

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

Game Branch / HPC Project Number:	14-405
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PROJECT INFORMATION

Project Title: Determining appropriate permit levels from camera trap data.	
Region and Game Management Unit: Unit 40B	
Local Habitat Partnership Committee (LHPC): • SouthWest	Was the project presented to the LHPC? YES[X] NO[]
Has this project been submitted in previous years? YES[] NO[x] If Yes, was it funded? YES[] NO[] → Funded HPC Project #(s):	
Project Type: Management investigation.	
Brief Project Summary: Collar and ear tag Desert Bighorn sheep in the Gila and Tinaja Altas Mountains to determine water utilization rates and efficacy of trail cameras for setting the number of permits. Compare sources of bias and cost with this technique to traditional helicopter survey method.	
Big Game Wildlife Species to Benefit: Bighorn Sheep	

Implementation Schedule (Month/Day/Year): <u>Project Start Date:</u> 2/1/15 <u>Project End Date:</u> 8/1/16	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 Completed by: <u>Scott Fischer</u> Projected Completion Date: 8-1-15
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PROJECT FUNDING

Special Big Game License Tag Funds Requested:	\$ 10,000
Cost Share or Matching Funds:	\$ 34,000
Total Project Costs:	\$ 43,000

PARTICIPANT INFORMATION

Applicant (please print): Scott Fischer	Address: 9140 E. 28 th Street, Yuma AZ 85365	E-mail: sfischer@azgfd.gov
Telephone: (928) 580-7533		Date: 8/21/14

AGFD Contact and Phone No. (If applicant is not AGFD personnel):
Project has been coordinated with: John Hervert (AZGFD), Randy English (MCAS Yuma Marine Corp)

NEED STATEMENT – PROBLEM ANALYSIS:

The methodology of this proposed study would test the efficacy of trail cameras as a survey method. Currently identification of individual sheep at a camera trap station is highly subjective with regards to the individual observer reviewing the pictures. This study would provide insight as to the level of error associated with identification of individual animals at camera traps and will yield information on the frequency bighorn visit water developments. This data will provide guidance in regards to the correct interpretation of the camera trap data. We will test whether camera traps are a good alternative and or supplement to aerial surveys in regards to setting permit levels.

The cost associated with aerial survey of bighorn sheep populations continues to rise and may reach a point very soon when this option is cost prohibited for low density bighorn populations. We propose to investigate how often bighorn visit water developments and how far they travel between existing waters.

Location data from GPS equipped ewes will also provide insight relative to our current distribution of waters within these mountain ranges. We will develop recommendations for additional waters using the known seasonal habitat use patterns derived from these data.

PROJECT OBJECTIVES:

- Validate the use of trail cameras as a survey tool by investigating sources of bias.
- Provide data on water requirements to better plan for future water catchment projects.

PROJECT DESCRIPTION AND STRATEGIES:

