



NORTHERN  
ARIZONA  
FOREST  
FUND

Northern Arizona Forest Fund - Year in Review 2016



# NORTHERN ARIZONA FOREST FUND

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## 2016 Year in Review

**W**hile 2016 produced less than normal snowfall in the high country of northern and eastern Arizona, the Northern Arizona Forest Fund (NAFF), in just its second year of operation, tripled the number of on-the-ground restoration projects completed within the Salt and Verde River watersheds. The NAFF celebrates these accomplishments and their effective protection of the special places in Arizona where the snow falls and water supplies originate. It is this water source – derived from the headwaters of the high-elevation forests – that supports downstream communities and bustling cities within the Greater Phoenix Metropolitan area.

The successful implementation of this year's high-impact projects is a result of the many forward-thinking and generous partners supporting the NAFF and is through our valued partnership with the U.S. Forest Service (USFS) and with nonprofit stewardship organizations.

### **In 2016, the NAFF accomplished the following:**

- Completed six high-priority restoration projects,
- Added and grew relationships with 21 strategic program partners,
- Fostered two cooperative marketing campaigns, and
- Expanded working capacity of local nonprofits and contractors.

Across Arizona, National Forest lands continue to face unprecedented threats, including increased wildfire, drought, and insect infestation, among others. In 2016, the NAFF firmly established itself as an innovative funding mechanism for restoration of these land and watersheds through partnerships, investment and action. Collectively, the NAFF leverages funds for watershed and forest restoration projects on National Forest lands that would otherwise go unfunded. The successful implementation of this work fosters a renewed stewardship ethic in local and downstream communities, connects citizens to the lands they depend upon, protects clean air and water, and ensures native fish and wildlife have healthy landscapes in which to thrive.

# THE NAFF PROGRAM

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**A**s the health of forests and watersheds decline, high-severity wildfires and degraded waterways are now more of a concern than ever. The NAFF was established in partnership between the Salt River Project (SRP) and the National Forest Foundation to address declining forest health in the Salt and Verde River watersheds, which are the sources of irrigation, commercial, and municipal water supplies for millions of Arizonans. In the current era of shrinking federal budgets and increasing uses and impacts to National Forest lands, the NAFF provides a mechanism that allows local and downstream beneficiaries to invest in the lands and watersheds upon which they depend.

**The NAFF engages cities, businesses and residents of Arizona in supporting restoration projects that improve watershed conditions and support the resiliency of forests and water supplies. Thanks to generous partners, and in cooperation with the USFS and nonprofit partners, the NAFF is able to implement a diverse portfolio of on-the-ground projects that accomplish the following objectives:**

- Reducing wildfire risk through forest restoration treatments,
- Restoring stream health and wetland function by protecting and enhancing these aquatic resources,
- Improving water quality and protecting reservoir storage capacity by limiting erosion and sedimentation, and
- Improving wildlife habitat by removing invasive species and re-establishing native plants.



Contributions to the NAFF are collected by the National Forest Foundation, a congressionally chartered nonprofit organization. The NFF manages the NAFF program, coordinating directly with the USFS and allocating funds to local contractors and nonprofit partners to implement high-priority watershed restoration projects. These projects create jobs, provide volunteer opportunities, and support local conservation and stewardship groups.

NAFF projects are strategically located to maximize the benefits they provide. In some cases, NAFF projects leverage resources that allow the USFS to complete a suite of interrelated projects, thus accomplishing more restoration work at a faster pace and scale.

Several NAFF projects occur across multiple years, taking on larger-scale more long-term projects. Still other projects are stand-alone and produce immediate, direct effects that prevent future problems and avoid long-term costs. In all cases, NAFF projects are those that would otherwise be unfunded through traditional federal sources. Yet, the watershed benefits that the NAFF projects provide collectively enhance restoration work across the entire northern Arizona landscape.

In just its second year of operation, the NAFF tripled the number of projects implemented. With this success, the NAFF has been positioned as one of the most successful and innovative watershed investment models for engaging partners in watershed restoration projects in the western U.S.



In 2016, over \$490,000 was invested to complete watershed restoration projects across the Apache-Sitgreaves, Coconino, Kaibab, Prescott, and Tonto National Forests.



In 2016, the NAFF funded 200 acres of hand thinning within ponderosa pine and piñon-juniper forests on the Kaibab National Forest.



In 2016, the NAFF funded 2,668 acres of prescribed burning fuel treatments on the Coconino National Forest.

Over the last several decades, the health of forests and watersheds across the West have been devastated by an increase in high-severity wildfires that burn longer, hotter and at scales never before observed in recent history. Severely burned landscapes act as a conduit for increased runoff and erosion during post-fire precipitation events, depositing ash, silt and debris into the streams, reservoirs and canals that are a primary source of drinking water. This results in increased treatment costs and decreased storage capacity in reservoirs, which ultimately impacts everyone that relies on these water sources.

In order to address these increasing risks, NAFF projects seek to improve watershed conditions and provide increased resiliency over time. By implementing thinning and prescribed fire projects, we reduce the amount of fuel in forests and woodlands, create more open and natural forest structure, which in turn limits the potential for fire to move from the ground into the crowns or tops of trees. By stabilizing and improving drainage conditions on roads and trails, we minimize erosion and sediment moving downstream into our water supplies. And by restoring stream and wetland health, we improve the hydrologic function of the streams and tributaries that connect our water supplies and ultimately protect the quantity and quality of these resources.



