

**ARIZONA GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP COMMITTEE
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL**

Game Branch / HPC Project Number: 13-706

PROJECT INFORMATION

Project Title: Fence Modifications to Reconnect Pronghorn Populations North of I-40

Region and Game Management Unit: Regions 2 & 3: GMUs 7E, 7W, 9, & 10

Local Habitat Partnership Committee (LHPC):

- Williams/Flagstaff

Was the project presented to the LHPC?

YES[] NO[x]

Has this project been submitted in previous years? YES[X] NO[]

If Yes, was it funded? YES[X] NO[] → **Funded HPC Project #(s):** 12-203

Project Type: Fence Modifications and Relocations

Brief Project Summary:

This project will use GPS data collected from research projects to identify and prioritize locations for fence removal or relocation along roadways and within pastures. Once identified, fences will be removed or modified to increase pronghorn connectivity using volunteers and contractors.

Big Game Wildlife Species to Benefit: Pronghorn

Implementation Schedule (Month/Day/Year):

Project Start Date:

Summer 2013

Project End Date:

Fall 2015

Environmental Compliance:

NEPA Completed: Yes[] No[x] N/A[]

Projected Completion Date: CNF done, KNF begins October 2013

State Historic Preservation Office - Archaeological Clearance:

Yes[] No[] N/A[x]

Projected Completion Date: _____

Arizona Game and Fish Department EA Checklist: N/A[]

To be Completed by: Scott Sprague

Projected Completion Date: Once FS NEPA complete for each loc.

PROJECT FUNDING

Special Big Game License Tag Funds Requested:

\$ 10,000

Cost Share or Matching Funds:

\$ 160,000 estimated

Total Project Costs:

\$ 170,000

PARTICIPANT INFORMATION

Applicant (please print):

Jeff Gagnon/Scott Sprague

Address:

5000 W. Carefree Highway
Phoenix AZ, 85086

E-mail: JGagnon@azgfd.gov

&
SSprague@azgfd.gov

Telephone: 623.236.7252

Date: 6-20-13

AGFD Contact and Phone No. (If applicant is not AGFD personnel):

Project has been coordinated with:

Arizona Antelope Foundation, Coconino and Kaibab National Forest, ADOT

NEED STATEMENT – PROBLEM ANALYSIS:

Maintaining wildlife corridors can facilitate population range shifts, colonization of new habitat, escape from avoidance of predators, climatic extremes, maintenance of genetic diversity, and healthy dispersal (NWF 2009). In the case of American pronghorn (*Antilocapra americana*), Habitat fragmentation is a leading cause of population decline. In many cases fencing, particularly when combined with roads, can constitute a nearly impermeable barrier (Van Riper and Ockenfels 1998). Pronghorn historically roamed freely in North America, including northern Arizona, but populations declined by as much as 99% by the early 1900's (Yoakum 1968). In Arizona, populations declined from approximately 45,000 (Knipe 1944) to 7,500 by 2002 (Arizona Game and Fish Department, unpublished data). AGFD and other stakeholders have made the conservation and restoration of this flagship grassland species a top priority. The restored ability of this population to move throughout its range will provide an opportunity to adapt and increase its resilience.

Van Riper, C. and R. Ockenfels. 1998. The influence of transportation corridors on the movement of a pronghorn antelope over a fragmented landscape in northern Arizona. ICOWET 241-244.

Yoakum, J. D. 1968. A review of the distribution and abundance of American pronghorn antelope. Antelope States workshop proc. 3:4-14.

Knipe, T. 1944. The status of antelope herds of northern Arizona. Arizona Game and Fish Department Federal Aid in Wildlife Restoration Project 9-R report, Phoenix. Arizona, USA.

PROJECT OBJECTIVES:

Reconnect pronghorn populations north of I-40 by:

- Removing fence where possible
- Relocating fences along roads to provide a buffer staging zone
- Removing or raising/replacing bottom wires to conform with the 16 – 20” smooth wire specification
- Adding goat bars in key pronghorn movement areas

PROJECT DESCRIPTION AND STRATEGIES:

This project will utilize data from pronghorn telemetry studies north of I-40 over the past two decades to identify key areas for fence removal, modification or reorientation. Specific activities include:

- 1) Locate fence project areas through GIS analysis, focusing on barriers to pronghorn movements.
- 2) Ground-truth selected areas to determine feasibility of project type. Project types include complete removal of fence, modification of existing fencing to increase permeability for pronghorn and other wildlife species, and relocation of fences to increase pronghorn movement (e.g. ADOT Right-of-way).
- 3) Work with various stakeholders to prioritize projects for implementation.
- 4) Work with USFS and other involved land-owners to complete NEPA on prioritized projects. The Forest has agreed that a Categorical Exclusion will meet the NEPA requirements and will assist as resources allow.
- 5) Implement projects through volunteer work days and contractors.

