ARIZONA GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP PROGRAM
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL

PROJECT INFORMATION

Project Title: Schultz Fire Aspen Restoration Project | **Project No. 10-212**

Region/GMU: Region II, GMU 7E | **HPC:**

Project Type: Wildlife habitat improvement through "jackstrawing" of trees to protect aspen sprouts and revegetate high severity burn areas

Project Description:
In June and July 2010, the Schultz Fire burned over 15,000 acres on the eastern slopes of the San Francisco Peaks. In order to rehabilitate high severity burn areas, approximately 350 acres of burned trees will be jackstrawed to protect aspen regeneration from ungulate browsing and revegetate/reforest the burn area. Jackstrawing involves dropping whole trees in various directions and leaving them on the ground. Jackstrawing is being utilized in lieu of exclosure fencing so that wild ungulates may still access, utilize, and move through the area, while protecting islands of aspen regeneration from browse damage. After the aspen reach a diameter where they can no longer be damaged by wild ungulates (20-30 years), jackstraw material can then be piled and burned so that wildlife may utilize the entire area. Monitoring plots will be established to evaluate treatment effectiveness.

Wildlife Species to Benefit: Elk, mule deer, turkey, and a wide variety of birds and mammals that use aspen for foraging, nesting, breeding, and resting sites.

Possible Funding Partners:

Implementation Schedule:
Beginning: Spring 2011 (weather permitting)
Completed: Fall 2012 (weather permitting)

NEPA Compliance: (if applicable)
Completed: Yes No _X_
Projected Completion Date: Spring 2011

PROJECT FUNDING

SBG Funds Requested: $48,000

Cost Share Funds: $50,200

Total Project Costs: $98,200

PARTICIPANT INFORMATION

Applicant: Patty Ringle, Silviculturist
(please print) Coconino National Forest
Telephone: 928-527-8285

Address: Flagstaff Ranger District
5075 N Hwy 89
Flagstaff, AZ 86001

AGFD Contact and Phone No. Carl Lutch 928-214-1242
(If applicant is not AGFD personnel)

Coordinated with: AZGFD | **Date: 10/18/10**

Applicant's signature: Patty Ringle | **Date: 10/19/10**

WAS PROJECT PRESENTED TO THE LOCAL HPC? YES __X__ NO _____

(revised 7-02-2007)

Forest Service wildlife biologist will present this project proposal to HPC at the meeting on October 19, 2010.

A fieldtrip to the Schultz Fire area was conducted on October 13, 2010 with Arizona Game and Fish, Region 3 Forest Health Protection Group, and the Coconino National Forest. In response to information obtained on this fieldtrip, it was decided to modify a previous aspen restoration project proposal by shifting the location of aspen restoration and jackstrawing to a higher priority area.

HAS PROJECT BEEN SUBMITTED IN PREVIOUS YEARS? No

NEED STATEMENT/PROBLEM ANALYSIS:
In June and July of 2010, the Schultz Fire burned over 15,000 acres on the eastern slopes of the San Francisco Peaks. The Schultz Fire Aspen Restoration Project proposes to restore a total of 350 acres of aspen by protecting aspen sprouts from severe ungulate browsing through jackstrawing of dead trees. Jackstrawing involves dropping whole trees in various directions and leaving them on the ground. Jackstrawing is being utilized in lieu of exclosure fencing so that wild ungulates may still access, utilize, and move through the area, while protecting islands of aspen regeneration from browse damage. After the aspen reach a diameter where they can no longer be damaged by wild ungulates (20-30 years), jackstraw material can then be piled and burned so that wildlife may utilize the entire area.

Currently, 95% of aspen sprouts in high severity burn areas have been browsed to less than 1 ft in height (see Figure 1). Visual inspection of these high severity burn areas estimates that aspen sprouts are the only live vegetation on site, except for some minor areas of grass. Forest Health Protection staff agrees that the aspen may sprout one additional year only. Therefore, timing is limited. Revegetation and restoration of wildlife habitat within the burn area will be most quickly, efficiently, and economically accomplished through reforestation by aspen. In high severity burn areas, aspen sprouting response is significant. If aspen sprouts can be protected, wildlife habitat can be restored within 20-30 years. Without protection of aspen sprouts, reforestation would have to occur through the planting of conifers. The soonest conifers can be planted would be beginning in 2012. Conifers grow at a much slower rate than aspen. Reforestation with conifers would take a significantly longer amount of time to restore wildlife habitat in the area. The cost of planting conifers would greatly exceed that of protecting aspen regeneration. Additionally, aspen communities are a critical element within the forests of northern Arizona, representing one of the most biologically diverse and ecologically unique sites and serve as an indicator of ecological integrity (Di Orio et al. 2005). Additional benefits of restoring aspen in high severity burn areas would be soil stabilization, decreased erosion, and decreased flooding to private property located down slope from the burn area.