## 2016 Accomplishments

The NFF implemented six priority watershed restoration projects within the Salt and Verde River watersheds.

**The 2016 projects demonstrate the high-value restoration work that can be accomplished with investments from funding partners. The restoration accomplishments in 2016 include:**

- 2,868 acres of fuel reduction projects within overgrown and fire-susceptible ponderosa pine and juniper habitats.
- 26 miles of erosion control and drainage improvements.
- 2,110 acres of stream and wetland protection.

**T**hanks to our many generous funding partners, the NAFF has expanded its protection of watersheds across National Forest lands in northern and eastern Arizona by addressing three primary watershed threats, including high-severity fires, erosion from roads and trails, and damage to wetlands and riparian areas along Arizona streams. To reduce the risk of these threats and improve watershed conditions, the NAFF funded the following types of restoration projects.

- Forest thinning and prescribed burning to protect watershed health by reducing the risk of high-severity fire.
- Road and trail improvements that improve drainage and reduce erosion and sediment loads in reservoirs and streams.
- Vegetation treatments and fencing to improve wetlands, meadows, and streams and prevent future damage.

The National Forest Foundation worked closely with the USFS and stewardship partners to complete the 2016 NAFF projects on time and within budget. In total, the NAFF program spent \$495,175 to support 2016 projects. Of that \$349,740 was expended towards direct, on-the-ground restoration activities that provide valuable watershed protection for years to come. An additional \$45,000 was spent on monitoring. Direct operational expenses, including reporting, salary and travel were \$35,847. Indirect costs associated with 2016 operations were \$64,588. All surplus funds from revenue raised in 2016 will be carried forward and invested in 2017 projects.

## Forest thinning and prescribed fire treatments

were implemented to reduce forest fuels and therefore reduce the risk of high-severity fire. The Clint's Well prescribed fire treatments on the Coconino National Forest, and the McCracken thinning project on the Kaibab National Forest helped decrease fire risk in strategic locations in the Verde River watershed.

In 2016, the NAFF conducted forest fuel reduction projects across a total of 2,868 acres, reducing high-severity fire risk.

### ● The Clint's Well & Stoneman Lake Watershed Health and Prescribed Fire Forest Restoration Project

sits at the top of the Mogollon Rim at the southern edge of North America's largest ponderosa pine forest. This important fuels treatment work is part of the larger Upper Beaver Creek Forest Health Project, which encompasses over 48,000 acres on the Coconino National Forest. The long-term goals of the Upper Beaver Creek project include forest thinning activities on approximately 16,000 acres and prescribed burning over about 44,000 acres.



In 2016, the NAFF supported prescribed burning activities on approximately 2,668 acres, as a part of this larger program area. This is the second consecutive year that NAFF has supported prescribed burning treatments in the Upper Beaver Creek drainage. Funding for this prescribed fire treatment allowed the Forest Service to allocate additional resources to a hand-thinning project at Stoneman Lake, which resulted in 26 acres of improved forest conditions in Mexican Spotted Owl habitat. These treatments reduce the threat of unnaturally severe wildfire in an area of the watershed that has high visitation and contains critical habitat for sensitive and endangered wildlife. Prescribed burning and hand thinning of overgrown ponderosa pine forests reduces the threat of catastrophic fire and improves overall watershed function. Restoration also enables introduction of a more natural fire regime to the system, and protects habitat for important Mexican Spotted Owl activity centers in the upper Verde River watershed.

### Prescribed burning and hand thinning successfully accomplished the following objectives:

- Removed ground fuels,
- Raised crown heights of large trees and reduced the risk of devastating crown fires, and
- Reduced the number and density of small diameter trees.

### This work improves the forest resiliency and reduces the risk of uncharacteristically large and severe wildfires, thus providing the following benefits:

- Restores the health and diversity of forests in the Upper Beaver Creek watershed,
- Reduces catastrophic fire risk in the watershed and subsequent erosion and sedimentation that follows post-fire runoff events,
- Protects rural communities and important infrastructure, and
- Protects the Mexican Spotted Owl nesting and foraging habitat, and improves habitat for the Northern Goshawk and Tassel-Eared Squirrels.



● **The McCracken Woodland Health and Habitat Improvement Project** sits within the piñon-juniper woodlands of the Kaibab National Forest, approximately 10 miles south of Williams, AZ. This project is part of a larger McCracken forest restoration project, which aims to reduce high-severity fire risk across 17,000 acres on the Kaibab National Forest through the use of forest thinning activities and prescribed burning.

The McCracken Woodland Health project is designed to reduce the threat of unnaturally severe wildfire, increase ecosystem diversity, and improve wildlife habitat in an area that serves as an important wildlife travel corridor. The NAFF program supported forest thinning activities on approximately 200 acres of difficult to access woodland terrain on the Williams District of the Kaibab National Forest, restoring open spaces that support the growth of wildlife forage and reducing unnatural fuel loads that present severe wildfire risks in the upper Verde River watershed.