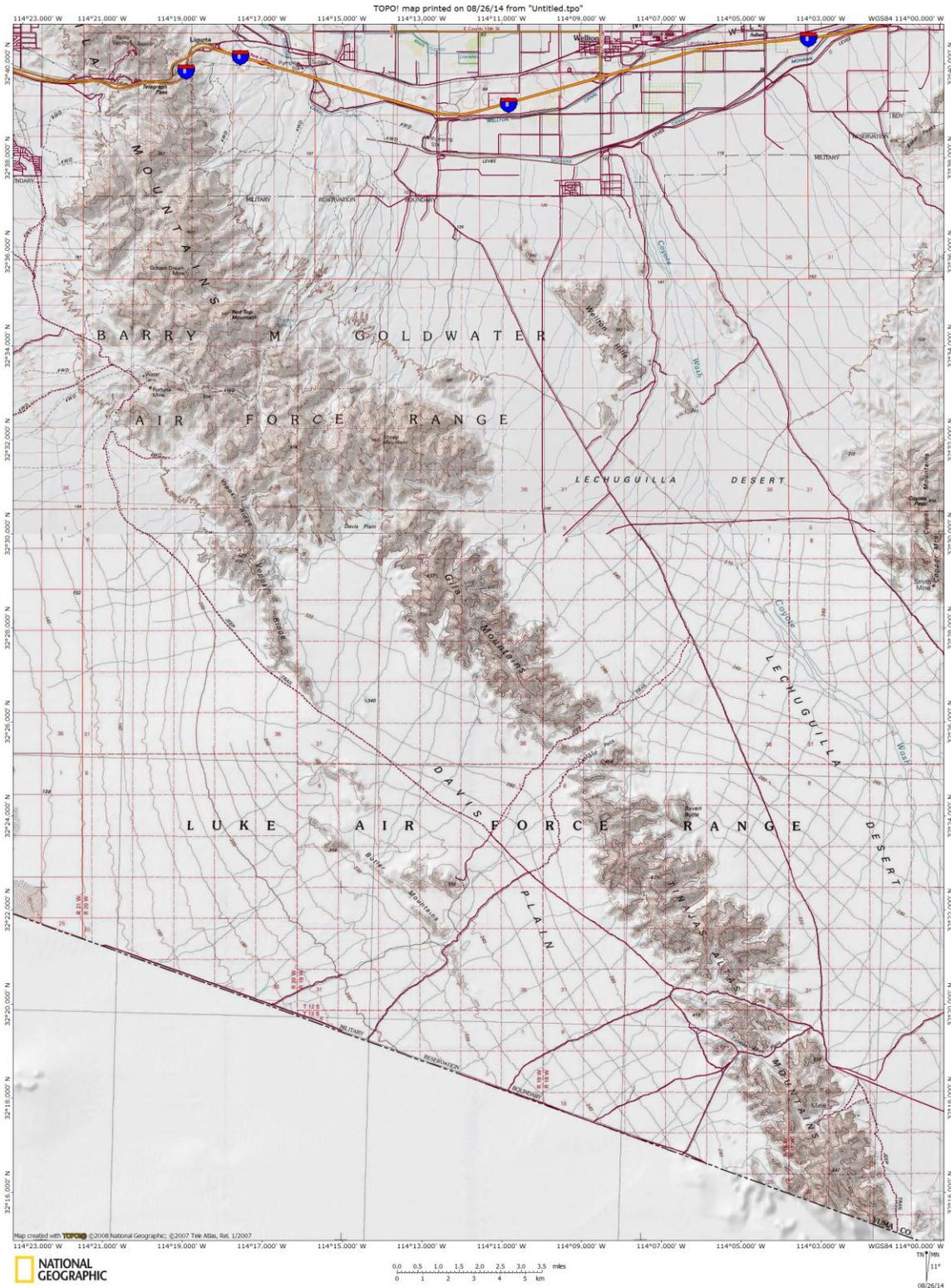
Marking bighorn sheep will allow us to determine how often individual bighorn come to water. Marked bighorn will allow us to determine how many individual rams are caught in camera traps. AGFD will utilize helicopter and volunteer ground spotters to find and capture Desert Bighorn Sheep in the Gila and Tinaja Altas Mountain ranges. We will deploy up to ten GPS collars on ewes. Any ram captured will be ear-tagged (both ears) only. Biological samples will be collected during capture efforts to determine overall herd health and for disease monitoring purposes.

After capture efforts have been completed, all permanent water sources in the Gila and Tinajas Altas Mountain ranges will have a trail camera placed to monitor sheep use. Camera traps have been run for the past two years and these data will serve as a comparison for this effort. Cameras will be monitored monthly and pictures downloaded and stored for analysis. This camera data will be checked against the collar location data to determine if sheep are visiting waters and failing to be captured in pictures. Ear tags will assist in determining individuals in pictures as well as serving to eliminate bias associated with identifying individual rams. Both methods (collars/ear tags and pictures) will be analyzed to determine how often sheep visit and utilize water sources across different seasons and varying habitat condition. The data collected during this investigation will be used to develop a camera trap protocol. This procedure will be used to estimate the number of rams caught by the camera trap and will ultimately help us determine the appropriate number of permits to offer. This method is far less expensive than helicopter aerial surveys. Our need to survey bighorn sheep populations continues to grow as we add new populations through translocation, however our budget is not rising to keep pace with the increased demand and the cost per hour has nearly doubled

in recent years.

PROJECT LOCATION:

Gila and Tinja Altas Mountain Ranges, GMU 40B West.



LAND OWNERSHIP AT THE PROJECT SITE(S):

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

- DOD, Marine Corp. Barry M. Goldwater Range

*IF PRIVATE PROPERTY, IS THERE A COOPERATIVE BIG GAME STEWARDSHIP or
LANDOWNER AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?*
YES[] NO[] N/A[]

HABITAT DESCRIPTION:

Sonoran Desert, Colorado Subdivision

ITEMIZED USE OF FUNDS:

Special Big Game License Tag Funds

Helicopter, fuel truck: \$10,000

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

Ten GPS collars and air time: \$34,000

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

ADBSS volunteers (spotting target bighorn).

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

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

PROJECT MONITORING PLAN:

Cameras, habitat conditions, water catchment levels, and weather conditions will be monitored throughout the length of the project to ensure adequate data for analysis

PROJECT MAINTENANCE:

Cameras, weather conditions, and habitat conditions will be monitored by Scott Fischer (WM for 40B) for the life of the study at monthly intervals.

Water levels will be monitored by volunteers and Scott Fischer monthly throughout the study.

PROJECT COMPLETION REPORT TO BE FILED BY:

Scott Fischer

WATER DEVELOPMENT PROJECTS (please use the worksheet below):

TREE CLEARING/REMOVAL PROJECTS (please use the worksheet below):