Aspen provide unique and diverse wildlife habitat for a variety of wildlife species. Aspen forests provide important foraging, nesting, breeding, and resting sites for a wide variety of birds and mammals. DeByle (1985) listed 134 bird species and 55 mammals that use aspen habitats and aspen may be required habitat for species such as the red-naped sapsucker, warbling vireo, and MacGillivray's warbler (Reynolds and Finch 1988). Game and waterfowl species that use aspen include elk, mule deer, white-tailed deer, wild turkey, Abert squirrel, red squirrel, black bear, cottontail rabbit, and a variety of predatory and fur-bearing animals, as well as six species of ducks. Non-game species include five species of bats, eleven species of hawks, six owl species and an assortment of other songbirds and small rodents and mammals. Aspen stands also provide palatable forage for a wide variety of wildlife species. Although many animals use aspen year-round, this nutritious species may be especially valuable during the fall when protein levels of most available forage plants are low (Tew 1970). Aspen may serve as an important and palatable source of protein on winter ranges when other plants are scarce or unavailable (Patton and

Jones 1977). Both mule deer and white-tailed deer feed on aspen during most of the year while elk will use aspen as browse primarily in winter, spring and autumn when grass and forbs are not as readily available. Additionally, the aspen forest type provides good hiding for large ungulates during much of the year, and at least some thermal cover throughout the winter months (Debyle 1985). Mid-elevation aspen and the associated vegetation provide critical cover and forage for cow elk and calves. Also, aspen provides a readily available food source for porcupines and rabbits. Small rodents such as squirrel, pocket gophers, mice, and voles feed on aspen during at least part of the year (DeByle 1985). Black bears eat aspen buds and catkins. The bark is digestible by ruminants, somewhat nutritious and is readily chewed from the tree. Turkeys, bats, woodpeckers and sapsuckers forage on insects, which are abundant in the aspen type. Thirty–four of the eighty-five cavity nesting bird species nest in the cavities of aspen in the West. Raptors and other canopy nesting birds will also nest in aspen stands. Several birds use the understory vegetation of aspen to build nests on the ground while others use the associated shrubs.
It is important for avian conservation to maintain many aspen stands across the landscape encompassing a diversity of vegetation structure and composition. Research by Griffis and Beier (1993) suggests that aspen stands do not harbor separate populations, but rather are locations where the regional avifauna reaches high local density and richness and may be crucial to birds in years of resource scarcity.

PROJECT OBJECTIVES:
Objectives of the Schultz Fire Aspen Restoration Project are to:

- Protect aspen sprouts from browse damage
- Revegetate/reforest high severity burn areas
- Improve wildlife habitat
- Stabilize soil, decrease erosion and flooding

PROJECT STRATEGIES:
Figure 2 displays burn severity within the Schultz Fire. This project will utilize jackstrawing of dead trees in high severity burn areas to protect aspen sprouts from ungulate browsing. .Jackstrawing of trees will increase the amount of aspen regeneration surviving to maturity, which over time will improve wildlife habitat for a variety of wildlife species. Trees will be directionally felled by hand using chainsaws. Conifers will be dropped in a "jackstraw" fashion to protect aspen seedlings from browsing damage. The jackstrawing will be arranged in such a fashion that wild ungulates will still be able to move through and use the area, while islands of aspen regeneration are protected. The jackstraw method is being used as an alternative to exclosure fencing to protect young aspen while still allowing wild ungulates to access the area. Jackstrawing will occur naturally over the next several years within the burn area. This project would simply speed up this natural process, thus aiding in the achievement of the project objectives listed above.

Additionally, this area has not been grazed by livestock for over 20 years.

PROJECT LOCATION:
The Schultz Fire area is located on the Flagstaff Ranger District of the Coconino National Forest, approximately 3 miles north of Flagstaff, Arizona (see Figure 3). The project is located on the east side of the San Francisco Peaks in T22N, R7E, Section 23 in Game Management Unit 7E..

LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner's name):
Land ownership within Schultz Fire area is Coconino National Forest.

HABITAT DESCRIPTION:
Aspen and mixed conifer that experienced high severity wildfire. Average elevation is 8500 feet.

