

# Wildlife Conservation on the Williams and Tusayan Ranger Districts (South Zone of the Kaibab National Forest)

## Accomplishment Report for Fiscal Year 2012 (October 1, 2011-September 30, 2012)

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## Population Conservation

*Sometimes it takes targeted efforts to sustain the health and diversity of wildlife on our forests and grasslands.*

### Helping Our First Breeding Bald Eagles

In the summer of 2012, the Kaibab National Forest hosted its first pair of breeding bald eagles in recorded history. One of the parents was born on the Prescott National Forest, but we do not know the origin of the other parent. The parents produced one nestling. When the eaglet prematurely left the nest, biologists placed unique-identification bands on the young bird's "legs," recorded its health and gender (it's a female!), and returned the bird to a safe location. The young bird fledged a few days later and was soon spotted several miles from its birthplace. In the future, wildlife staff will work with the Southwestern Bald Eagle Management Committee to annually monitor this nest site and potentially new nest sites. The bald eagles of the Kaibab National Forest are critical to the recovery of the breeding population of bald eagles in the Southwest: There were only 50 active breeding areas for bald eagles in the entire state of Arizona in 2012, and only 52 fledglings were produced. Bald eagles are protected under the Bald and Golden Eagle Protection Act, are a Sensitive Species on the Forest, and are central to the culture of local Tribes.



Figure 1. Wildlife Biologists of the US Forest Service and the Arizona Game and Fish Department place identification bands on the first bald eagle to fledge from the Kaibab National Forest. Although the eaglet left the nest before it was able to fly, we returned the nestling to a safe location at the top of a yellow pine. The eaglet successfully fledged a few days later and was spotted several miles from her birthplace.

### Protecting Golden Eagle Nest Areas

The Williams District obliterated one mile of old roads to protect one of the only known nest sites of golden eagles on the South Zone. Golden eagles are among the most easily disturbed bird species on the Kaibab National Forest. They are protected by the Bald and Golden Eagle Protection Act and are of exceptional importance to local Tribes. Research demonstrates that if eagles do not have a safe and quiet place to nest, then they do not feed themselves or their young as much as they normally would, and they may even abandon their nests. **Eliminating these roads not only restored nesting habitat for golden eagles; it also ensured the continued presence of this magnificent bird on the Kaibab National Forest.**

### Conserving Territories of Northern Goshawks

The Northern Goshawk is a Forest Service Sensitive Species throughout much of the country. It nests in dense forests that are dominated by large trees, which naturally occur in drainages and on north-facing slopes. **Wildlife biologists of the South Zone and the survey crew of the Four Forests Restoration Initiative discovered three new nests of Northern Goshawks on the Williams District.** These nests lied outside officially protected goshawk territories which we manage for higher densities of trees. Therefore, **wildlife staff re-delineated goshawk nest territories to conserve these newly found nest areas, and foresters revised thinning prescriptions accordingly.**

## Reintroducing Prairie Dogs, Helping the Community

Gunnison's prairie dogs are proficient diggers. They create and inhabit vast networks of underground burrows that provide a home for a variety of species such as burrowing owls, lizards, snakes, and small mammals. Their digging activity helps water filter into our aquifers, adds nutrients to the soil, and increases biodiversity. Golden eagles, ferruginous hawks, and other grassland predators of conservation concern survive by eating prairie dogs and other small mammals. Only a fraction of the historic population of Gunnison's prairie dogs remains in North America. This species is therefore of conservation concern to the Kaibab National Forest and the Arizona Game and Fish Department.

Prairie dogs are also of concern to the Williams Elementary and Middle Schools, as students have been tripping and twisting ankles over prairie dog holes for decades. **In 2012, biologists continued efforts from the previous year and relocated over 250 Gunnison's prairie dogs from the grounds of the Williams Elementary and Middle Schools to historic prairie dog colonies on the Williams and Tusayan Districts.** The Kaibab National Forest, the Arizona Game and Fish Department, and several volunteers worked together to complete this work.