### Hand crews successfully accomplished the following objectives:

- Removed ground fuels,
- Created more space between trees,
- Reduced the number and density of small diameter trees, and
- Restored open areas.

### This work improves the forest resiliency and reduces the risk of uncharacteristically large and severe wildfires, thus providing the following benefits:

- Improves the diversity of forest vegetation, allowing for regrowth of understory grasses, forbs and shrubs that serve as forage for wildlife species, such as pronghorn antelope, deer, and elk,
- Returns natural, low-intensity fire regimes back to the forest,
- Reduces fire risk in the watershed and subsequent erosion and sedimentation that follows post-fire runoff events, and
- Protects rural communities and important infrastructure.

## Erosion Control

**E**rosion control projects are designed to improve drainage from the surfaces of roads and trails and prevent large volumes of sediment from polluting streams and rivers. These projects improve water quality and protect storage capacity in nearby reservoirs. Properly maintained trails and roads also ensure safe access to public lands.

 In 2016, the NAFF funded the clearing of culverts and ditches of sediment and debris along 11 miles of road.



● **The Oak Creek Erosion Control Project—Schnebly Hill Road** is located near Sedona, AZ. Oak Creek is an Outstanding Arizona Water, designated by Arizona’s Department of Environmental Quality, that is valued for its beauty, recreational opportunities, and tremendous ecological value. With its headwaters forming on the Coconino National Forest just south of Flagstaff, Oak Creek flows through Sedona and Arizona’s red rock country and is a major tributary to the Verde River, and a vital water supply to the Phoenix metropolitan area. Unfortunately, Oak Creek faces water quality challenges associated with increasing sedimentation and turbidity levels from the network of Forest Service roads on the Red Rock Ranger District accessed by thousands of visitors a year. Local stakeholders and the Coconino National Forest have identified priority erosion and sediment control projects in the Oak Creek watershed. The long-term goal of this project is to improve road and trail systems and minimize the release of high concentrations of sediment that are negatively impacting Oak Creek’s water quality.

As part of a multi-year effort, the Schnebly Hill Road Project will reduce erosion on one of the most heavily used four-wheel drive roads in the Coconino National Forest. Schnebly Hill Road winds through spectacularly diverse ecosystems and offers sweeping views of Sedona’s famous red rock formations. For these reasons the road is popular among four-wheel drive enthusiasts and off road tour companies. However, its popularity and inadequate funding for maintenance have led to the deterioration of the road surface and the drainage system resulting in increased erosion.

In 2016, the NAFF funded a youth crew from the Arizona Conservation Corps to address erosion and sedimentation problems by clearing a subset of culverts and ditches of years of sediment and debris buildup along 11 miles of the road. The work is a first step to reducing the movement of sediment into Oak Creek. Reduced erosion of the road will improve water quality, benefiting aquatic ecosystems and downstream users alike. The second and final stage of the Schnebly Hill Road project will repair damaged infrastructure and redesign problematic drainage features and will be completed in 2017. Together these projects strike a balance between recreational opportunities that are important to the local economy and watershed health within the Verde Watershed.

### Sediment and erosion control activities included:

- Improved drainage off roadways,
- Improved culvert drainage capacity, and
- Improved sediment catchment off roadways to minimize downstream transport into streams and washes.



### This work provides the following benefits:

- Minimizes water quality impacts to Oak Creek and the Verde River, including the threat and spread of E. Coli outbreaks in Oak Creek, which are exacerbated by sedimentation,
- Protects Verde River reservoir storage capacity by reducing sedimentation,
- Protects aquatic ecosystems and downstream water users, and
- Improves existing road conditions, increasing safety and recreation values, while reducing impacts to nearby streams.





In 2016, the NAFF funded erosion control and drainage improvements on 26 miles of trails and roads on the Coconino and Tonto National Forests.



● **The West Pinto Trail Rehabilitation and Erosion Control Project** is located just east of Superior, AZ and is a popular recreation destination on the Tonto National Forest. Miles of hiking and equestrian trails in this area allow access to the Eastern Superstition Wilderness. After years of increasing recreational traffic and deferred maintenance, significant erosion and sedimentation is causing costly infrastructure and water quality problems. The West Pinto Creek project is designed to rehabilitate and improve drainage characteristics and restore ecosystems damaged by erosion caused by the overuse of trails in the West Pinto Creek area.

This project is part of an important effort to reduce erosion on more than 40 miles of trails throughout the Tonto National Forest.

In 2016, the NAFF provided funding to the Arizona Conservation Corps to complete 15 miles of trails improvement work. This work reduces erosion from the trail system and prevents sediment from heading directly downstream to Pinto Creek and into Roosevelt Lake—a major water storage reservoir for downstream cities and communities.



**Trail improvement and sediment and erosion control activities included:**

- Restored trail design and improved drainage characteristics,
- Minimized high-velocity runoff from steep trail sections, and
- Mulched and covered unauthorized trails to ensure hikers remain on the primary trail and discourage the creation of secondary trails that exacerbate erosion.

