit was below the level of management concern.

Watershed improvement accomplishments across the Forests have been directly linked to the Forests' landscape-scale restoration projects. In fiscal year 2015, the Forests accomplished over 55,000 acres of soil and water resource improvement. Improvement activities include thinning overstocked forests and woodlands (18,000 acres), prescribed fire (36,000 acres), noxious and invasive species control including treatments within riparian areas (1,000 acres), seeding and reforestation (317 acres), and stabilization of forest roads and trails (29 acres or about 10 miles).

Priority 6th-level hydrologic unit code watersheds (averaging about 20,000 acres) are now identified and align with upcoming major landscape restoration treatment areas. The Forests' first Watershed Restoration Action Plan (WRAP) was completed for the Long Tom Canyon-Chevelon Canyon, and Upper Wildcat Creek watersheds which were aligned with the Larson Restoration Area. Project implementation is scheduled to begin in FY 2017. The plan identified over $7 million in treatments. The bulk of the restoration is tied to thinning dense forests to reduce the risk of uncharacteristic fire within the watershed. Other treatments within the WRAP include removal of unauthorized routes (including OHV trails), riparian and stream channel treatments, relocation of range infrastructure away from the riparian areas, and sandstone mine rehabilitation.

Streamflow monitoring continued in selected streams to perfect instream flow water rights, primarily in the Upper San Francisco and Black River Watersheds (Figure 2). These non-consumptive rights are junior to all existing water right claims and are critical for the protection of aquatic species and water-based recreation.

Figure 2. Black River. The Forests have applied for an in-stream flow water right to protect forest and other water right owners.

Air quality monitoring for the Mount Baldy Wilderness continued in fiscal year 2015 and is entering its 12th year. Based on a 2011 IMPROVE (Interagency Monitoring of Protected Visual Environments) report, there has been a slight improvement (reduction) of regional haze over the period of 2005-2009 for Mount Baldy Class I airshed. A newer report has not been completed. Smoke contributes to regional haze, so forest managers must request approval from Arizona Department of Environmental Quality daily for ignition of wildland fire projects in order to minimize cumulative effects of haze across the state.

Fire and Fuels Management

Fiscal year 2015 activity was light to moderate for the number of fires and acreage burned. A total of 119 fires occurred within National Forest jurisdiction during the year, burning 4,783 acres (Table 1). There were 4 fires that exceeded 100 acres, with the largest being 2,500 acres. The 17-year average is 225 wildfire occurrences per year at an average size of 2 acres and 72,598 acres consumed annually.

Fire managers also used fire as a tool to reduce fuel loads and restore fire-adapted ecosystems. In 2015, 17,715 acres of prescribed fire were accomplished including both pile and broadcast ignitions. Figure 3 shows conditions before, during, and after the 512-acre Buckelew prescribed burn project southeast of Vernon, Arizona on June 15, 2015.

Table 1. Number and causes of wildfires during 2015.

Cause	Number of Wildfires
Lightning	93
Equipment Fires	2
Smoking	1
Campfires	12
Debris Burning	0
Arson	0
Children-caused	0
Miscellaneous	11
Total	**119**

Figure 3. Buckelew prescribed burn project, prior to implementation (top), during implementation (center), and post-implementation (bottom).

Cultural Resources

Fiscal year 2015 marked another busy year for the ASNFs' archaeologists. The Forest Heritage Program on all of the Ranger Districts was fully staffed after being understaffed for the last few years. Our program welcomed Alpine District Archaeologist Stephanie Welch and Apache Zone Archaeologist Ted Neff, who came to us from the National Park Service. Prior to having the position permanently filled, we detailed a zone archaeologist, Maria Schleidt, from the Ouachita National Forest in Region 8. During the

summer season, a temporary employee was hired to help with Apache projects and a not-to-exceed one year position and three temporary employees were hired to assist with Sitgreaves projects.

Figure 4. Early-Middle Archaic Bajada point found during a site monitoring project on the Alpine Ranger District.

Projects

Compliance-related work under Section 106[1] of the National Historic Preservation Act and the Region 3 Programmatic Agreement included many activities this year (Table 2, Figure 4). Most of the inventory work completed by staff archaeologists was for range-related projects and lands and recreation special use permit renewals. Other projects included site flagging and monitoring for larger-scale ecosystem restoration projects, San Juan Fire activities such as Burned Area Emergency Response (BAER) reports, non-fire emergencies, silviculture projects, engineering/facilities projects, a fisheries project, a minerals project, and a Small Tracts Act project. Another legacy cultural resource site relocation contract was awarded, and FY 14-15 contracts covering approximately 1.2 million acres of NFS land were administered for large-scale 4FRI bridge projects, with four of these contracts completed and made ready for implementation.

Table 2. Acres surveyed and numbers of sites recorded or re-recorded under sections 106 and 110 of the National Historic Preservation Act in fiscal year 2015.

Project Acreage	Acres Surveyed	Acres Resurveyed	Acres Previously Surveyed	Number of Sites Recorded, Updated, or Monitored*
20,460	22,763	959	614	313
* As of August, 2016, the ASNFs have 7,655 cultural resources listed in their INFRA database				

In fiscal year 2015, 5 sites were monitored for 3 Section 106 projects: Timber Mesa Vernon WUI, Escudilla Revegetation, and First Knoll Cinder Pit. Archaeological Resources Protection Act (ARPA) signs were posted at nine sites, which were also monitored.

Figure 5. Completed patio roof at the Double Circle Lodge.

ASNFs archaeologists also worked on Section 110[2] targets (Table 3, Figure 5). In fiscal year 2015, the ASNFs met the Forest Service's Section 110 target with a score of 63 of a possible 70 (up from 59 in FY 2014), exceeding the minimum score of 45 for "Heritage Program Managed to Standard." Types of Section 110 projects included guided talks hosted by ASNF archaeologists or other forest staff, "kids in the woods" presentations, Passport In Time-like projects, displays set up within administrative buildings, public talks, professional papers/contributions, legacy data entry (Infrastructure and Geographic Information Systems databases), engaging with the Arizona Site

[1] Section 106 requires agencies to take into account the effects of their actions on historic properties.
[2] Section 110 requires agencies to identify, evaluate, and protect historic properties.

Stewards and members of the Arizona Archaeological Society, surveys to locate, monitor, and record sites (425 acres), evaluating 21 sites for the National Register of Historic Places, installing a missing patio roof at one historic structure, administering third-party cultural resources special use permits, developing interpretive plans, participating in a research project (General Crook Trail), and monitoring or enhancing 13 Priority Heritage Assets (PHAs) and 17 non-PHAs. Eight sites were added to the list of PHAs, and one site was removed from the PHA list because it was discovered be a duplicate of a site that was already a PHA. During Fiscal Year 2015, the White Mountain Apache Tribe Youth Conservation Corps also visited the Alpine Ranger District to participate in a cultural resources survey and site visitations.