Figure 2. Wildlife biologists of the Kaibab National Forest, the black-footed ferret crew of the Arizona Game and Fish Department, and several volunteers relocated more than 250 Gunnison's prairie dogs to grasslands on the Williams and Tusayan Districts in 2012.

## Habitat Conservation

*With the help of partner organizations and volunteers, we make a difference for habitat conservation.*

### Conserving Grasslands

**Fire managers applied prescribed fire to maintain over 2,800 acres of grasslands at Government Prairie on the Williams District.** Restoring and maintaining grasslands helps in many ways. Uncommon or declining wildlife such as golden eagles, pronghorn, and prairie dogs survive and reproduce with more success. Elk, deer, and livestock gain access to better forage. Communities benefit from lower fire danger and healthier watersheds.

Fire is the best way to maintain grasslands, both ecologically and economically. However, after decades of fire exclusion, many grasslands have grown thick with invading conifers. Mechanical removal of trees can help us restore grasslands to their historic, natural condition. **Wildlife biologists, rangeland managers, and fire managers thinned invading trees from 1,500 acres of historic grasslands on the Williams District, primarily in the Ida Grassland (near Potato Hill on the northern part of the District).**

This work was largely funded by the Habitat Partnership Committee of the Arizona Game and Fish Department and the Rocky Mountain Elk Foundation. **To complement these efforts, the Arizona Elk Society brought more than 75 volunteers to help restore grasslands over the course of two days, equivalent to approximately \$12,000 of volunteer labor. These hard-working volunteers made a positive impact on the ground by removing thousands of invading junipers and pines across dozens of acres of the Ida Grassland.**

Grassland restoration would not be possible without the help of our important partners in the wildlife conservation community. **In FY 2012, the Kaibab National Forest obtained \$150,000 in aid from the Arizona Game and Fish Department's Habitat Partnership Committee and Heritage Funds. These resources will ensure that both of the Forest's agra-axe machines are running full-time into Fiscal Year 2014.**

**Wildlife staff, the Arizona Game and Fish Department, and several individual volunteers removed old, down fence in a pronghorn migration corridor to the south of Bill Williams Mountain and around an old holding pen near Ham Tank.** This work will improve connectivity and facilitate better movement of pronghorn and other game species across the landscape.



Figure 3. A young volunteer recruited by the Arizona Elk Society gives a “thumbs-up” to grassland conservation on the Williams District.

## Protecting Wetlands

**Wildlife and Recreation staff worked with dozens of members of the Northern Arizona FlyCasters to repair fence around JD Dam Reservoir and Perkins Tank.** These wetlands serve as a prime spot for catch-and-release fishing and for watching wetland wildlife. The continued dedication of the Flycasters has ensured the protection of these valuable wetlands.

**Wildlife staff collaborated with the Arizona Wildlife Federation to design and place dozens of interpretive signs on fences that protect Duck and Dry Lakes. These signs will help inform Forest users about the importance of wetlands, and we hope that they will reduce attempts to cut wetland fences.** They read as follows:

“Wetlands, even seasonal ones, are very important to ducks and other special wildlife found nowhere else. Excessive grazing of grasses and forbs in and around wetlands reduces nesting and hiding cover for these important species.

This fence excludes livestock so that it cannot browse on this important vegetation. Access to the waterlot for livestock is managed through numerous gates and wildlife access is incorporated into the fence design.

*Your cooperation in not tampering with the gates or fence is greatly appreciated.”*

## Restoring Forests

Thinning, pile burning, prescribed fire, and the careful use of wildfire are the primary methods of forest restoration on the Kaibab National Forest. These activities help reverse a century of fire exclusion in our forests. They move the landscape toward an ecological state similar to that which existed prior to Euro-American settlement. Restoration increases resiliency to the forest, thereby reducing the probability of uncharacteristically severe wildfire, decreasing susceptibility for insect outbreaks and other disturbance events, and improving resilience to climate change. Most treatments took place in ponderosa pine forest, although some occurred in pinyon-juniper woodland. Species such as northern goshawk, wild turkey, elk, mule deer, Abert’s squirrel, Allen’s Lappet-Browed Bat, Grace’s warbler, Pinyon Jay, and a variety of other wildlife benefit from these efforts.