Implementation of our projects will use a data-driven approach to steer the application of available resources toward maximum efficiency with the greatest opportunity for success. Data of this nature allows us to target project locations by identifying barriers (Figure 1). We conducted a successful pilot project by modifying both pasture fences and highway right-of-way fences. Our post-treatment evaluation determined that pronghorn permeability increased dramatically across fences (>100% increase). Post treatment road crossings increased at an even greater rate following fence modification and removal which resulted in occurrences in areas never before documented. When considering specific mitigation practices, this project provided statistical support for the importance of bottom wire height and empirically derived the ideal buffer distance between the road and right-of-way fences to allow pronghorn to stage while crossing a road as alluded to in previous literature (Van Riper and Ockenfels 1998).

Timeline - We anticipate completing all fence modifications, removal, and reorientation of fencing within three years of funding through volunteer work days as weather allows. We will begin evaluation and ground-truthing of project locations selected through movement data in the summer of 2012. Once funding

is available, supplies will be purchased and project volunteer days will be scheduled and implemented. AAF has already committed to workdays for 2013-2015, project 1 – Kendrick Park was completed June 2013.

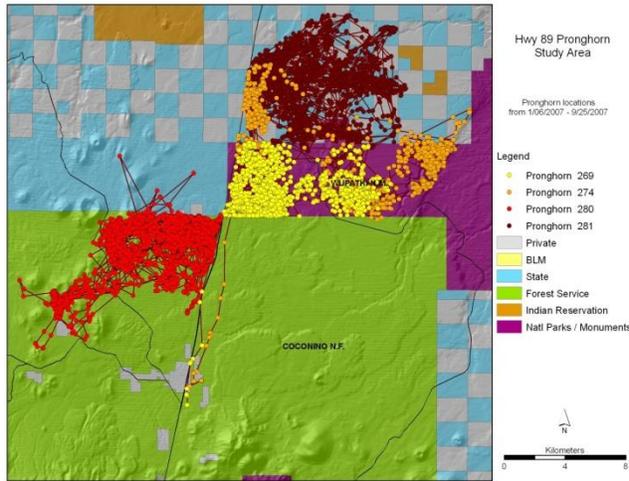
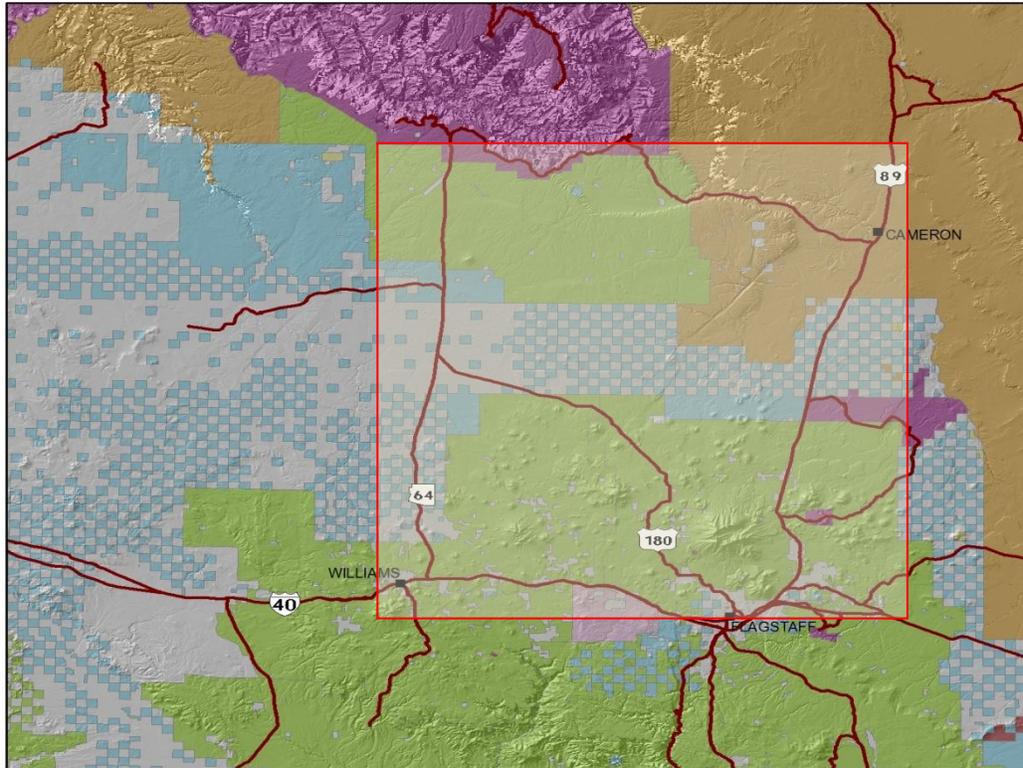


Figure 1. Example of GPS data demonstrating the barriers posed by fences and roads that led stakeholders to begin fence modifications. Similar data covers the entire study area and will be evaluated to prioritize projects. This will restore pronghorn mobility through their fragmented range, returning gene flow to levels that will promote a diverse population with more adaptive capacity relative to its altering surroundings.