Table 3. Projects completed under Section 110 of the National Historic Preservation Act in fiscal year 2015.

Project Type	Number	Notes
Site Monitoring		
Direct Protection	14 sites	Five sites were monitored for Section 106 projects. ARPA signs were posted at nine sites.
Site Steward Monitoring	2 sites	Two sites on the Black Mesa Ranger District were monitored by Arizona Site Stewards in 2015.
Priority Heritage Asset (PHA) Monitoring	12 sites	Twelve PHAs on the Alpine, Black Mesa, and Lakeside Ranger Districts were monitored in 2015.
Non-PHA Monitoring	17 sites	Seventeen non-PHA sites on the Alpine, Black Mesa, Clifton and Springerville Ranger Districts were monitored in 2015.
Presentations/Windows-in-the-Past Projects		
Professional Presentations	7 pre-sentations	Seven talks/presentations about ASNF archaeology and/or cultural resources management were presented in 2015. Of note were two presentations by Alpine District Archaeologist Stephanie Welch to the 2015 Pecos Conference and a presentation by David Purcell, Peter Taylor, and Danny Sorrel to the 2015 Society for American Archaeology.
Public Outreach/ Guided Talks	2 projects	Both the Alpine and the Black Mesa Ranger District archaeologists provided guided talks. Alpine Ranger District provided a guided talk to the White Mountain Apache Tribe Youth Conservation Corps and the Black Mesa Ranger District provided guided tours to the public as part of the Black Mesa Ranger District's "Ranger Bob" program.
Kids in the Woods projects	2 projects	As part of the annual Black Jack Day event, Clifton Ranger District Archaeologist Eric Bredemann presented to 120 third graders and 15 teachers and parents from Morenci, Arizona the basics of archaeology, and a small area was set up so children could look for pottery and lithics. During a separate event, Eric Bredemann also taught a two hour introductory map and compass class to seven members of the local 4H Club. Archaeological examples were used during the class. Also during Fiscal Year 2015, the White Mountain Apache Tribe Youth Conservation Corps visited the Alpine Ranger District to participate in cultural resources survey and site visitations. White Mountain Youth Conservation Corps members worked with District Archaeologist

Project Type	Number	Notes
		Stephanie Welch and temp archaeologist Michael Chodoronek and learned how to use a map and compass, how to conduct cultural resources survey, and how to locate, map and monitor sites.
Displays	2 displays	An Aldo Leopold display and a display of historic and prehistoric artifacts were set up at the ASNF Supervisor's Office and Clifton District Office, respectively.
Site Evaluations		
National Register Evaluations	21 sites	Twenty-one sites from the Alpine, Black Mesa, Clifton, Springerville and Lakeside Ranger Districts were evaluated for inclusion on the National Register of Historic Places in 2015.
Planning		
Forest Plan Revision	2 chapters	The Cultural Resource and American Indian Rights and Interests chapters were completed for the revised Land Management Plan, which was completed in fiscal year 2015. These chapters were completed in consultation with Tribes.
Other Heritage Resource Program Planning	2 projects	A cultural resource overview and management plan was completed for the Forest Plan Revision, and a Heritage Program Section 110 plan for FY 15 and 16 budgets was also completed.
Training/Recertification		
Para-Archaeologist Training/Recertification	7 personnel	In order to meet the guidelines set forth in FSM 2360, R-3 Supplement 2300-99-3, the Gila National Forest hosted classroom training in 2015 and six ASNF employees participated in the training. Two ASNF para-archaeologists were recertified through the classroom training and two new paras were certified through classroom training and field training. Two new employees took the classroom training but did not complete the field training. One para-archaeologist was recertified through refresher training conducted on his ranger district throughout the 2015 field season.
Site Steward Training	1 training	The Black Mesa Ranger District hosted Arizona Site Steward training in 2015. The training included classroom and field training.

Of note, the Clifton Ranger District continued to work with the Arizona Pilots Association (APA) during Public Lands Day. On May 8 and 9, 2015 APA had their semi-annual backcountry gathering at the Double Circle Ranch. During that time, the group constructed a patio roof along the south side of the lodge. Twenty individuals/volunteers were present over the weekend, including local residents from nearby ranches.

The Lakeside Ranger District conducted a Section 110 petroglyph recording project (Figure 6). Petroglyphs were identified and recorded (photographed and drawn) for this project. Several petroglyphs had been

Figure 6. Petroglyph panel on ASNFs.

previously identified by a graduate student, but no files were located on the forest. The sites were therefore relocated, and records were updated. The plan is for the entire area to be recorded so that the data can be used to identify rates of degradation, vandalism, and other threats to the resources. These data will allow the petroglyphs to be regionally compared to identify movement patterns across the landscape.

ARPA Investigations

No new incidents of looting or vandalism were reported in 2015. Two cases associated with looting discovered in 2014 are still under investigation (Table 4).

Table 4. Archaeological Resources Protection Act (ARPA) investigations in fiscal year 2015.

Incident Type	Number of Sites Involved	Description
Looting	1	In December 2013, a contractor reported that a Mogollon habitation site on the Lakeside Ranger District was recently looted. This site is the same site that was mentioned in the 2012-2013 monitoring report that was reported by a private citizen in 2012. Several of the existing holes had been dug deeper, exposing walls, ceramics, and faunal bone, and two additional holes were dug. No additional looting was observed when the site was monitored in 2015. The incident is still under investigation.
Looting	1	In August 2014, a detailed Forest Archaeologist, the Clifton Ranger District Archaeologist, and one of the Clifton para-archaeologists discovered a prehistoric cave and pictograph site that was recently looted. Much of the cave floor was disturbed by past and recent looting. The incident is still under investigation.

Rangeland Management

The ASNFs administered nearly two million National Forest System acres in 92 active livestock grazing allotments in 2015. The ASNFs' rangeland management emphasis has been on maintaining satisfactory wildlife habitat, watershed, riparian, and forage vegetation. In 2015, the ASNFs permitted livestock use was 186,804 head-months. A few allotments were not grazed at all by livestock, and many allotments were authorized fewer livestock than full permitted numbers (Table 5). This total or partial non-use happened because of resource protection needs, wildfire, personal convenience of the ranchers, or because several allotments are vacant.

Table 5. Permitted and authorized head months of occupancy in 2015.