**This work provides the following benefits:**

- Reduces erosion and sedimentation into West Pinto Creek and into Roosevelt Lake, a water storage reservoir within the Salt River watershed for the downstream Phoenix-area cities, and
- Improves access and users' recreation experiences.

## 12 Stream and Meadow Restoration

**S**tream and meadow restoration projects help protect some of the most critical areas in a watershed. Stream banks and corridors, also known as riparian areas, along with wetland meadows have unique vegetation and soil types that regulate stream flow by soaking up and storing water and then releasing it steadily over time. This helps prevent flooding and erosion during spring runoff and storm events. These ecosystems also provide critical habitat to wildlife, and the riparian vegetation also helps keep aquatic stream habitats shaded from direct sun.

Riparian areas and meadows are sensitive to encroaching vegetation and non-native species, as well as disturbance from wildlife, livestock and humans. Often the most effective way to protect these special areas is to reduce tree and shrub encroachment into meadows and to prevent trampling, disturbance and grazing of vegetation. Replanting native vegetation is another important technique for restoring these areas.

In 2016, the NAFF protected 2,110 acres of riparian areas and meadows with repairs to boundary fencelines and vegetation restoration projects.



● **The Red Flat Meadow Restoration and Sediment Reduction Project** sits approximately 10 miles northwest of Cottonwood, AZ on the lower north slope of Mingus Mountain, just four miles south of the Verde River. The project includes a comprehensive suite of watershed improvement activities that are designed to restore a natural meadow and reduce severe erosion in the headwaters of the Verde River. Tree encroachment and erosion caused by the construction and design of an historic road that once served as the main route between Jerome and Perkinsville plague this portion of the Verde River watershed. In 2016, the NAFF supported a number of watershed improvement activities in the Red Flat area, including grassland restoration activities that removed juniper trees encroaching on approximately 110 acres of the natural meadow, treatment of noxious weeds, and implementation of erosion control measures and gully stabilization activities that will reduce soil and sediment movement into the nearby Verde River.

### Meadow restoration, sediment and erosion control activities included:

- Reduced encroaching junipers on 110 acres, restoring meadow habitat and open space,
- Reseeded decommissioned road to encourage return of native plants,
- Fenced extensions to protect restored meadow,
- Treated noxious weeds, and
- Installed sedimentation traps and gully stabilization.

### This work provides the following benefits:

- Restores meadow habitats that allow for growth of native grasses, forbs and shrubs that will provide groundcover necessary to stabilize the area's highly erosive soils.
- Increases ground cover to provide important forage and cover for wildlife species, such as deer, wild turkey and quail, and
- Protects aquatic ecosystems, benefitting downstream water users and Verde River reservoir storage capacity by reducing sedimentation.



## ● The Black River Stream and Riparian Protection Project

extends along the north- south border between the Apache-Sitgreaves National Forest and the White Mountain Apache Reservation, approximately 20 miles south of Greer, AZ. This sensitive area was vulnerable to trampling by trespass livestock and wildlife. The boundary fence between the USFS and tribal lands has been in disrepair since the Wallow Fire destroyed it in 2011.

Fences are critical infrastructure for allowing grazing and sensitive riparian areas to coexist. The Black River Stream and Riparian Protection Project reconstructed four miles of fence line along the Apache-Sitgreaves National Forest and the White Mountain Apache Reservation property boundary.

The reconstructed fence now protects about 2,000 acres of the stream and riparian habitat from unintended trampling and riparian vegetation disturbance. This in turn will help restore riparian vegetation, improve water quality, and avoid further degradation in a headwater stream of the Black River. Protecting riparian areas in the headwaters of the Black River has the additional benefit of protecting critical habitat for sensitive species like Apache Trout and the New Mexico Jumping Mouse.

## Riparian protection activities included:

- Constructed four miles of fence through dense and hard to access forested landscape,
- Removed damaged fencing, and
- Felled dead hazard trees near fence line, preventing future damage to boundary fence.

## This work provides the following benefits:

- Protects over 2,000 acres of stream and riparian habitat from unintended trampling of trespass livestock,
- Protects habitat for threatened species, such as Apache Trout, New Mexico Meadow Jumping Mouse, and other wildlife species, and
- Prevents impacts to riparian vegetation and stream banks, reducing erosion and sedimentation into the Black River and its tributaries, improving overall water quality.





 In 2016, the NAFF funded 2,110 acres of stream and wetland protection on the Apache-Sitgreaves and Prescott National Forests.



## Cumulative Results to Date

The National Forest Foundation has successfully implemented eight high-priority NAFF watershed restoration projects since its first year in 2015. NAFF projects have been completed across all five national forests of northern Arizona, protecting tributaries of the Salt and Verde Rivers. The restoration accomplishments for 2015 and 2016 include:

- 6,608 acres of fuels reduction projects within ponderosa pine and piñon-juniper forests on the Coconino and Kaibab National Forests,
- 57 miles of erosion control and drainage improvements along roads and trails on the Coconino and Tonto National Forests, and
- 2,110 acres of stream and wetland protection on the Apache-Sitgreaves and Prescott National Forests.