ITEMIZED USE OF FUNDS:

Activity	Cost per unit	Total Units	Total Cost	SBG Funds	Cost Share Funds
Tree felling/ jackstrawing	$250 per acre	350 acres	= $87,500	$48,000	$39,500
Silviculture admin – oversight, layout	$320 per day	30 days	= $9,600	$0	$9,600
Monitoring Plots	$50 per plot	22 plots	= $1100	$0	$1100
Total			**$98,200**	**$48,000**	**$50,200**

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:
This project is supported by the Arizona Game and Fish Department.

Tree felling/jackstrawing may be done by either Forest Service personnel or through a private contract. The Coconino National Forest Wildlife Crew will collect monitoring data within the treatment area.

PROJECT MONITORING PLAN:
Permanent monitoring plots will be established within treated areas to determine the effectiveness of treatments by measuring the amount of regeneration and their survival over several years. Data will be collected specifically on aspen regeneration using a $1/100^{th}$ acre fixed area circular plot. Photos will also be taken at each plot.

PROJECT MAINTENANCE: Coconino National Forest

PROJECT COMPLETION REPORT TO BE FILED BY: Patty Ringle

Figure 1. Aspen sprouts damaged by wild ungulate browsing. Photo taken by M. Fairweather, October 13, 2010 in a high severity burn area of the Schultz Fire, Coconino National Forest, Arizona.

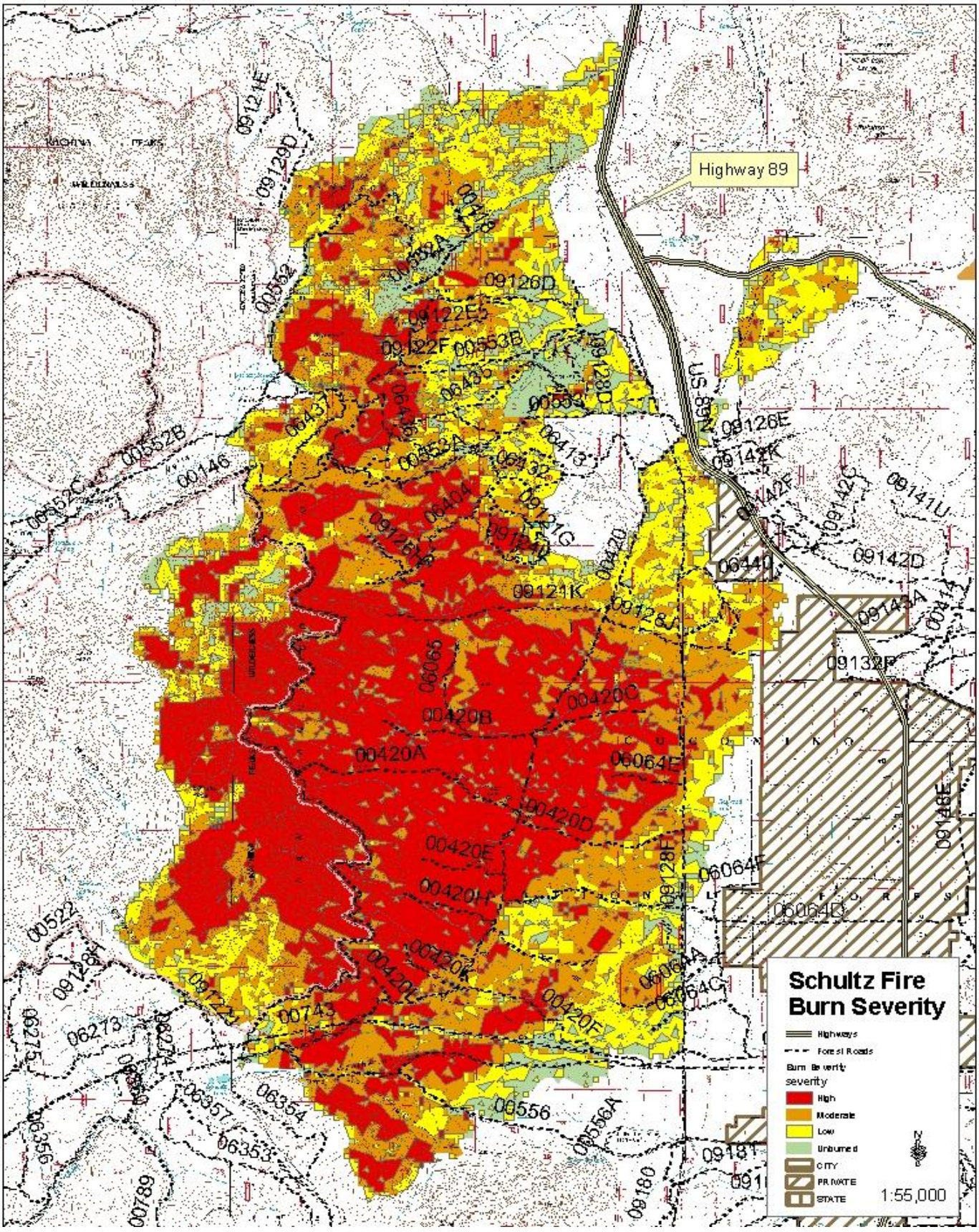

Figure 2. Schultz Fire Burn Severity, Coconino National Forest, Arizona.