Head-Months	Cattle	Sheep	Horses and Burros	Total Head-Months
Permitted	136,960	47,522	2,322	186,804
Authorized	91,823	38,902	2,208	132,933

Range specialists conducted condition and trend studies on 3 allotments in preparation of upcoming Rescission Act environmental analysis in 2015. The Forests continue to work on the treatment of noxious or invasive weeds and treated 612 acres of noxious and undesired exotic weeds.

Terrestrial Wildlife

The ASNFs completed wildlife program projects over more than 73,000 acres during fiscal year 2015 (Table 6). These projects were both partnership and non-partnership in nature, and benefitted a number of priority species, including game species, species listed as Federally threatened and endangered under the Endangered Species Act, and other non-game species (Table 7).

All projects covered in Table 6 benefitted at least one species, and most projects benefitted multiple species. For example, replacement of vent cap covers for vault toilets likely benefitted multiple species (e.g., birds such as owls) over an estimated 2102.91 acres. Examples of other projects benefiting multiple species include tree thinning and prescribed fire that improved forest and grassland habitat, fence removal to restore landscape connectivity, installation of ungulate riparian exclosure fencing to protect riparian wildlife habitat, and guzzler development and tank clearing to provide wildlife water sources.

Table 6. Wildlife program project accomplishments and funding for fiscal year 2015.

Project Type	Accomplishments (acres)	Funding
Partnership[3]	9,047.35	$262,852
Non-Partnership (all other funding sources)	64,249.26	$4,007,985
Total	73,396.61	$4,270,837

Table 7. Examples of projects benefitting wildlife during fiscal year 2015.

Benefitting Species	Acres Improved
Northern Goshawk	796
Mule Deer	3,290.1
Pronghorn	2,002.1
Rocky Mountain Elk	5,273.1
Mexican Spotted Owl	848.59

Threatened, Endangered, Proposed, and Sensitive Species

The Forests continued to monitor Federally threatened, endangered, proposed, and the Region 3 Forester's sensitive species during 2015. Table 8 contains a summary of these efforts; details are provided below.

Table 8. Summary of TEPS monitoring completed in 2015

Benefitting Species	Number of PACs/PFAs/Sites Monitored
Mexican Spotted Owl	78 existing PACs and inventory of new areas

[3] Partners: Rocky Mountain Elk Foundation, National Wild Turkey Federation, An individual, Arizona Game and Fish Department (AZGFD), National Forest Foundation, Mule Deer Foundation, Southeastern Arizona Sportsmen Club, and Natural Resources Conservation Service.

Benefitting Species	Number of PACs/PFAs/Sites Monitored
Northern Goshawk	48 PFAs and inventory of new areas
Bald Eagle	6 nests
Southwestern Willow Flycatcher	2 riparian sites
New Mexico Meadow Jumping Mouse	15 riparian sites
Narrow-headed gartersnake	11 streams
Northern Mexican gartersnake	1 stream
Chiricahua leopard frog	5 populations or stocking locations
Apache trout	6 populations
Gila chub	2 populations
Loach minnow	2 populations
Spikedace	1 population

Mexican Spotted Owls

Forest Service field crews and contractors monitored 78 of the known 158 Protected Activity Centers (PACs) and verified occupancy on 57. Survey efforts resulted in the redrawing of several PAC boundaries. Additionally, field crews established new PACs for a few breeding pairs found during inventory of thousands of acres of previously unsurvey potential or suitable habitat.

Northern Goshawks

In 2015, Forest Service field crews formally and informally monitored goshawks in 48 post-fledgling areas (PFAs) and inventoried areas where forest restoration projects may occur. They confirmed that 10 pairs produced at least one fledgling.

Researchers from Bird Conservancy of the Rockies monitored goshawk occupancy in 2013, 2014, and 2015. The purpose of the study was to compare goshawk occupancy density estimates in areas burned during the Wallow Fire with those outside of the burned area. Researchers used a grid of 1,481 600-ha Primary Sampling Units (PSU) and assigned each PSU into a “primary” habitat category if it was within ponderosa pine or mixed conifer forest types or a “marginal” habitat category if it was within pinyon-juniper woodland or subalpine forest types. Additionally, each PSU fell within or outside of the Wallow Fire burn perimeter.

The 2015 occupancy estimates indicate the density of goshawks was higher (evidence of an 81% increase in occupancy from 2014 to 2015) in 2015 than in 2013 or 2014 and that there was no difference in occupancy between burned and unburned ponderosa pine forests. This result provides evidence that goshawks occupy ponderosa pine forests within the burn perimeter at the same level as unburned ponderosa pine forests two to four years after a burn. The current monitoring results cannot determine if goshawk occupancy in the burned area is significantly different from before the burn because there was no Forest-wide monitoring until after the burn took place. However, these data might be used to investigate how, or if, burn intensity, regeneration or other fire characteristics affect goshawk occupancy. Additionally, long-term monitoring of established PSUs may allow researchers to determine how fire affects occupancy because researchers may collect pre- and post-fire data.

The current monitoring does not address long-term effects of fire on occupancy. For example, goshawks may occupy the burn perimeter only due to site fidelity, and as territorial adult death occurs, no new colonization will occur, resulting in decreased occupancy. The average lifespan of a goshawk is about 10 years, and this study took place within a timeframe where site fidelity may explain current occupancy in

burn areas. Continuing this study is ideal for answering occupancy questions; ASNFs would need approximately $46,000 annually to continue funding this study.

Bald Eagles

Land and wildlife management agencies formed the Southwestern Bald Eagle Management Committee in 1984 by to enhance coordination, increase communication, and provide oversight for Arizona bald eagle management. The Forest Service is one of these agencies. Through an agreement with the AZGFD, the Forest Service provides funding to AZGFD, who coordinates bald eagle nest monitoring at six sites on Apache-Sitgreaves National Forests. In 2015, bald eagle pairs at Luna Lake (due to predation by a golden eagle) and Greer Lakes (10.5 week nestling went missing on June 18) failed to raise chicks to fledgling status. Eagles at Crescent Lake and Show Low raised two chicks and one chick successfully, respectively. Monitoring at a new bald eagle nest at Chevelon Lake detected one fledgling raised successfully, and the nest at Woods Canyon Lake produced two fledglings. AZGFD banded the fledglings at Woods Canyon Lake (Figure 7).

Figure 7. AZGFD biologists band eaglets at Woods Canyon Lake, 2015. Photo credit: David Seery, wildlife biologist, Black Mesa Ranger District.

Southwestern Willow Flycatchers

Field crews surveyed two sites on the Alpine Ranger District to protocol in 2015, but did not detect this species at either site.

