

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

Game Branch / HPC Project Number:	12-214
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PROJECT INFORMATION

Project Title: Westside Kaibab Mule Deer Project 2013	
Region and Game Management Unit: Region II; 12A West	
Local Habitat Partnership Committee (LHPC): • None in area	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[] → HPC Project #: 11-223	
Project Type: Telemetry project to determine mule deer habitat use, movement and survival	
Brief Project Summary: During the first 5 months of this study some of the radio collared doe mule deer on the Westside of the North Kaibab have died. This project involves capturing 7 additional deer with a 407 helicopter and attaching the store-on-board GPS collars. These collars will fall off automatically after one year. Once the collars are collected, the GPS data will be downloaded and analyzed to fill in gaps to aid in the proper management of this important deer herd. Additionally, the data would be used to determine the effectiveness of past habitat improvement projects and identify future habitat improvement opportunities.	
Big Game Wildlife Species to Benefit: Mule Deer	

Implementation Schedule (Month/Day/Year): Project Start Date: March-April 2013 Project End Date: December 31, 2014	Environmental Compliance: NEPA Completed: YES[] No[] N/A[X] Projected Completion Date: _____ 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 Updated by: <u>Carl Lutch</u> Projected Completion Date: <u>December 2014</u>
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PROJECT FUNDING

Special Big Game License Tag Funds Requested:	\$ 5,500
Cost Share or Matching Funds:	\$ 5,500
Total Project Costs:	\$ 11,000

PARTICIPANT INFORMATION

Applicant (please print): Carl Lutch	Address: 3500 S. Lake Mary Rd. Flagstaff, AZ 86001	E-mail: clutch@azgfd.gov
Telephone: (928) 214-1242		Date: 9/1/2012

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

Project has been coordinated with: US Forest Service-North Kaibab Ranger District; Arizona Wildlife Federation; AZ Deer Association; Safari Club International Foundation

NEED STATEMENT – PROBLEM ANALYSIS:

In 1996, approximately 50,000 acres were burned by the Bridger-Knoll Fire on the Westside of the North Kaibab deer winter range. Additionally, the Slide Fire in 2006 re-burned approximately 6,000 acres of the Bridger-Knoll Fire by Slide Tank. What is particularly bad about these fires is they burned a large part of the winter forage base that the Kaibab deer herd depend on to carry them through the winter. These forage plants are not fire hardy and readily died. On top of that, cheatgrass a bad evasive grass, established itself on the burned areas of both the Bridger-Knoll and Slide fires. Cheatgrass provides virtually no benefit to wildlife, especially deer. Cheatgrass is able to out-compete native plants by being able to grow sooner in the growing season, robbing moisture and nutrients from native plants. Other bad traits of cheatgrass are it quickly becomes a monoculture and it cures earlier in the year when native plants are still growing. Fires can then occur earlier in the season, which perpetuates and expands the cheatgrass cycle before native plants can re-establish themselves.

The US Forest Service-North Kaibab District, Arizona Game and Fish Dept and Arizona Deer Association joined forces to take on cheatgrass and restore the Westside forage base, which consists of Wyoming Big Sage Brush, Winterfat, Cliffrose and Four Wing Saltbush. Since 2007, approximately 4,500 acres of juniper grinding has taken place on the Westside, both in previously untreated areas with a good native browse base and in 50-60 year old juniper “pushes” where young juniper trees were invading again. In both areas, junipers were ground down to decrease plant completion for these high value forage plants.