**Fire managers applied 1,160 acres of prescribed fire to forests and woodlands on the Tusayan District, and 840 acres on the Williams District.** Wildlife biologists played an active role on these fires by assisting with firing operations and providing feedback to fire managers. As a result of budget shortfalls and an especially dangerous national fire season, the Kaibab National Forest was unable to manage any lightning-caused wildfires to benefit the landscape. **Foresters thinned forest or piled woody vegetation (to be burned after “curing”) on 600 acres on the Williams District, and 260 acres on the Tusayan District. Fire managers burned piles across more than 1,000 acres of forest on the Williams District, and 50 acres on the Tusayan District.** The benefits of thinning and burning include a reduced probability of extreme wildfire; an increased growth of large trees through decreased inter-tree competition; and the conservation of large snags, pre-settlement trees, oaks, cliffrose, and down logs.

## Saving Aspen

With the exception of those that exist in rugged, steep terrain or within fences, aspen groves on the Williams Ranger District are on a trajectory to become extirpated within 70-90 years. Factors that led to the local decline of aspen include overgrazing by hoofed animals, historic fire exclusion (which has led to conifer encroachment in many aspen stands), drought, and climate change. The Kaibab National Forest has learned from experience that thinning and/or burning aspen stands alone does not allow for successful aspen regeneration. Consumption of regenerating aspen by hoofed animals poses the most immediate threat to the sustainability of this ecosystem. Therefore, we must erect protective fence to exclude ungulates from eating aspen saplings until the amount of landscape-level forage increases and/or the size of ungulate populations decreases.

**The Kaibab National Forest constructed fences to keep hoofed animals out of 10 acres of aspen clones that were at high risk of mortality. The Forest planted 1 acre of aspen saplings on the Williams District, in areas where all previously existing aspen had died. Foresters maintained fence that protects approximately 200 acres of aspen clones. Last but not least, Cub Scout Pack 140 volunteered on a sunny, winter morning to lop invading pine trees from 3 acres on Aspen Hill.**



Figure 4. Cub Scout Pack 140 enjoyed the sights and sounds of nature as they volunteered to cut invading ponderosa pine saplings from an aspen clone on the north side of Aspen Hill.

## Eradicating Noxious Weeds

Noxious weeds reduce the amount and diversity of native grasses and forbs, and they often reduce hiding cover for wildlife. Many noxious weeds are unpalatable and decrease wildlife forage. Weed eradication helps conserve a diverse and abundant understory of native species. **Botanists, rangeland managers, and wildlife biologists used herbicide and released thousands of weed-eating insects to eradicate 1,300 acres of noxious weeds on the Williams District.** Bull thistle, Dalmatian toadflax, diffuse knapweed, and Russian knapweed were the target species.

## Inventory and Monitoring

*Although the benefits of wildlife surveys are not readily visible, they are critical to designing and implementing projects for land management.*

### Mexican Spotted Owls

Wildlife staff surveyed 5 of 6 Protected Activity Centers (PACs) that occur on the Williams District, and staff detected owls in 4 PACs. Surveys were conducted for long-term monitoring. Primary risks to this federally threatened species include stand-replacing wildfire and loss of habitat from historic timber and rangeland management practices.

### Bald and Golden Eagles

Staff members from many different program areas of the Kaibab National Forest, with the help of biologists from the Hopi Tribe, conducted the annual wintering bald and golden eagle survey. We counted a total of 39 bald eagles and 5 golden eagles.

