

## Narrative Summary of Final Report for Greater Hart Prairie Aspen Protection Project

### **Project objectives and needs addressed**

Aspen stands, a natural component of the forest, contribute immense biological diversity and scenic beauty to the Coconino National Forest (CNF). But aspen stands across the forest are dying from drought, insects, and disease. Regeneration from the roots is failing at the sapling stage. To keep aspen on the landscape, we need to protect young aspen.

Although aspen stands have been in decline for the past fifty years, the pace has accelerated greatly in the last decade. Broadly speaking, persistent drought weakens the trees, and then insects and disease kill them. The clone sends up suckers from the still-living roots. This valiant attempt at regeneration fails because the young shoots and saplings are heavily browsed by elk, deer, and livestock.

If an aspen stand is surrounded by a high fence—an *exclosure* that excludes large browsing animals—regeneration from the roots is usually extremely successful. Experience implies that the fences need to remain in place for a total time of 20-30 years (or more).

Friends of Northern Arizona Forests (FoNAF) requested start-up funds to initiate a long-term commitment to erecting, improving, protecting, and maintaining exclosure fences in the greater Hart Prairie area.

The greater Hart Prairie area lies 15 miles northwest of Flagstaff, Arizona, on the Peaks Ranger District of the CNF. Route 180, the highway from Flagstaff to the Grand Canyon, bisects the area as the road passes many aspen stands—now dying—on the high ground (8000') immediately west of the San Francisco Peaks. The project focused on selected stands of young aspen within approximately 25 square miles of aspen and conifer forest in a highly scenic and heavily visited area.

### **Methods employed and basic timeline**

Beginning in the 1980s, the Forest Service constructed 26 exclosures in the greater Hart Prairie area. When FoNAF's grant period commenced—1 May 2010—virtually all of those exclosures were dysfunctional: elk and deer could enter whenever they wanted to, typically by hopping over sagging segments of the fence. The photo inserted here shows the condition of exclosure #21 in March 2010. The fence has sagged well below the tops of the T-posts, which themselves are too short for the job that they are intended to perform. Elk and deer could easily hop into the exclosure.



FoNAF has adopted 13 of the exclosures in the greater Hart Prairie area. That statement means that we monitor the condition of the exclosures and make repairs—both minor and major—so that the exclosures will serve their purpose of excluding elk, deer, and livestock. During the period May through November, FoNAF organized five workdays—open to the public and well-publicized—to repair its exclosures plus two other large exclosures in the area. Simultaneously, a group of experienced FoNAF volunteers made nineteen separate trips to work on the exclosures. The photo inserted below illustrates how that group raised the fence on the portion of exclosure #21 shown earlier. The tallest green T-post stands 8' above the soil and shows that the fence itself has been raised to a height of 7'. (The tallest T-post and the wooden stays were purchased with money from the NFF grant.)



Between May first and the middle of November, FoNAF restored 12 exclosures to a functional state. That number includes two exclosures that were adopted by individuals or organizations outside of FoNAF; one of the exclosures was especially large, having a perimeter of more than a mile. Altogether, FoNAF (with the assistance of the public on five public workdays) raised the fence on 4.8 miles of fence in the greater Hart Prairie area.

(Of the remaining three exclosures that FoNAF adopted, one was repaired before the grant period began, one was judged to be in acceptable condition, and the Forest Service decided—provisionally—to decommission the third. Thus FoNAF has all of its exclosures up to standard.)

In our grant proposal, FoNAF noted that people object to fences on national forests and will cut them unless they are given a good reason to leave the fences intact. Cutting fences that protect young aspen has been especially common within the Route 180 corridor that bisects the greater Hart Prairie area. This is not the place to point a finger at a particular human group. Moreover, there is evidence that more than one social group is responsible.

Explaining why the fences have been erected will stop some would-be fence cutters. FoNAF proposed to place one sign every 100 yards along the perimeter of an exclosure. To ensure visibility no matter how someone walks up to the exclosure, even small exclosures would have a minimum of three signs. With grant money from NFF, FoNAF purchased signs of “license plate” size on a durable aluminum substrate. The photo inserted here exhibits a sign in

place on enclosure #21.



FoNAF had secured endorsements of these signs from the Arizona Game & Fish Department and the Coconino Sportsmen. Please note their logos as well as the logos of NFF and NAFSR.

All told, 151 of these “Aspen Protection” signs have been hung on functionally sound enclosures in the greater Hart Prairie area.

(A few enclosures, adopted by other organizations, have not yet been restored to functional status. FoNAF expects to assist those other organizations in calendar 2011 to get their enclosures up to standard. We have a few signs in reserve to hang on those enclosures once they have been repaired. In our view, it would be counter-productive to ask people to “leave intact” fences that manifestly are not intact.)

