

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

Game Branch / HPC Project Number:	11-411
Possible Funding Partners:	

PROJECT INFORMATION

Project Title: Hillside Mesa Pronghorn Transplant Monitoring GMU 20C

Region and Game Management Unit: Region 4, GMU 20C

Local Habitat Partnership Committee (LHPC):

- Southwest

Was the project presented to the LHPC?

YES NO

Has this project been submitted in previous years? YES NO

If Yes, was it funded? YES NO → **HPC Project #:**

Project Type: Transplant

Brief Project Summary: Five Spread Spectrum GPS collars are needed to identify movement corridors, habitat usage and survival of pronghorn on Hillside Mesa in GMU 20C. The collars will be utilized in conjunction with translocation efforts to increase the local pronghorn population on Hillside Mesa.

Big Game Wildlife Species to Benefit: Pronghorn

Implementation Schedule (Month/Day/Year):

Project Start Date: March 2012

Project End Date: June 2013 with monitoring extending through June 2015.

Environmental Compliance:

NEPA Completed: YES No N/A

Projected Completion Date: _____

State Historic Preservation Office - Archaeological Clearance:

YES No N/A

Projected Completion Date: _____

Arizona Game and Fish Department EA Checklist: N/A

To be Completed by: Capture EA Checklist

Projected Completion Date: _____

PROJECT FUNDING

Special Big Game License Tag Funds Requested:

\$ 17,500

Cost Share or Matching Funds:

\$ 0

Total Project Costs:

\$ 17,500

PARTICIPANT INFORMATION

Applicant (please print):

Curtis Herbert

Address:

9140 E. St

Yuma, AZ 85365

E-mail:

cherbert@azgfd.gov

Telephone: 928-856-0766

Date: 8/29/11

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

Project has been coordinated with: Arizona State Land Department (Chris Lowman); Terry Blackmore (permittee); George Fornira (permittee)

NEED STATEMENT – PROBLEM ANALYSIS:

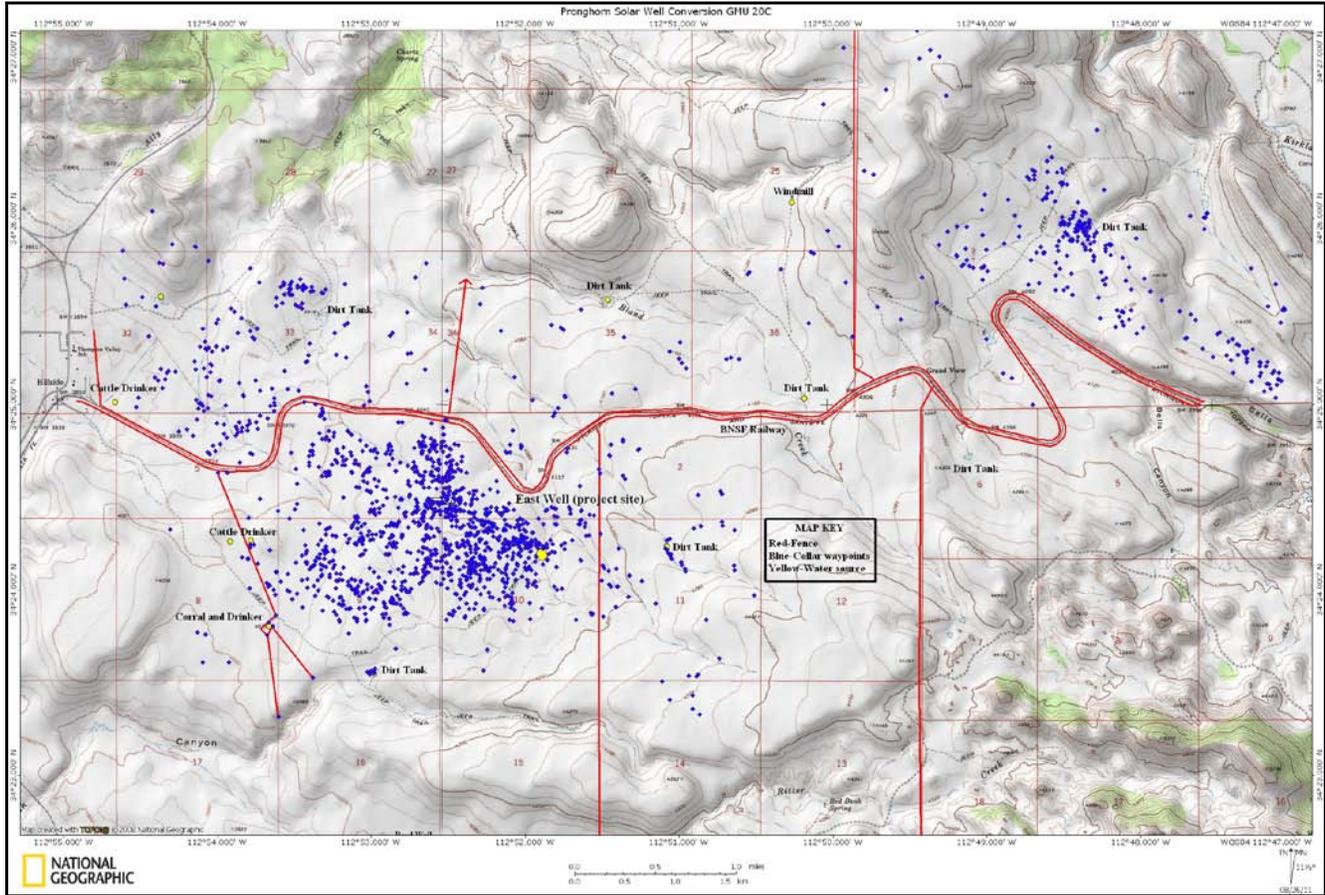
Five Spread Spectrum GPS collars are needed to identify movement corridors and monitor habitat usage and survival of pronghorn on Hillside Mesa in GMU 20C. The collars will be utilized in conjunction with translocation efforts to increase the local pronghorn population on Hillside Mesa. Part of this project will be to bring up to 20 pronghorn from the Prescott area to augment the Hillside Mesa herd (not part of this funding request). Currently, the population has declined to six animals. Historical efforts to increase pronghorn populations on Hillside Mesa led to release operations in 1984 (51), 1993 (54) and 1998 (5) totaling 110 animals from Wyoming and Utah. Translocating animals from central Arizona will hopefully reduce capture related mortalities upon release as well as post release mortalities due to their familiarity of the habitat type and reduced transport time between the capture and release site; two factors that plagued previous transplant efforts. In addition, the current population has a herd knowledge of their range and will be instrumental in familiarizing new animals with critical knowledge of water sources, fences and possible movement corridors that may link the Hillside population with existing populations to the north across Kirkland Creek and HW 96 that otherwise would have or will be lost without transplant efforts.

Previous monitoring was initiated in December 2008 when two pronghorn were fitted with Spread Spectrum collars for the purpose of tracking their movements in order to determine if a movement corridor exists with pronghorn habitat to the north. Each collar was programmed to record two locations per day. The pronghorn were captured in GMU 20C near Hillside using helicopter and net gun. During capture efforts 6 pronghorn (3 bucks, 3 does) were observed and one adult buck pronghorn died from injuries due to capture.

Monthly ground monitoring was conducted during the life of the collars. In addition to ground monitoring, three flights were conducted to upload data stored on each collar. Both collars functioned properly and provided much needed insight into the pronghorn movements from December 2008 until March 2010. Waypoint data from the collars showed that pronghorn locations were tied to the most reliable water sources proximate to quality habitat. The East Windmill was the most preferred water site. Ground monitoring has identified a known population of six pronghorn including survival of one female fawn to adulthood. Maps have been produced using waypoints obtained from the collars showing each collared pronghorn's movement. Both collared animals remained in the original capture location and have not moved from Hillside Mesa, see map below.

Water availability from stock tanks and windmills/wells has been monitored monthly. The locations of the waters have been mapped and analysis of each water's reliability for pronghorn use has been documented. During the summer of 2010 the East Windmill head-unit failed and subsequent trips to locate the pronghorn has shown they have been forced to use less desirable water sources which frequently dry up during summers. These dirt tanks tend to be in drainages with increased shrub cover making the pronghorn more vulnerable to predation. Currently the windmill is in disrepair and the permittee has partnered with the Arizona Game and Fish Department to provide funding for materials to convert the well from wind power to a solar powered submersible pump system. The permittee has converted numerous other windmills to solar and is familiar with the technology, maintenance and reliability with these systems.