Wildlife staff surveyed 10 of 13 historic golden eagle nest sites on cliffs. Signs of territorial activity were seen at 7 sites, nesting behavior at 2 sites, and successful reproduction at 1 site. This species is especially sensitive to human disturbance, and it relies on grasslands with substantial populations of small mammals. The golden eagle remains a high priority for conservation on the Kaibab due to loss of its grassland habitat to conifer encroachment, human disturbance, and persecution of prairie dogs (one of the species' principle prey items).

### Northern Goshawks

Wildlife staff again surveyed the 15,000-acre Bill Williams Mountain Restoration project area for northern goshawks. Surveys were conducted in preparation for the design and implementation of thinning and burning in the project area. Wildlife staff confirmed goshawks both Post-Fledging Family Areas (PFAs) within the area. Northern goshawks remain of conservation concern due to risk of stand-replacing wildfire; loss of nesting habitat from historic timber, fire management, rangeland management practices, and ongoing drought.

### Peregrine Falcons

Wildlife staff surveyed 2 of 3 historic falcon eyries on the South Zone. Only 1 was occupied by a breeding pair. This recently recovered species remains of conservation concern due to threats from recreational disturbance (especially rock climbing) and collection by falconers.

### Songbirds

The Forest continued funding for the Rocky Mountain Bird Observatory to survey avian diversity, abundance, and occupancy across the South Zone. This information will help meet monitoring requirements for populations of Management Indicator Species, and it will inform regional estimates of population trends for a variety of bird species.

### Wetland Wildlife

In conjunction with the National Marsh Bird Monitoring Program, wildlife biologists monitored populations of rare wetland birds on the Williams District. Of importance, we discovered one of the only known pairs of breeding Virginia Rails to be recorded on the Kaibab National Forest. Like other wetland birds, Virginia Rails require marshy areas to forage and feed and their young. This newly discovered breeding pair exhibited territorial behavior but likely failed to reproduce, as the extremely dry early summer caused their habitat to lose all standing water.



Figure 5. Fencing efforts at Duck Lake and other wetlands provide habitat for the sora and other wetland birds of conservation concern. Excluding cattle from wetlands allows emergent vegetation to grow, which provides protective cover, foraging areas, and nesting habitat for wetland birds. Wetland conservation also benefits elk, deer, turkey, and other game species. *Photo credit: Barbara Wheeler Photography, USFWS Volunteer.*

## Volunteer Programs and Conservation Education

The South Zone hired two full-time, seasonal volunteers for twelve weeks during the 2012 field season. They primarily aided project planning by inventorying and monitoring rare wildlife species. Many of the Kaibab National Forest's achievements result from the dedication of these full-time volunteers, along with volunteers from the Arizona Elk Society, the Arizona Flycasters, and other groups (see above). **In total, wildlife conservation on the Williams and Tusayan Districts benefited from more than \$25,000 worth of volunteer labor in FY 2012.**

**Wildlife staff educated hundreds of youngsters and adults from northern Arizona about wildlife conservation.** Students at the Heritage Elementary School listened to a reading of *The Lorax*, in celebration of the Forest Service's 2012 partnership with the Ad Council. At the 21<sup>st</sup> Century Program (after-school education program) of the Williams Elementary School, students learned about grassland conservation, wildlife adaptations, and the difference between wildlife and domesticated animals. Kids who enrolled in the Senior Forestry Program of Northern Arizona University learned the basics of bird identification and went on a birding trip in the Centennial Forest. Members of the Audubon Society enjoyed the sights and sounds of migratory birds on Bill Williams Mountain and learned about the Bill Williams Mountain Restoration Project.