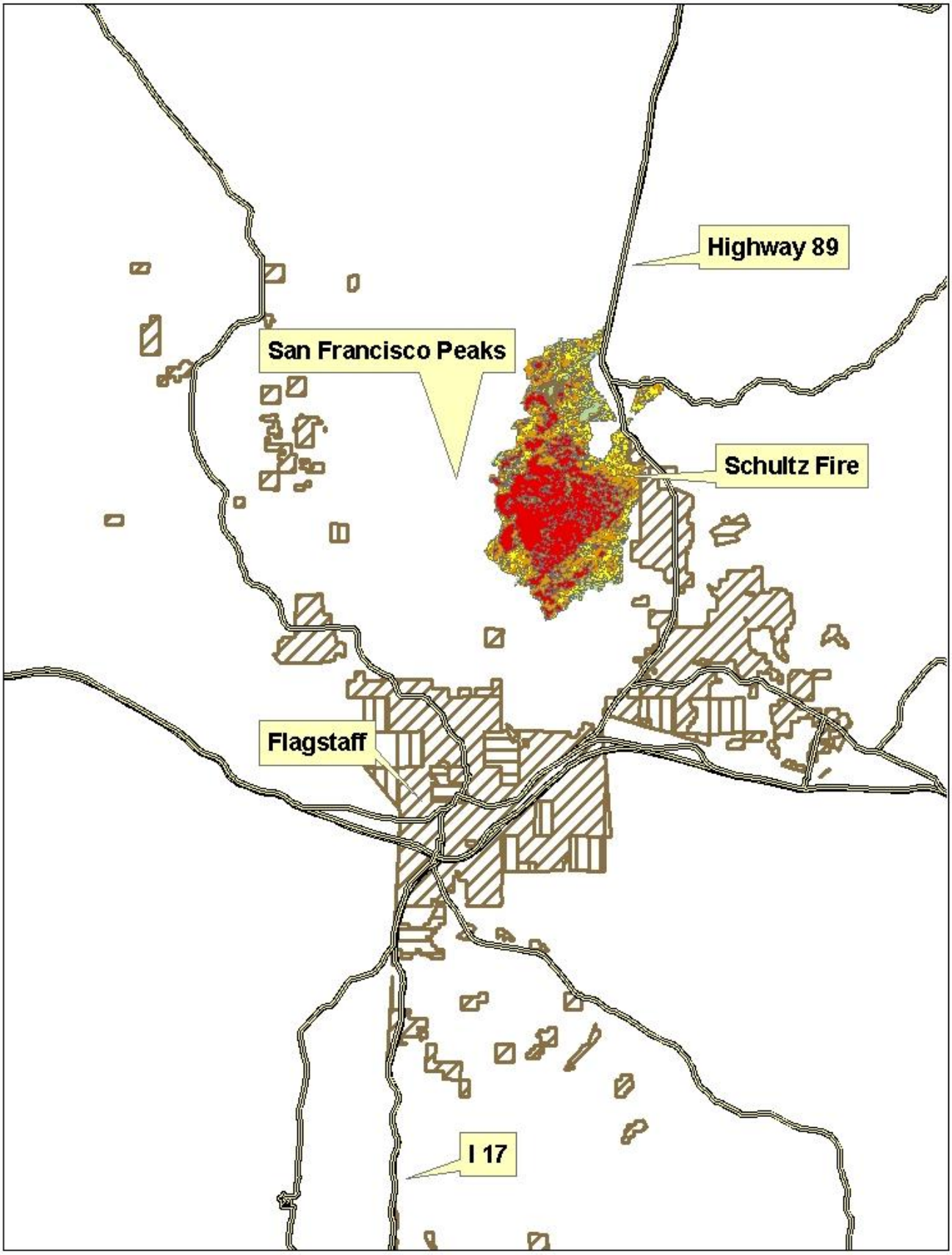

Figure 3. Schultz Fire vicinity map, Coconino National Forest, Arizona.