New Mexico Meadow Jumping Mice

Monitoring and research efforts lead by Carol Chambers of Northern Arizona University focused on New Mexico Meadow jumping mouse (jumping mouse) habitat use, diet, and development of non-invasive survey methods. Crews live-trapped at 11 sites from June 2015-mid September. At some sites crews repeated trapping efforts for a total of 15 visits, and captured 20 jumping mice (12 females, 8 males) at 5 sites. The team developed a non-invasive detection method for jumping mice using a tracking plate (Figures 8-9). The crew used track plates at 9 sites (five of which were also live-trapped) and detected mice at 6 of them. Thus, surveys occurred at 15 sites total (two on neighboring private land), and field crews confirmed occupancy at 12 of these sites. Sites with jumping mouse occupancy had high plant diversity. Preliminary diet information indicates that their diet is also diverse.

Figure 8. New Mexico Meadow jumping mouse caught during surveys on Apache-Sitgreaves National Forests in 2015. Photo credit: Northern Arizona University Field Crew.

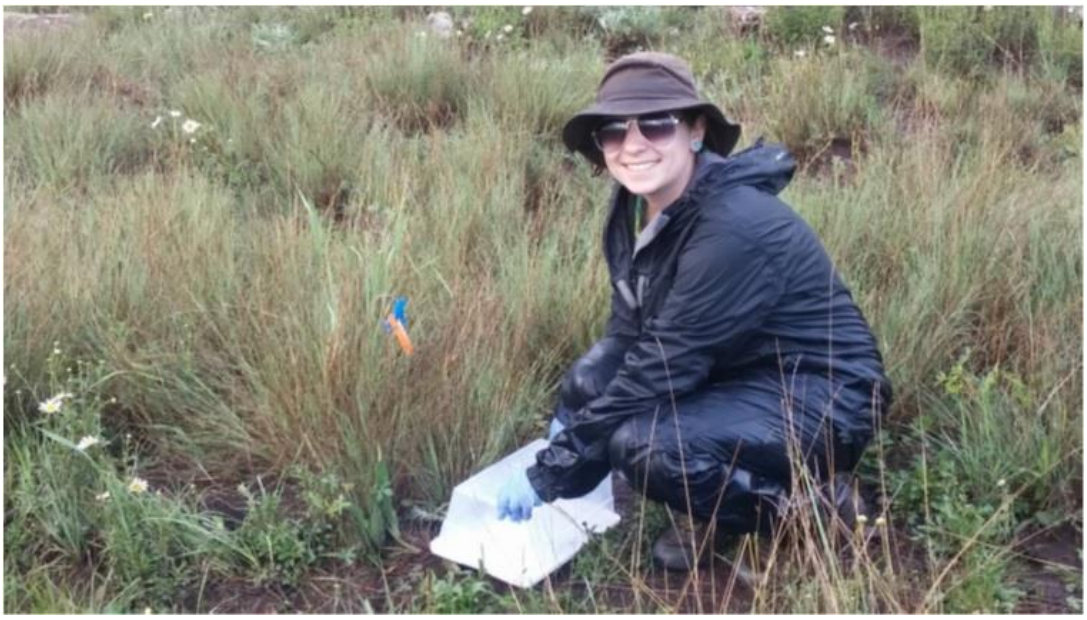

Figure 9. Northern Arizona University biologist setting tracking plates for New Mexico meadow jumping mice on the Apache Sitgreaves National Forests in 2015. Photo credit: Carol Chambers, Northern Arizona University.

Mexican Wolf Reintroduction Program

The Forests actively worked with five other state and federal agencies to continue efforts in the reintroduction of the endangered Mexican gray wolf in New Mexico and Arizona.

From 2013 through 2014, Mexican gray wolf numbers increased by 30%, with a minimum of 110 wolves counted in Arizona and New Mexico. In 2015 the population decreased by 13% for a total minimum population of 97. The field team located 57 wolves on the Apache portion of the Forests. These wolves made up nine packs that are maintaining territories on the Forests in 2015. A pack comprises at least one adult pair.

One initial release occurred in 2015 on Alpine Ranger District consisting of an adult male and female. No translocations occurred in 2015. A translocation is defined as when an individual free-ranging wolf is captured and moved to a location within either the Primary or Secondary Recovery Zone but away from the site of capture. This includes captured wolves that have been temporarily housed in captivity.

Reports from ranchers and others resulted in confirmation of 16 cases of livestock killed or injured by wolves on the Apache-Sitgreaves National Forests and private holdings in 2015. In 2014, 13 depredations on livestock were confirmed as wolf-caused. Additional livestock may have been killed by wolves but either were not found or were found too late to confirm the cause of death. In response to these problems, the Interagency Field Team (IFT) shares wolf locations with livestock permittees to prevent conflicts. The IFT also conducts hazing on wolves known to kill livestock and uses other proactive measures to reduce depredations. The IFT requests reporting of any encounters with wolves to the Interagency Field Team at 1-888-459-9656.

Four wolves are known to have died in the wild during 2012, and 7 died in 2013. In 2014, 11 wolf deaths were documented. In 2015 a total of 24 wolves' deaths were documented in Arizona and New Mexico.

Threatened, Endangered, Proposed and Sensitive Aquatic Species

The ASNFs includes habitat for ten federally listed, two proposed and one candidate aquatic species including Gila trout, Chiricahua leopard frog, Gila chub, Little Colorado spinedace, loach minnow and narrow-headed gartersnake. There are currently six sensitive aquatic species present on the Forest. The ASNFs encompass aquatic habitat within the Gila, Salt, and Little Colorado River drainages. Aquatic habitats are a key component and important asset in managing the National Forest System lands.

The ASNFs completed multiple projects in 2015 that benefitted native aquatic species across the forests and one which benefitted recreational fisheries. Projects included aquatic organism passage improvement, lake restoration and non-native species removal. Project costs, including agency and partner funding, totaled $261,653 (Table 9). Eight native aquatic species benefited from these projects, including Federally listed fish and gartersnakes as well as sensitive fish.

The Beaver Creek aquatic organism passage project removed a failing set of culverts and replaced them with a bottomless culvert. Stream simulation was used to reconstruct the stream channel through the culvert, restore stream gradient and connectivity above and below FSR 26. This is the first project of its kind completed on the Forests. After project completion, fish surveys detected proposed roundtail chub that not previously been documented above FSR 26 had moved through the newly constructed passage. This project benefitted roundtail chub, desert sucker, Sonoran sucker, speckled dace, Chiricahua leopard frog, and Apache trout.