## Building Local Capacity

An added value that NAFF brings, in addition to the on-the-ground benefits of restoration and water protection, is the community capacity built through working with local contractors and nonprofit organizations to help design and implement the projects and subsequent monitoring. In this way, the NAFF maximizes the investments from funding partners by providing grants or contracts to working professionals that have knowledge and experience completing restoration projects in Arizona. Since the NAFF was launched, the National Forest Foundation has provided strategic grants to four local nonprofit organizations and an additional four regional contractors to complete the project tasks. The NAFF is proud to add jobs and build capacity within Arizona and within local communities.

“We believe one of the best ways to enhance forest health is to engage local communities, business partners, and individuals in a hands-on experience in the forest.”

—Charlie Ester, SRP Surface Water Resources Manager.

## Monitoring Results to Date

The NAFF is also dedicated to ensuring that these projects make long-lasting, positive impacts on watershed health. The NAFF works with the NAFF advisory board, the USFS, and local nonprofits to determine appropriate metrics of success and methods for measuring that success. Monitoring for the FY2015 Upper Beaver Creek Forest Restoration project has been completed while monitoring of the Oak Creek Erosion Control Project is underway. Monitoring plans for FY2016 are currently being developed and implemented.

## Oak Creek Erosion Control Project (FY2015 and FY2016)

Photo point monitoring and a Water Erosion Prediction Project model are being explored as tandem monitoring approaches for assessing effectiveness of erosion control work in both FY2015 and FY2016. Initial results from monitoring of this project are expected by Fall 2017.

## Upper Beaver Creek Forest Restoration (FY2015)

In 2016, the NAFF began monitoring activities for the FY2015 Upper Beaver Creek Forest Restoration Project to evaluate the benefits of minimizing fire risk through mechanical treatments and prescribed fire. Working with Conservation Science Partners, a monitoring protocol was developed for assessing the effectiveness of using prescribed fire for reducing high-severity fire risk.

The comparison of the forest characteristics before and after treatment demonstrated that the prescribed burn reduced high-severity fire risk. Prescribed fire treatments created measurable reduction in two key variables that control fire behavior: canopy cover and fuel loading. Canopy cover, which is measured as the percentage of ground covered by the branches and leaves of trees, was reduced by 15%. Fuel loading, a measure of flammable material lying on the ground, was reduced by 27% due to prescribed fire treatments. These changes in forest composition and structure reduce the risk of high-severity fire in this area.



In 2016, fuel loading, a measure of flammable material lying on the ground, was reduced by 27% due to prescribed fire treatments funded by the NAFF.

# IMPLEMENTING 2017 PROJECTS

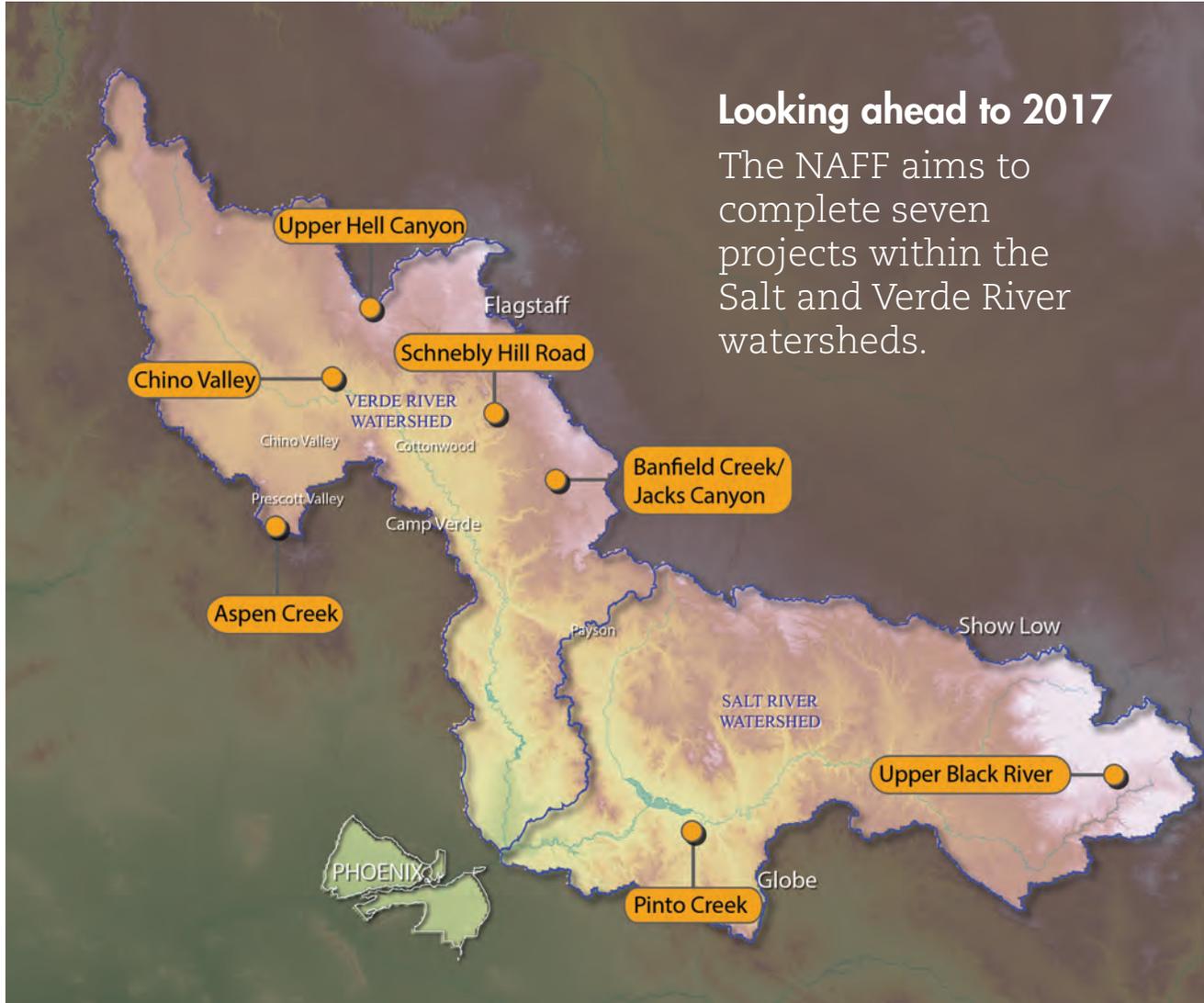
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**P**lanning and preparation are critical to the sustained protection of one of Arizona's most valuable resources, its watersheds. In 2017, the NAFF aims to complete seven projects across the five National Forests in northern Arizona. The seven projects identified by the USFS, and approved by the NAFF advisory board, remain focused on addressing the most pressing threats, high-severity fire risk, erosion, and stream and meadow degradation.