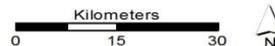
PROJECT LOCATION:

Project will occur generally between areas west of SR 64 to areas east of US 89 and north of I-40.



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|----------------------|--------------------------|
| Ownership | ■ AZ Game and Fish |
| ■ Private | ■ Military |
| ■ BLM | ■ Natl Parks / Monuments |
| ■ State | ■ Bureau of Reclamation |
| ■ Forest Service | ■ Parks & Recreation |
| ■ Indian Reservation | ■ Other |
| ■ Wildlife Refuge | |

Proposed Pronghorn Connectivity Area



LAND OWNERSHIP AT THE PROJECT SITE(S):

(if the project area is private property, please state specifically and provide the landowner's name)

- Land ownership includes USFS, NPS and Private, private land will include CO Bar Ranches. The work may expand to other ranches and ownerships once priorities are identified.

IF PRIVATE PROPERTY, IS THERE A COOPERATIVE BIG GAME STEWARDSHIP or LANDOWNER AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?

YES[X] NO[] N/A[]

HABITAT DESCRIPTION:

Primary grassland with interspersed pine and pinion pine.

ITEMIZED USE OF FUNDS:

Special Big Game License Tag Funds

Fence relocations along roadways - **\$10,000**, to be combined with other funding sources.

Cost Share or Matching Funds (for volunteer labor rates please refer to the worksheet below)

- AAF has committed to 3 years of volunteer field work, assuming a weekend a year of long work days (10 hrs) and anticipating 30+ volunteers at 14.14/hr we can reasonably assume **\$25,452.00 for time not including mileage.**
- AAF has contributed **\$5,000** cash.
- AWF has contributed **\$5,000** cash.
- Wildlife Conservation Committee has committed **\$15,000 cash**
- Friends of Northern Arizona Forests – Volunteer Work and Equipment (Approx- **\$4,000**)
- Big Game Fund has contributed **\$30,000** over two fiscal years
- AGFD Wildlife Contracts Branch will provide project planning and oversight through their Federal Aid Program, we will estimate this at **\$20,000** over 3 years.
- AGFD Development Branch is providing a cattle guard and installation (approx. **\$15,000**)
- On 4-20-13, 27 Eagle Scouts along with Troy Christensen completed a weekend project, we estimated approx. **\$5000** in hours (14.14/hr), mileage and supplies.
- USFS will complete required NEPA + Work Days + Auger, CNF complete, KNF pending cost (est. **\$20,000 min.**)
- Babbitt Ranches will be handling fence projects within their boundaries using CO Bar personnel including relocation of fencing along US 89, (Est. >**\$15,000**)
- National Park Service personnel will be completing fence modifications east of US 89 between Wupatki National Monument and Sunset Crater. These costs are TBD.

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

Arizona Antelope Foundation – Volunteer work days and Funding

Arizona Wildlife Federation – Volunteer Work Days and Funding

USFS – CNF and KNF - Assistance with NEPA and possible funding

ADOT – Safety support for work along highways

Eagle Scouts – Volunteer work days

AGFD – Funding and project oversight

CO Bar Ranches – Project completion on their allotments and land

Wupatki NM – Project implementation east of 89 and post-construction funding.

Grand Canyon NP – South boundary fence modifications and post-construction monitoring funding.

WOULD IMPLEMENTATION OF THIS PROJECT ASSIST IN PROVIDING, MAINTAINING, OR FACILITATING RECREATIONAL ACCESS?

YES[] NO[] N/A[x]

PROJECT MONITORING PLAN:

Wildlife Contracts Branch Personnel will oversee project completion. Once completed, pronghorn will be collared with external funding from an NPS grant and other sources to assess the success of the project. Collaring will occur in 2015-2016.

PROJECT MAINTENANCE:

ADOT will assume maintenance responsibilities of relocated highway right-of-way fence per an agreement with USFS and CO Bar. Allotment fences will be maintained by respective ranchers.

PROJECT COMPLETION REPORT TO BE FILED BY:

Jeff Gagnon/Scott Sprague AGFD Wildlife Contracts Branch

ARIZONA GAME AND FISH DEPARTMENT VOLUNTEER HOURLY RATES AND CLASSIFICATIONS WORKSHEET

PROJECT TITLE: _____

The value of volunteer labor should be calculated at the hourly rate of an employee doing similar work, or using hourly rates from the Arizona Department of Administration's Human Resource web site, plus a standard ERE rate of 35%. http://www.hr.az.gov/HR_Professional/Class_Comp/PDF/alphacovered.pdf

\$0.445/mile should be the calculation used for mileage.

Water Development	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Habitat Restoration and Clean Up	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Fisheries	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Nongame Branch Project	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Misc/office work	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			varies	
Community Services	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$7.44	
Events and Other	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Research Branch	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Wildlife Area Hosts	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$17.44	
Education Programs	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$16.07	
Totals				