A different type of fish passage project completed involved removal of an existing fish barrier on Lee Valley Creek allowing natural movement of Apache trout from Lee Valley Reservoir into the creek. The Arizona Game and Fish Department funded barrier removal and channel restoration to stabilize the streambed and prevent erosion.

Tamarisk removal along the Blue River and its tributaries was completed in 2015 benefitting multiple aquatic and riparian species such as narrow-headed gartersnake, Chiricahua leopard frog, and loach minnow. The project occurred over multiple years along the 50-mile stretch of the Blue River. Tamarisk had only begun to invade the system and was at very low densities. Removing this invasive species protects the native riparian woody vegetation which provides streambank stabilization, hiding cover, and leaf matter for aquatic macroinvertebrate prey bases. This project benefitted loach minnow, spikedace, roundtail chub, desert sucker, Sonoran sucker, speckled dace, longfin dace, narrow-headed gartersnake, and Chiricahua leopard frog.

The Hulsey Lake restoration project (Figure 10) restored a 5-acre recreational fishery. The lake was drained and used as a sediment trap after the 2011 Wallow Fire. Prior to the fire, excess non-native vegetation and sedimentation were creating low dissolved oxygen levels. Forest engineers redesigned the lake prism to be contoured with natural fish piers to allow for shallow and deep water. In addition, an island for duck nesting habitat was created in the center of the lake. The lake was dredged, re-contoured and filled during 2015. Funding was provided from the Forests and the Eastern Arizona Resource Advisory Committee with strong support from Alpine Alliance.

Figure 10. Hulsey Lake after restoration project completion.

Table 9. Aquatic program project accomplishments and funding for fiscal year 2015.

Project Type	Accomplishments (stream miles or lake acres)	Funding
Stream Projects		
Partnership	29.4 miles HBT-ENH-STRM	$24,100
Non-partnership	15.1 Miles HBT-ENH-STRM	$237,553
Total Streams	44.5 miles HBT-ENH-STRM	$261,653
Lake Projects		
Partnership	1 acre HBT-ENH-LAK	$15,000
Non-partnership (all other funding sources)	4 acres HBT-ENH-LAK	$229,000
Total Lake	5 acres HBT-ENH-LAK	$244,000

Aquatics Monitoring

Multiple aquatic species populations were monitored during 2015. Persistence of existing populations and expanding populations where feasible is part of the Forest Plan.

Surveys for narrow-headed gartersnake were contracted to Northern Arizona University and completed at eleven locations within ten different streams. No narrow-headed gartersnakes were detected during the university's survey efforts; however two gartersnakes were captured in the Black and Blue Rivers by Arizona Game and Fish Department. This species is federally threatened and populations have declined in the last 15 years.

Chiricahua leopard frog surveys occurred in both known populations and in locations for stock tank cleanings. The Forest has three populations of Chiricahua leopard frog that persist: Harden Cienega, Dix Creek and Dry Lake Tank. Populations were augmented with stocking of adult or metamorph frogs. Frogs were also stocked at two other locations where the Forest, in partnership with AZGFD, are trying to increase the number of populations present.

Six populations of Apache trout were monitored by either Forest personnel or Arizona Game and Fish Department. Four of the six populations were present; Coyote Creek (Little Colorado River) and Hannagan Creek had no fish detected. Apache trout have not been documented in Coyote Creek since the droughts in 2007-8 and Hannagan Creek had not been surveyed since before Wallow Fire.

Gila chub populations in Dix Creek and Harden Cienega were surveyed and persist. Occupied habitat was expanded when Arizona Game and Fish Department moved Gila chub above a natural waterfall barrier in Harden Cienega.

Blue River and Campbell Blue Creek were surveyed and documented persistence of loach minnow. Both populations have been impacted by multiple fires, ash flows, predators, and lack of high spring runoff. However, both populations persist at low densities based on survey findings.

Spikedace were surveyed in Blue River and persist after being stocked by Arizona Game and Fish Department in 2012. Reproduction was documented through capture of multiple age/size classes of spikedace above the Blue River barrier.

Project Highlight: WMAT Tribal Youth Crew

Engaging youth in natural resources is a focus of the Department of Agriculture for providing education, insight and career development. The Apache-Sitgreaves National Forests (ASNFs), White Mountain Apache Tribe (WMAT) and Southwestern Tribal Fisheries Commission (SWTFC) began collaborating on a joint Tribal Youth Crew venture in fall of 2014. The joint vision was to engage tribal youth in natural resources management by exposing them to a wide variety of work and career opportunities. Patterned after a YCC crew, the 2015 WMAT tribal youth crew consisted of WMAT youth working jointly between tribal lands and forest lands on various projects within multiple resource areas.

The Youth Crew worked with Fisheries biologists to conduct stream habitat and fish surveys for the week of June 30 – July 2 in three streams on Forest. The crew learned how to identify, weigh and measure fish. They learned the proper way to handle fish and reduce mortality during surveys. The crew was also gained an understanding in how fish data can be used to show age/size class structure of different species and why that is important. The crew was taught about aquatic diseases, such as chytrid fungus, and shown how to properly disinfect field gear between streams or drainages to prevent the spread of those diseases. For stream habitat, the youth crew measured water quality, identified and measured stream habitat and substrate types, and recorded data. They learned why different habitat types are important and how various fish species utilize them. Stream ecology was a big part of conversations during the week including how stream habitat types and riparian areas function to provide for the needs of a fish community and aquatic macroinvertebrates (bugs).

During the week of July 6 – July 10, the wildlife program hosted the Tribal Youth Crew (Figures 11-13) from the White Mountain Apache Tribe. The Youth Crew is a joint venture between the White Mountain Apache Tribe and the Apache-Sitgreaves National Forests to provide tribal youth with exposure to careers in a natural resources setting and to help foster conservation values in future generations. The Youth Crew of six worked with Alpine Ranger District Staff Wildlife Biologist Loren LeSueur and the Alpine District Wildlife Crew.

The Youth Crew first learned about cavity nesting birds and the hazard vault toilets can create for these birds. Many cavity nesting birds, numbering in the millions across the world, investigate open pipes as they resemble the cavities these birds use to rear their young. Often, they fall in and are then trapped inside the pipe as they can't fly out. Vault toilets and the large diameter vents installed in them are a standard feature across the Forest Service System, and are an ecological trap for these birds, especially larger cavity nesters such as owls. The Youth Crew learned about the need to cap these toilet vents and discussed the dangers associated with doing the work.