**With the continued support from strategic funding partners across the state, these projects will accomplish the following:**

- Reduce high-severity fire risk on an additional 4,220 acres of over-stocked forests,
- Improve an additional 37 miles of trails and roads, and
- Repair four miles of fence, protecting an additional 200 acres of important riparian headwater habitat.

The direct cost of completing these projects is estimated at \$850,000, although the immediate and long-term benefits of a sustainable long-term source of clean water will be invaluable.



### Looking ahead to 2017

The NAFF aims to complete seven projects within the Salt and Verde River watersheds.



Reduce high-severity fire risk on an additional 4,220 acres of over-stocked forests.



Improve an additional 37 miles of trails and roads.



Repair four miles of fence protecting an additional 200 acres of important riparian headwater habitat.



## High-Severity Fire Risk Reduction

● **The Upper Hell Canyon Forest and Watershed Health Project** is located on the south side of Bill Williams Mountain, a prominent, high-elevation peak above Williams, along the Mogollon Rim on the Kaibab National Forest.

The canyon is located within a heavily forested landscape, which is the primary watershed for the City of Williams and a major source of water for the Verde River headwaters. The dense forest in this canyon poses significant risk of high-severity wildfire that could adversely affect the City of Williams, its municipal water supply, and the health of the Verde River.

In 2017, the NAFF will support high-priority forest thinning activities on approximately 70 acres of forested land within and around Upper Hell Canyon as part of a larger forest health project known as the Bill Williams Mountain Restoration Project area. This work will reduce tree densities near the top of the Upper Hell Canyon watershed, improving forest and watershed health and reducing the risk of unnaturally severe wildfire. In addition, this project will protect valuable Mexican Spotted Owl nesting and roosting habitat and local seeps and springs that are critical habitat for Arizona Bugbane, a rare and endemic plant.

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● **The Jacks Canyon and Banfield Spring Forest Health Project** sits in the ponderosa pine forests along the Mogollon Rim on the Coconino National Forest, southeast of Flagstaff. The project is part of the larger Upper Beaver Creek Forest Health Project, which encompasses over 48,000 acres on the Coconino National Forest. For the last two years, the NAFF has supported projects that improved thousands of acres within the Upper Beaver Creek watershed restoration project.

In 2017, the NAFF will continue to support these valuable treatments by investing in 4,000 acres of prescribed burning activities near Banfield Spring and Jacks Canyon. By treating ponderosa pine forests with low-intensity, prescribed fire, these projects are expected to reduce the threat of unnaturally severe wildfire in the watershed that can contribute large amounts of sediment, debris and ash into local water supplies. These activities will also improve valuable wildlife habitat, for species such as Mexican Spotted Owls, Northern Goshawks, Tassel-Eared Squirrels, song birds, deer, elk and other species.

● **The Aspen Creek Watershed Health and Aspen Restoration Project**

is located just southwest of the City of Prescott, in the headwaters of Aspen Creek, a tributary of Granite Creek and the Upper Verde River. Conifer tree encroachment due to fire suppression has increased the risk of high-severity wildfires in this area and has impacted the rare high-elevation aspen community.

Aspen stands are a rare and critical habitat type on the Prescott National Forest that add unique diversity to a pine-and chaparral-dominated ecosystem. Maintaining and protecting these aspen and ponderosa pine forests also improves wildlife habitat especially important for migratory birds, mule deer and wild turkey.