### Some quantitative results

- 73 volunteers participated in repair activity sponsored by FoNAF
- 1029 volunteer hours *in the field*
- 12 enclosures restored to a functional state
- 4.8 miles of enclosure fences repaired and raised
- 151 “Aspen Protection” signs hung

## **Monitoring and evaluation**

The Forest Service has in place a system that asks adopters to check their exclosures twice per year. FoNAF members typically check their exclosures much more frequently. We plan to check exclosures both during the hunting & woodcutting seasons and at the end of those seasons to see whether the fences have remained intact. We will check fences during the winter (by snowshoe or X-C ski) to see how the fences are faring. When the snow begins to melt in early Spring of 2011, we will check the fences again to see what may need to be done during the 2011 field season.

As far as snow loading goes, we are optimistic that the fences will stand up well. Cutting by hunters or woodcutters is impossible to predict, but we will know about any such damage early on and can repair it promptly. When several tornadoes ripped through the greater Hart Prairie area in October 2010, toppling trees on some of our exclosures, we got the damage repaired within two and one-half weeks. We have experience in rapid response.

## **Results and expectations**

FoNAF devoted enormous effort to the greater Hart Prairie project, and we are gratified with the results. When we last left each exclosure, it was in good condition for the first time in many years. Of course, we'll know better next Spring how well the fences have survived the threats that humans and winter pose.

## **Sharing project results with the community**

FoNAF has tried to get an article published but without success. Because of the recession and the general decline in readership for print media, our local newspaper has reduced the number of pages that it prints and has spurned our offers of articles and photos.

A local hunter, Dave Wolf, however, writes a monthly column on issues related to wildlife. Through a FoNAF board member who has known Dave for 25 years, we got in touch with Dave, explained what the exclosures and the signs are about, and asked that he fit a couple of paragraphs into his column. On November 2nd, Dave devoted his entire column to aspen. Although NFF & NAFSR are not mentioned and even FoNAF showed up only as a website address, we were delighted that so much good stuff was said about protecting young aspen. A copy of Dave's article accompanies this report.

## **Partners**

FoNAF had no formal partners in this project (other than the USDA Forest Service, of course). Nonetheless, various organizations provided volunteers on one or more of the workdays open to the public. Here is a list of those organizations.

Sierra Club (Grand Canyon chapter)  
Sedona's Friends of the Forest  
ROTC group from Northern Arizona University (NAU)  
NAU Forestry Club  
The Nature Conservancy

## **Lessons learned and next steps**

The project went pretty much as FoNAF had expected. If anything, we were pleasantly surprised with how many people turned out and how much we accomplished. Along the way, we developed more efficient methods to raise fences and to attach the fences to both metal T-posts

and wooden stays. We'd be glad to convey those details to any other organization that repairs exclosures.

The major goal is to reverse the decline of aspen on the CNF and elsewhere in the West. Exclosures on the ranger district surrounding Flagstaff currently protect 250 acres of aspen stands. Historically, the Coconino National Forest had some 10,000 acres of aspen. Fencing on that scale is neither feasible nor desirable. We need to complement exclosures with other ways of protecting or propagating aspen.

FoNAF has developed a partnership with The Arboretum at Flagstaff to propose and implement such a complementary approach. The basic idea is the following.

- Inventory, catalog, and track (in the field) aspen clones whose saplings survive *outside* of exclosures. [We know of some such clones. Moreover, a significant number of isolated and potential clones exist in un-surveyed areas across the landscape.]
- Propagate such clones in a greenhouse setting.
- Plant the new saplings on experimental plots on the CNF—and see whether they survive.
- If survivors can be found, then propagate many more saplings and plant them on a landscape scale. (Some planting will be done in areas where the progenitors were gathered in order to maintain conditions and practices as nearly natural as possible. Other saplings will be planted at higher and cooler elevations to promote survival despite global warming.)
- If successful, disseminate the process to others.

From late November through April 30th, the formal end of the grant period, the project area is cold and snowy. Only monitoring and emergency repairs are feasible. Therefore, FoNAF is submitting its Final Report on the Greater Hart Prairie Aspen Protection Project early because we anticipate submitting another proposal for matching funds under the NFF & NAFSR MOU. We anticipate asking for support for “Propagating Aspen Clones: Survival in the 21st Century,” a provisional formal name for the complementary approach described above. By submitting our Final Report early, we aim to establish a reputation for getting our projects done on time—if not earlier—and done well, too.

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John L. Nelson  
Local Representative, NAFSR

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Ralph Baierlein  
President, Friends of Northern Arizona Forests

A photographic epilogue appears on the next page.

## Epilogue

Here are two photos taken by Tom Bean at the public workday that FoNAF sponsored on 24 July 2010. In the first photo, you see volunteers stretching the lower of two top wires and re-clipping the old woven wire panel. The tall 10' T-posts were purchased with NFF funds.



And here is the happy crew (just before lunch) with more young aspen in the background.