The Youth Crew also accompanied the Wildlife Crew on some wildlife surveys to see the work wildlife technicians and biologists routinely perform with spotted owls and northern goshawks. The Wildlife Crew demonstrated the survey protocol, explaining how they find the birds, and why the Forest Service is interested in them. The Youth Crew got to see these raptors up close, and got a taste for what it means to be a wildlife biologist with the Forest Service. We hope to see them later on in their lives in the Natural Resources Career Field!

During July 29 – 30 the crew worked alongside Alpine Ranger District's Archeologists Stephanie Welch and Michael Chodoronek on projects to benefit Heritage resources across the district. The Youth Crew was first introduced to the principles and regulations effecting cultural resources on federal properties. Then they were trained in archeological survey techniques including: map reading, site location strategies, artifact identification, pace-count mapping, compass use, and GPS mapping.

The week of August 3-7 marked the last week of the joint Apache-Sitgreaves National Forests and White Mountain Apache Tribe youth crew. The crew spent three days with the wilderness/trails crew from Alpine Ranger District being trained on how to clear trails in the Blue Primitive area with cross-cut saws. Forest Supervisor Tom Osen joined the Tribal Youth Crew for a day in the field during the trails work.

Figure 11. Shanaki Hopper, Geron Beatty, and Dheus James identifying fish captured in Campbell Blue Creek. Photo credit: ASNFs Fisheries Program.

Figure 12. Shanakai Hopper listens as Alpine Ranger District wildlife crew member Zach Foster explains some signs of wildlife while Justin Gatewood scans the sky. Photo credit: Alpine Ranger District wildlife crew.

Figure 13. Shanakai Hopper and Justin Gatewood pose with the mouse-holding tube for spotted owl work. Photo credit: Alpine Ranger District wildlife crew.

Transportation

One of the goals of the Apache-Sitgreaves National Forests Plan is to "provide and manage a serviceable road transportation system that meets the need for public access, land management resource protection, and user safety." Road maintenance and reconstruction is a major activity to support Forest restoration activities through the Four Forest Restoration Initiative (4-FRI) and other vegetation treatments in addition to recreational activities access (Figure 14).

The ASNF's roads transportation system comprises more than 700 miles of roads designed and maintained for passenger vehicles and over 2,000 miles of roads designed and maintained for high clearance vehicles. Approximately 3,000 miles of roads are in storage to be opened for specific projects (e.g., for commercial product removal) and then placed back in storage at the completion of the project; these roads are closed to all motorized travel while in storage.

Figure 14. NFSR 285 road reconstruction.

During 2015 the ASNFs, through force-account crews, contracts and vegetation treatment projects, performed routine road maintenance of 728.5 miles, improved/reconstructed 63.7 miles, and decommissioned 3 miles of unauthorized routes (Table 10).

Table 10. Road maintenance and improvement in fiscal year 2015.

Miles of Routine Road Maintenance		Miles of Road Improvement	
Level 2 Roads (High Clearance)	Level 3-5 Roads (Passenger Cars)	Level 2 Roads (High Clearance)	Level 3-5 Roads (Passenger Cars)
166.2	562.3	21.7	42.0

Figure 15. Routine road maintenance on FR 300 near Show Low, AZ.

Larger projects completed in fiscal year 2015 include the following:

- NFSR 285--Reconstruct road template, placement of aggregate surfacing stabilized with lignin for 8 miles (Figure 15).
- NFSR 26--Beaver Creek Aquatic Organism Passage: Removal of dual culverts and failing headwalls, replaced with a bottomless arched structure and stream bed restored to allow passage of all aquatic organisms (Figure 16).
- NFSR 249--Completion of 5 year project to reconstruct and place asphalt paving of NFSR 249/ FH 42FH 42, 17 miles from Alpine to Big Lake through the Federal Lands Access Program (FLAP) in cooperation with Federal Highways and Apache County.

Figure 16. Beaver Creek aquatic organism passage project.

Administrative Facilities

The ASNFs prioritizes critical health and safety issues first; second priority is to reduce deferred maintenance of administrative facilities through both large and small projects. The objective of these projects is to provide a safe, productive and pleasant environment for both employees and the public in addition to decreasing our maintenance needs through sustainable yet economical construction practices. We successfully maintained to standard 210 of our 217 administrative buildings as well as the water and wastewater systems to support the administrative sites.

In addition to routine maintenance, the following are some larger projects completed in fiscal year 2015 which allowed us to meet 210 administrative buildings maintained to standard.

- Black Mesa Ranger Station – replacement of last old furnace with a new, higher efficiency unit that. This completes the replacement of the aging and high-maintenance HVAC system.
- Disposal of two uninhabited trailer housing units, removal of a metal shed and old metal barn and a non functioning toilet building (Figure 17).
- Replacement of obsolete solar system at the Strayhorse administrative site used to house trail crews. New solar system powers the new 4 bedroom quarters building, a dining hall with kitchen and other miscellaneous buildings at the site. Previously the diesel generator was the primary power source; now it is used as a backup.

Figure 17. Black Mesa Ranger District building removal project: left—before; right--after.

Lands and Minerals

The mission of the ASNFs' lands and realty management program is to secure and protect America's public rights, title, value, and interest in its national forests and grasslands and authorize a variety of uses on those lands to meet the needs of present and future generations. Security and protection of the public's interests in National Forest System (NFS) lands is essential to the land stewardship and public trust responsibilities of the Forest Service.

Land Ownership Adjustment

A land exchange is a discretionary and voluntary real estate transaction that is considered only if it is in the public interest and is consistent with the Apache-Sitgreaves National Forests' Land Management Plan. The ASNFs have captured opportunities to consolidate land ownership patterns to meet the objectives of the Plan and to improve land management efficiency and to meet the needs of the public. Thousands of acres of NFS lands have been obtained under various land adjustment authorities.

The land exchange adjustment program has served as an effective tool to acquire desirable non-federal lands. Exchange of lands is beneficial in several ways. Exchange allows rural communities to expand and support growth, facilitates the acquisition of property with significant natural resource values (such as riparian areas, wildlife and fish habitat, archaeological sites, and rangelands), provides for expansion of recreational opportunities, and consolidates fragmented ownership patterns. Furthermore, the acquisition of non-federal lands reduces land boundary maintenance costs and rights-of-way access to severed NFS lands. The ASNFs receive proposals for private acquisition of NFS lands in exchange for non-federal lands with higher forest or resource qualities.

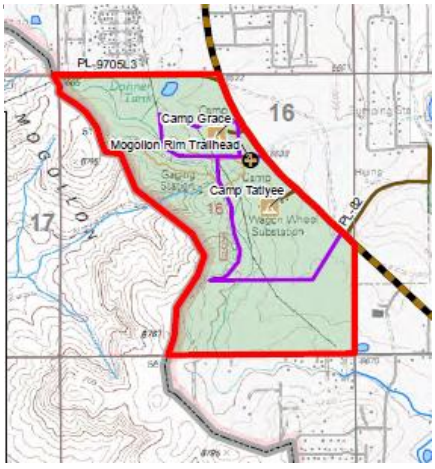

Figure 18. Federal exchange parcel.