In 2017, the NAFF will support hand-thinning activities across approximately 150 acres of aspen and surrounding pine forests, reducing the threat of unnaturally severe wildfire in surrounding forests, while restoring a unique aspen ecosystem. Reducing the risk of high-severity fire also protects the watershed, local residents' homes and critical infrastructure. These activities will encourage aspen regeneration and maintain healthy, multi-generational aspen forests, important for the unique ecological characteristics and continued recreational enjoyment. Additional thinning activities in surrounding ponderosa pine forests will help reduce high-severity fire in the surrounding forest.



## Erosion Control

● **The West Pinto Trail Improvement Project** caps off a two-year project of trail rehabilitation and erosion reduction along a total of 41 miles of trail. In 2017, the NAFF will fund the final 26 miles of trail infrastructure improvements. These activities reduce erosion and sedimentation into nearby streams that enter the Salt River while also improving access and users' recreation experiences.

West Pinto Creek, just east of Superior, is a popular recreation destination on the Tonto National Forest. Miles of hiking and equestrian trails in this area allow access to beautiful scenery and the Eastern Superstition Wilderness, but after years of increasing recreational traffic and deferred maintenance, significant erosion and sedimentation is causing increasing management concerns. This project, which was originally supported by the NAFF in 2016, is part of a multi-year effort to reduce erosion from trail networks throughout the area. Degraded trails are problematic because they channelize runoff from heavy rains, causing excessive flows that cut through highly erosive soils and deposit unprecedented sediment loads in nearby streams and creeks. Sediment deposits from these trails flow into West Pinto Creek and Haunted Creek, direct tributaries of Pinto Creek, which drains directly into Roosevelt Lake Reservoir.

In 2017, the NAFF will support the implementation of activities that will reduce erosion and sediment runoff along approximately 26 miles of trails in the West Pinto Creek area of the Salt River watershed, completing efforts to prevent excessive erosion in this popular hiking area.



These activities will not only reduce erosion and sedimentation into nearby Oak Creek and the Verde River, they will also reduce the threat and spread of E. Coli outbreaks in Oak Creek.

● **The Oak Creek Schnebly Hill Road Project** enters the final phase of erosion control in 2017, completing the largest component of the comprehensive effort to reduce sedimentation into Oak Creek. The work will rehabilitate existing drainage infrastructure and install new, low maintenance erosion prevention features along Schnebly Hill Road, one of the most utilized roads for jeep tour operators, and visitors to the area. These activities will help prevent sediment from reaching Oak Creek, while improving recreational access on the heavily traveled forest road on the Coconino National Forest.

The Schnebly Hill Road portion of the Oak Creek Erosion Control Project is an important component of the larger effort to reduce sedimentation into Oak Creek. Initially supported by the NAFF in 2016, investment in this project will continue in 2017, supporting road improvement and road drainage features along an 11-mile stretch of the Schnebly Hill Road. These activities will not only reduce erosion and sedimentation into nearby Oak Creek and the Verde River, they will also reduce the threat and spread of E. Coli outbreaks in Oak Creek, which is exacerbated by sedimentation, while improving access and users' recreation experiences.





## Stream and Meadow Restoration

● **The Black River Headwaters Wetland Protection Project** is located on the Apache-Sitgreaves National Forest approximately 20 miles south of Greer. Based on the successful rebuilding of a four-mile section of Apache-Sitgreaves National Forest boundary fence in 2016, the NAFF will expand its activities in this important watershed by making additional investments to protect sensitive wetland and riparian ecosystems through vital fencing exclosures near two tributaries of the Black River in 2017. The exclosures will protect 200 acres of wetland habitats from unintended trampling of vegetation and water quality degradation, improving aquatic stream function on an abandoned grazing allotment. These measures will also protect critical habitat for threatened species, such as Apache Trout and New Mexico Meadow Jumping Mouse.

In 2017, the NAFF will support an additional four miles of fence repairs, protecting sensitive wetland and riparian habitat along Wildcat and Boggy Creeks, important tributaries of the Black River.



 Exclosures will protect habitat for threatened species such as the Apache Trout and improve condition and function of headwater streams and wetlands.



● **The Chino Valley Grassland Restoration and Erosion Control Project** will reduce excessive soil erosion and sedimentation into tributaries of the Verde River, while improving grassland habitat, forage, and connectivity for pronghorn antelope and deer. This will be achieved by thinning juniper trees to rejuvenate grasslands, increase vegetation diversity, boost precipitation infiltration and reduce erosion.

The Chino Valley Grassland Restoration and Erosion Control Project sits in the Upper Verde River watershed, less than half a mile from the Verde River, near the small community of Drake. The project aims to restore some of Arizona's most important grassland ecosystems and improve hydrologic function in the headwaters of the Verde River. Grasslands encompass a large portion of the Prescott National Forest and are vital to the area's ecology. Grasslands slow water runoff by soaking up and storing precipitation and also serve as vital habitat corridors for the region's wildlife.

In 2017, the NAFF will support woodland thinning activities to remove juniper trees encroaching on approximately 350 acres of native grasslands. Restoring grassland improves wildlife habitat; specifically, this project will improve habitat for mule deer and pronghorn that use this area as a winter migration corridor and for birds of prey like the American Kestrel, Red-tail hawks, and Northern Harriers that rely on grasslands as foraging habitat.

## 26 Building Partnerships and Capacity

### Volunteer Opportunities

In 2016, the NAFF program helped connect Arizonans to their watersheds and public lands through hands-on stewardship opportunities.