An inventory of the location and composition of barbed wire fences has been completed for Hillside Mesa with cooperation from the Arizona Antelope Foundation. The collar data has confirmed fences and the railroad do not restrict pronghorn movement across the mesa. See map below.



Map depicting pronghorn locations, water sources and fencing on Hillside Mesa GMU 20C.

Just the same as other occupied habitats throughout the state, site specific management needs will be demonstrated through the analysis and application of actively monitoring and managing wildlife populations. Knowledge gained from site specific transplants, surveys and collar monitoring will lead to an adaptive management philosophy with the goal of ultimately achieving a self sustaining pronghorn population on Hillside Mesa. Active management will require the analysis, determinations, and funding of habitat improvement projects such as controlled burns, wildlife water developments, fence modifications, predator control and identification of fawning grounds for more intensive management.

PROJECT OBJECTIVES:

- Supplement current population of pronghorn inhabiting Hillside Mesa so it can occupy all available habitat and increase its chances for long term survival.
- Identify movement corridors that may link the Hillside population with existing populations to the north.

PROJECT DESCRIPTION AND STRATEGIES:

- Transplant up to 20 pronghorn from central Arizona for release on Hillside Mesa GMU 20C
- Collar up to 5 pronghorn to track movement and mortality
- Utilize GPS collar data to make recommendations for habitat enhancement projects such as

brush clearing and fence improvements in migration corridors, development of wildlife waters and control fires to expand habitat use, work with livestock permittees to reduce disturbance and maintain hiding cover at fawning grounds during fawning season as well as maintain water at cattle drinkers during critical summer months

PROJECT LOCATION:

Yavapai County, AZ
T. 12N R. 6W

LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner's name):

State Trust Land

HABITAT DESCRIPTION:

Hillside Mesa is comprised of the Semidesert Grassland vegetative community as described by Brown and Lowe (1980). Elevation ranges from 3850-4500 ft and the topography is gently rolling hills intermixed with drainages. Dominant species include tobosa grass, scrub oak, catclaw, wait-a-minute bush and prickly pear cactus. The mesa is approximately thirty square miles. Approximately seventeen square miles are currently occupied by pronghorn as indicated by collar data. This number is likely to increase as the size of the population increases.

The pronghorn herd existing in this area is the result of transplants as there were no pronghorn inhabiting this location immediately prior to the transplants. There are no references during recent time claiming pronghorn inhabited the Kirkland-Hillside area. Knipe (1944) included this area in the distribution of pronghorn in northern Arizona, but delineates it as an area of little or no "pronghorn drift," and shows pronghorn herds only north of the Santa Maria River. Arizona Game and Fish Department has evaluated pronghorn habitat statewide (Ockenfels et al. 1996). In the Hillside-Kirkland area two sections rated moderate quality, nineteen sections were rated low quality, and the remainder was rated as poor quality pronghorn habitat. Hillside Mesa comprises the moderate and low quality habitat scores.

ITEMIZED USE OF FUNDS:

Special Big Game License Tag Funds

Spread Spectrum GPS collars (\$3500 X 5) = **\$17,500**

Cost Share or Matching Funds

N/A

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

Arizona Antelope Foundation

-Provide volunteer labor for habitat enhancement projects

Predator calling organizations

-Provide volunteer labor for targeted predator removal to promote fawn survival in association with site specific predator management plan

Arizona State Land Department

-Permitting agency for land improvements

Blackmore Ranches

-Maintains and manages grazing allotments, cattle water developments and barbwire fence for lands including Hillside Mesa

Fornira Ranch

-Maintains and manages grazing allotments, cattle water developments and barbwire fence for lands including Hillside Mesa

-Owns deeded property on Hillside Mesa

PROJECT MONITORING PLAN:

2 year ground monitoring will be done by the district Wildlife Manager with monthly monitoring during spring and summer. Annual fixed wing surveys will be conducted in conjunction with deer and javelina surveys in January. This will result in no additional costs to survey operations.

PROJECT MAINTENANCE:

N/A

PROJECT COMPLETION REPORT TO BE FILED BY:

Curtis Herbert, FOR4

WATER DEVELOPMENT PROJECTS (*see attached worksheet*):

N/A

TREE SHEARING (AGRA-AXE, PUSH) PROJECTS (*see attached worksheet*):

N/A