Additionally, another approximate 4,500 acres were treated with a combination herbicide and native plant seeding to decrease or limit cheatgrass and give native plants a chance to establish. To date over \$1.1 million dollars have been expended on NEPA preparation, archeological surveys, herbicide and seed purchase and project implementation. Also, to date all the practical areas to treat within the original NEPA document have been treated. Research and monitoring by NAU-Rocky Mountain Research Station and Grand Canyon Trust is underway to evaluate and measure successes and failures of the Westside Project to date. Unfortunately, seeded native browse plants can take up to 5 years to germinate and grow, so the jury is still out for some treated areas. Once the best habitat restoration techniques are identified through monitoring, this knowledge can be applied to other areas to further improve the Westside winter range, both in and outside burned areas. However, to refine and identify where to treat next to benefit the Kaibab deer herd the most, more information needs to be obtained to make the best management decisions. This is where the satellite GPS collars come into play.

Missing information to make the best management decisions for the Kaibab deer herd is best obtained by putting GPS collars on the deer and learn directly from the deer the what’s, where’s and why’s.

PROJECT OBJECTIVES:

Management questions that would be answered include:

1. Are the deer using treated Westside project areas and to what extent?
2. Does deer use of treated areas vary by techniques used?

3. Do the Kaibab deer use specific winter areas and avoid some areas or do they spread out evenly over the whole winter range?
4. What impact on the available winter forage are the deer having, if any (which would hint of the carrying capacity of the Westside)?
5. How are the deer moving between summer & winter range?
6. Has fire changed historical deer movement patterns?
7. What are the mortality rates of the Kaibab deer to better run population models?
8. Are there new areas that can be enhanced to benefit the Kaibab deer? **We feel it is best to let the deer show managers where to improve rather than guessing where to improve next.**

GPS collars collect several locations per day compared to older technology VHS collars and the information obtained from GPS collars is far superior. With the costs of managing deer and improving habitat for wildlife being very costly, managers would obtain the information needed to fine tune and improve management decisions for the benefit of the Kaibab mule deer herd through the use of these GPS collars.

PROJECT DESCRIPTION AND STRATEGIES:

Capture 7 adult mule deer does with a 407 helicopter and attach store-on-board 1-yr GPS collars in March or April 2013, as part of the planned Westside deer health assessment. The GPS collars will have a 1-year lifespan, collecting 1-2 locations per day, have a VHS beacon, mortality sensors and have a timed-drop off mechanism allowing recovery. Collared deer will be monitored 4 times annually via fixed-wing aircraft to determine mortalities and proper collar functioning.

PROJECT LOCATION:

Project location is the Westside of the North Kaibab Ranger District in Game Management Unit 12A-West. See attached map.

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

U.S. Forest Service's North Kaibab Ranger District

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

YES[] NO[]

HABITAT DESCRIPTION:

Pinyon-juniper and Great Basin desert-shrub association dominate the winter range. Ponderosa pine, quaking aspen, mixed-conifer, and spruce-fir dominate the summer range. Elevations on winter range average 5,400 feet.

ITEMIZED USE OF FUNDS:

Special Big Game License Tag Funds

\$5,500 for helicopter flight time (3 hours @\$1,833 per hr) to capture 7 adult mule deer and attach store-on board GPS collars.

Cost Share/Matching Funds

Arizona Game and Fish Department: \$5,500 from North Kaibab Habitat Stamp Fund for additional helicopter flight time.

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

Arizona Game and Fish Department

PROJECT MONITORING PLAN:

Deer location data will be combined with available GIS data layers for Unit 12A-W, and then analyzed using new spatial models developed in collaboration with the Northern Arizona University Center for Ecosystem Sciences. These models predict probability of habitat use as a function of environmental/management variables, e.g., plant community type, fire history, historical and recent habitat treatments, and water developments, while accounting for spatial autocorrelation inherent in high-frequency location data obtained from GPS collars. Survival information will be used along with herd composition, harvest and periodic population estimates to generate greater accuracy in population models for use in setting hunt recommendations and guidelines for proper management of the Kaibab deer herd.

PROJECT MAINTENANCE:

N/A

PROJECT COMPLETION REPORT TO BE FILED BY:

The project completion report will be submitted by December 31, 2014 by Tom McCall, Steve Rosenstock and/or Carl Lutch.



Map of North Kaibab National Forest