The Forests are still actively engaged with processing the Camp Tatiyee Land Exchange, which consists of exchanging one federal (highly encumbered) and 14 non-federal parcels (Figure 18). The exchange proposes to convey ~344 acres of federal land and acquire ~1719 acres of non-federal land scattered primarily throughout southern Arizona forests. The Forests anticipate award and completion of the real estate contract

appraisal services in FY 2016 and plan to re-engage on the National Environmental Policy Act (NEPA) Environmental Impact Statement in the fourth quarter of FY 2016.

Non-recreation Special Uses

Lands special uses is also known as non-recreation special uses and is a form of appropriate authorization for use by individuals, companies, organized groups, Federal agencies, and State and local governments. The Forest continues to screen proposals to determine appropriate use of NFS lands. Approximately 33 new special use permits (SUP) were authorized and approximately 97 SUPs were administered to standard. SU authorizations authorized in FY2015 were: Cultural resources archaeological permits, weather station, site survey and testing, water transmission lines, liquid waste disposal area, irrigation ditch, natural gas pipeline, processing plant, telephone lines, etc.

Boundary and Title Management

Accurately marked boundaries enable the Forests to properly manage up to NFS land boundaries adjacent to other ownerships, reduce the number of and identify potential instances of unauthorized use, encroachment, and title conflicts, protect established land boundary markers, and clearly identify public lands for public use. The Forests marked, posted, and maintained to Forest Service standard approximately 6.3 miles of NFS land boundaries in support of planned WUI, fuels reduction, and range management. This activity was made possible in cooperation with adjacent private land owners.

Encroachment typically occurs when NFS property boundaries are not delineated and maintained to standard or because of faulty land title or erroneous surveys. At times encroachment is caused by intentional unauthorized occupation of NFS land. As a result of completing 6.3 miles of marking and posting NFS land boundaries, several new encroachments were discovered, including fence lines, water tanks, and structures (Figure 19). Such unauthorized use and occupancy is reported to the appropriate District Ranger for resolution.

Figure 19. Partially encroaching car port on NFS land.

Minerals

The Black Mesa and Lakeside Ranger Districts each processed two mineral plans of operations for locatable rare picture rock sandstone. The Forests continue to permit salable (common variety) mineral materials such as sand, gravel, cinders, and landscape rock. Primary users of salable materials included private individuals, counties, Arizona Department of Transportation, and Forest Service.

Forest Products / Resource Management

The ASNFs continued to expand the supply of wood products to households and local and regional markets. The total merchantable tree products sold was 75,962 CCF[4] of which 12,723 CCF was personal use and commercial permits primarily from firewood sales (Table 11).

[4] CCF=100 cubic feet.

Commercial timber sold in fiscal year 2015 experienced an upward trend driven by publicly offering and awarding of 4 Stewardship Integrated Resource Timber Contracts (2400-13T) at 7,429 acres.

The Four Forest Restoration Initiative (4-FRI) is a Forest Service stewardship contract which engages four national forests across northern Arizona with the task of implementing restoration treatments at the landscape level. In 2015, the ASNFs awarded the Willow task order at 1,248 acres.

Table 11. Commercial timber and personal use and commercial permits sold in fiscal year 2015.

Acres Harvested	Commercial Timber Sold (CCF)	Personal Use and Commercial Permits Sold (CCF)	Total Volume (CCF)
9,777	63, 239	12,723	75,962

Biomass/Hazardous Fuels Utilization

Biomass is generated following mechanical treatments; the Forests saw an increase of fiber removed per acre during fiscal year 2015. Approximately 131,952 green tons of biomass were removed and utilized in local facilities to make wood stove pellets and electricity. The remaining biomass was left on site to provide woody material for soil enhancement and improve watershed condition.

Reforestation and Timber Stand Improvement

A total of 14,038 acres across the ASNFs received reforestation treatments in fiscal year 2015. These comprise artificial tree planting and certification of naturally regenerated acres. The majority of this total was located on acres burned by recent and/or past wildfires on the Forests. A minimal portion of this total was on openings created by regeneration final harvest cuts on the Sitgreaves NF. Cone collections were done in species that produced cone crops, with about 72 total bushels of cones delivered to Lucky Peak Nursery in Boise, Idaho for seed extraction and storage until planned for future out-planting.

A total of 12,429 acres across the ASNFs received timber stand improvement treatments in fiscal year 2015. This total includes intermediate thinning of non-commercial-sized or understory trees, and some sanitation removal and/or pruning of disease-infected small trees in service contracts. Timber stand understory improvements also occurred as part of overall restoration treatment prescriptions on acres implemented in wood products contracts and/or timber sales in 4FRI contract task orders, from which some of this cut material was used as biomass.

Insects and Diseases

Annual aerial detection survey (ADS) flight data of recent tree damage and losses attributable to insects and other causal agents is reported using 2 primary categories: tree mortality (loss) and tree defoliation/dieback (damage). Acres of tree mortality attributed to insects only began to be detected and mapped within the 2011 Wallow Fire starting in 2013 because the first 2 years post-burn it is impossible to differentiate mortality caused by fire from other causes. In 2015, ASNFs forest-wide visible tree mortality mapped as a result of non-fire causal agents totaled over 24,740 acres. Of this number, aspen decline (mortality above and below ground) was recorded on 1,550 acres. An additional total of 9,080 acres were detected as tree damage (defoliation/crown dieback) due to insects and diseases in 2015.

Insects

Major Insect categories identified by the 2015 ADS mapping flights across the ASNFs, in order of highest acreages affected:

- Bark beetles (8 active beetle species visibly detected in numerous conifer host tree species) = 23,190 total acres, down considerably from the 2013 and 2014 total beetle acres mapped. Over 70% of conifer mortality in 2015 was detected on the Alpine RD, and more than 75% of all Douglas-fir beetle activity was seen on the Alpine RD. Mountain pine beetle and fir engraver beetle attacks decreased significantly from previous years.
- Defoliators (at least 2 active insect species visibly detected) = 1,590 acres of conifers impacted. Spruce aphid increased to over 1,360 acres seen on the Apache NF, causing severe damage to Engelmann and blue spruce, especially visible in the Hannagan area. Western rose chafer defoliated 230 acres of Gambel oak on the Black Mesa RD.