## Other Wildlife Accomplishments

- Wildlife staff completed the wildlife specialist's report and wildlife section of the draft Environmental Impact Statement (EIS) for the **~15,000-acre Bill Williams Mountain Restoration project**. Specialists from the South Zone's wildlife biology, botany, forestry, and fire ecology programs met with the US Fish and Wildlife Service and Arizona Game and Fish Department on several occasions. The input of these agencies helped shape the project, especially as it relates to the conservation of Mexican spotted owls and Arizona bugbane. Wildlife staff also helped at a public meeting regarding the project.
- Wildlife staff helped fulfill obligations under the National Environmental Policy Act (NEPA) and gained authorization to implement the **~15,000-acre McCracken Vegetation Management Project**.
- Wildlife staff contributed to the draft Environmental Impact Statement for the **Four Forest Restoration Initiative**.
- Wildlife staff are helping to design and complete the Environmental Assessment for the **Juan Tank Allotment Management Plan**.
- Wildlife biologists worked with foresters to create a plan to implement **wildlife-related mitigation measures for the Canyon Mine project**.
- Wildlife biologists are **leading a review of environmental analyses for grassland restoration** which will result in re-authorization of conservation of thousands of acres of grasslands.
- With the aid of the South Zone archeologist, wildlife staff **gained archeological clearance to conserve thousands of acres of grasslands**.
- Wildlife biologists and hydrologists are working with the Arizona Game and Fish Department, Bat Conservation International, and others to develop initial plans for a **project to restore Duck Lake**.
- Wildlife staff met with the Arizona Wildlife Federation to develop a proposal to improve **conservation of Scholz Lake**.
- Provided **wildlife-related clearance for various projects related to prescribed fire, fuelwood and timber harvesting, recreation, and lands and minerals management**.
- Reviewed and participated in monitoring workshop related to **Kaibab National Forest Land Management Plan**.
- Wildlife biologists and rangeland managers met with the Arizona Game and Fish Department to discuss **conservation of Sycamore Canyon and aspen groves**.
- Wildlife staff participated in an interdisciplinary meeting to improve the **botany program** on the South Zone.

## Partnership Opportunities for the Future

*Note:* All opportunities are “shovel-ready”; NEPA, archaeological, wildlife, and other clearance documents have been completed. All cost estimates are limited to those associated with on-the-ground implementation; the cost of contract administration, etc. would be covered by the Kaibab National Forest or other partners. Matching funds may be available. Please contact John DeLuca, Wildlife Biologist, for detailed grant proposals ([johndeluca@fs.fed.us](mailto:johndeluca@fs.fed.us); 928-635-5627).

- **Grassland Conservation** – Opportunities exist for volunteer groups to clip small, invading conifers with loppers, and the Kaibab National Forest has more than 30 pairs of loppers available for this purpose. Individuals or groups could also volunteer to remove fence in important wildlife migration corridors. The South Zone is seeking funds to masticate invading trees in historic grasslands that have become severely encroached with junipers and pines (to the level where skid steers with cutting heads cannot successfully restore grasslands). Although the South Zone has not yet used mastication, the cost of contracts will likely range from \$200-500/acre.
- **Wetland Protection** – Spring Valley meadow (next to Spring Valley cabin) and other small wetlands on the Williams District require fencing modifications (a thick, cable top wire) or completely new fence to keep cattle from degrading them. It costs \$6,000-\$12,000/mile of fence to complete this work.
- **Saving Aspen** – The Williams District has over 400 acres of aspen clones that are severely overgrazed by hoofed animals and require fencing as soon as possible to ensure their continued existence. It costs \$1,500-\$3,000/acre for this work.
- **Forest Restoration** – Many pine stringers and pinyon-juniper woodlands with large, old trees and other important wildlife features are cleared for thinning but will not be implemented by the Four Forests Restoration Initiative. The Williams and Tusayan Districts seek partner funds to thin these areas. Costs vary from \$100-\$200/acre. The Forest will fund wildland fire management to retreat these areas.
- **Prescribed Fire** – The South Zone has matching funds available to burn thousands of acres of forests and grasslands for the benefit of various wildlife species. Costs range from \$100-\$200/acre.