The Oak Creek Grassland Restoration project united 27 volunteers from SanTan Brewing Company, Pink Jeep Tours, Nackard Beverages and Salt River Project for a Friends of the Forest® volunteer day. The National Forest Foundation, USFS and the Oak Creek Watershed Council worked with volunteers to improve and restore vegetation on 6.4 acres of disturbed land. This project will help reduce erosion into Oak Creek, a popular National Forest recreation area and an important riparian ecosystem.

In 2017, NAFF and its local partners will coordinate additional volunteer opportunities across northern Arizona's National Forests. **If your business or organization is interested in hosting or participating in a NAFF volunteer event, please contact Rebecca Davidson at [rdavidson@nationalforests.org](mailto:rdavidson@nationalforests.org) or (720) 749-9008.**



“ We all enjoy recreating in Arizona’s National Forests, so giving back by volunteering alongside my family, my co-workers, and our business partners to help our National Forests makes me proud to be an Arizonan.”

—Matt Neuman,  
SanTan Brewing Company

## Strategic Funding Partners

Financial and in-kind contributions from 21 strategic partners made the NAFF's 2016 watershed restoration goals a reality. The NAFF's partners also helped raise public awareness of the program, attracted new funders and provided volunteers for projects. The diverse array of partners includes municipalities, local businesses, foundations, and individual donors. The breadth of interests represented among the NAFF's strategic partners is indicative of the importance of watershed health to a diverse public and business community.

“ Water is the lifeblood of Phoenix's economy. Investing in the stewardship of our watersheds is vital to maintaining sustainable and resilient water supplies. The Northern Arizona Forest Fund brings cities, businesses and individuals together with nonprofits and the Forest Service to keep our upstream water supplies healthy and functioning. ”

—Phoenix Mayor Greg Stanton



## A Municipal Vision for Headwater Protection

In 2016 and into 2017, five cities within the Salt River Valley have made a strategic decision to invest in the watersheds that provide the water resources for the residents and businesses that call those cities home. Recognizing that water derived from the Salt and Verde watersheds is a vital supply within city water portfolios and that improving resiliency and function of watersheds is necessary to ensure availability of clean, reliable water, cities are stepping up to protect the headwaters through the NAFF's high-priority restoration projects.

Supporting the NAFF through City Council-approved investments is innovative and exemplary in its effectiveness for improving the watersheds upon which cities depend. Together, these cities are making headlines and carving a new path forward for collaborative stewardship and water source protection.

 The breadth of interests represented among the NAFF's strategic partners is indicative of the importance of watershed health.

## 28 Cooperative Marketing

Using its strategic partnerships, the NAFF has seized unique opportunities to increase public awareness and raise funds for restoring northern Arizona's National Forest watersheds. As part of this approach, the National Forest Foundation partnered on two exciting cooperative marketing campaigns promoting the NAFF program.

### SanTan Brewing Company and Crescent Crown Distributing

helped launch the "Tap to Top" campaign in 2016. "Tap to Top" is going strong and continues to highlight the connection between healthy forests and the need for a clean and reliable source of water for Phoenix metro-area businesses.

Through the support of SanTan Brewing Company, additional businesses have stepped up to participate in the "Tap to Top" efforts. SanTan also promotes the NAFF through supermarkets where its beer is distributed, raising dollars for cases sold. SanTan provides additional outreach for the NAFF through a variety of events and specific promotions across Arizona. SanTan has also put their efforts to work on the ground during our Volunteer Day in Oak Creek.



“ At SanTan Brewing Company, we know that great water helps us make great beer, so we are excited to be a part of the efforts to protect our watersheds. ”

—Matt Neuman,  
SanTan Brewing Company

**Pink Jeep Tours** is sharing their passion for the outdoors with peers, clients, and the community of Sedona where they base a portion of operations. As a major tour operator in the Sedona area, they understand that restoration and maintenance of roads and trails, which minimizes sedimentation and erosion, helps bolster their business into the future. Through an innovative customer donation program, a \$1 voluntary donation can be added to a customer's bill when booking a Pink Jeep Tour. At the time of booking, customers learn about the NAFF and the value of protecting watersheds and the local environment. In addition, tour guides provide on-site and in-context information for customers about protecting and caring for the public lands surrounding Sedona. The collective support through voluntary customer donations increases awareness and provides substantial benefits to implementing work in the Sedona area, in particular on the famous Schnebly Hill Road within the Oak Creek Watershed Restoration project area.

“ It's our dedication as an organization to give back to the environment. To have the opportunity to partner with other Arizona-based companies who share in our reverence for the National Forest is truly special. ”

—Tim Miller, CEO, Pink Jeep Tours



Looking forward, the NAFF will continue to seek opportunities to highlight the success of its projects and to connect Arizonans with their watersheds. Through educational videos, public presentations, and public outreach events, the NAFF celebrates its successes with its funding partners, creating a positive, vibrant image that will continue to attract other cities, counties, business, and individuals to support this effort.

The NAFF's current strategic partners include:



City of Phoenix



The NAFF thanks USFS and SRP for supplying the bulk of the photography for this report.



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