The effects of the 2011 Wallow Fire across the Apache National Forest continued to become apparent in subsequent years. Bark beetle outbreaks occurred in live trees of all conifer species because trees were weakened by the fire, as well as by persistent pathogens, overcrowded forest conditions in unburned/lightly burned areas, and prolonged drought stress.

The ASNFs again employed the use of beetle pheromones to steer adult beetles of target species away from laying eggs in key mixed-conifer forested areas critical to the local recreation economy and critical wildlife habitat. The beetles emit these natural compounds to communicate with each other by smell. After they have fully occupied a tree, one type of pheromone (repellent) tells other beetles flying through the area to avoid the tree or area because it is already full, essentially a “no vacancy” sign. Tags containing the beetle pheromones are stapled to trees in an area before the adult beetles start to fly in search of new trees to attack. This strategy can effectively protect all susceptible host trees within a given distance. Unfortunately, pheromone repellent technology does not work for the ponderosa pine beetle species. Prompt removal of beetle-infested trees (imminent mortality) from campgrounds is another important step in the overall success of beetle control efforts. In 2015, only 185 beetle-infested trees of all species were removed from numerous campsites (about 300 acres total) inside the Big Lake Recreation Complex. No other sales of specifically insect-infested trees occurred in 2015, although scattered infested trees are usually marked for removal during normal forest restoration thinning projects annually.

Pheromones pose no harm to humans or the environment when installed correctly but must be reapplied every year. Local entomologists, foresters, biologists, and recreation staff have collaborated with an Arizona-based young adult conservation corps to provide the field labor. Due to the high cost and tight timeframe to beat the beetle flight, only a limited number of key acres can be treated. In the 2015 season, 616 forested acres were successfully treated within and around developed campgrounds on the Springerville and Alpine Ranger Districts, including the popular Big Lake Recreation Complex, plus Gabaldon and Hannagan campgrounds (all important to visitors and the local economy). Likewise, 383 acres of fragmented Mexican spotted owl (MSO) habitat that survived the Wallow Fire were also treated.

Another type of beetle-produced pheromone which acts as an attractant to lure beetles into traps is being used to monitor beetle population trends during the outbreak. During the late-June 2015 peak Douglas-fir beetle (DFB) flight season at the Big Lake vicinity monitoring trap site, approximately 18,200 beetles were collected per trap in just a 2-week period (a dramatic increase of almost 2.5 times the 2014 number collected). This 2015 number was slightly less for the rest of the Wallow Fire beetle trap sites, but still a significant increase over the 2014 numbers. These numbers indicate a very large population of

beetles emerged in 2015 from trees killed in 2014, to launch new tree attacks in 2015. So to remove more DFB from attacking trees in the immediate Big Lake area, additional traps were installed there in 2015 and collected over 300,000 DFB between late-May and late-July. This extra effort is estimated to have saved about 200 large Douglas-fir trees.

In contrast, during the August 2015 peak Mountain pine beetle (MPB) flight season at trap sites across the Wallow Fire area, MPB trap catches were much lower (only about ¼ of the numbers caught in 2014). The Wallow beetle pheromone project is expected to be needed for at least another one to two years until the DFB outbreak should subside. This work substantially contributes toward the national Western Bark Beetle Initiative annual target in USFS Region-3.

Diseases

Major Disease categories identified in 2015 by various survey methods across the ASNFs were, in order of highest known occurrence:

- Dwarf mistletoes (persistent pathogens which do not spread or intensify fast enough for an annual comparison) = lightly to heavily-infected areas are common across all forest and woodland types. An estimated 50-60% of all forested acres have some level of infection. Heavy infection predisposes trees to increased bark beetle attack, poor growth and vigor, poor cone/seed production, and tree mortality. Numerous Douglas-fir trees killed in 2015 by the Douglas-fir bark beetle in several campgrounds were observed with heavy dwarf mistletoe infection.
- Ponderosa pine needle cast. A moist 2014-15 winter and wet 2015 spring likely contributed to the increase of 5,400 acres detected on the Black Mesa Ranger District (double the amount described as needle “blight” in 2014).
- Foliar rust diseases. Wet spring conditions in 2015 also promoted foliar rusts that contributed to a total of 2,230 acres of aspen and cottonwood defoliation on the Alpine, Springerville and Lakeside Ranger Districts.
- Root Diseases (also spread slowly so that overall incidence changes little from year to year) = widely scattered across aspen, mixed-conifer, spruce-fir and pine forest types. Infection centers occur in pockets and predispose afflicted trees to more rapid mortality from drought and insect attack.
- Stem Rusts, most importantly White Pine Blister Rust (WPBR, an introduced pathogen) which was first discovered on the ASNFs in 2009. In conjunction with the USFS AZ Zone Forest Health Pathologist, Northern Arizona University continued in 2015 with a WPBR mapping and plot monitoring project across the ASNFs to assess the full extent of this disease’s presence and spread in southwestern white pine. More seed cone collections from this host tree species were done as part of an ongoing Region-3 genetic WPBR resistance testing program.

Insect-disease issues are also identified and evaluated by Silviculturists during the NEPA process at the project level, and decisions regarding control measures are left to the districts in most cases. Entomologists and Pathologists with Region-3’s AZ Zone Office of Forest Health Protection are regularly consulted for assistance and recommendations.

Recreation

The Forests conducted one major campground project during 2015. Implementation monitoring of the Fools Hollow Campground shows that Forest standards are being followed during project planning and implementation. Retention Visual Quality Objectives and accessibility met the highest standards. Campsites were updated with new concrete spurs, picnic areas were improved with new fire rings, grills,

and improved parking. Eroded areas were graded and stabilized. These changes all contributed to barrier-free accessibility, visual quality, and sustainability (Figures 20-22).

Figure 20. Parking area at Fools Hollow Campground.

Figure 21. Fools Hollow Campground improvements improve access and reduce erosion.

Figure 22. New grills were installed in picnic areas.

Plan Revision

The ASNFs completed revision of their Land Management Plan during 2015. On July 30, 2015, Regional Forester Calvin Joyner signed the Record of Decision for the Apache-Sitgreaves National Forests' Final EIS and revised Land Management Plan. A Notice of Availability was published in the Federal Register on September 25, 2015, and the revised Land Management Plan for the Apache-Sitgreaves National Forests was implemented on October 25, 2015. This plan replaced the former (1987) Apache-Sitgreaves National Forests Plan. This report is therefore the final monitoring and evaluation report produced under the 1987 forest plan. Beginning in summer 2018, the Forests will publish biennial monitoring and evaluation reports that document monitoring results under the revised plan.