

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

Game Branch / HPC Project Number: 13-507

PROJECT INFORMATION

Project Title: Santa Catalina Bighorn Restoration Project – Administrative Houndsman 2014-2015

Region and Game Management Unit: Region 5 (GMU 33)

Local Habitat Partnership Committee (LHPC):

- Tucson

Was the project presented to the LHPC?

YES NO

Has this project been submitted in previous years? YES NO* Not the houndsman component
If Yes, was it funded? YES NO→ Funded HPC Project #(s): 11-409, 12-507

Project Type: Predator Management on Transplanted BHS

Brief Project Summary: The primary goal of the overall project is to restore a viable population of bighorn sheep in the Santa Catalina Mountains. A key component to making this happen is to address one possible limiting factor, predation by mountain lions. The primary goal of this specific project is to reduce mountain lion predation on transplanted bighorn sheep in the Santa Catalina Mountains by using an administrative houndsman to remove specific mountain lions which have preyed on bighorn sheep, until bighorn numbers increase to be able to sustain natural predation.

Big Game Wildlife Species to Benefit: Bighorn Sheep

Implementation Schedule (Month/Day/Year):

Project Start Date: November 2014

Project End Date: November 2016

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: Yes No
N/A

To be Completed by: _____

Projected Completion Date: _____

PROJECT FUNDING

Special Big Game License Tag Funds Requested: \$ 30,000.00

Cost Share or Matching Funds: \$ 167,000

Total Project Costs: \$ 197,000.00

PARTICIPANT INFORMATION

Applicant (please print):

Martin Guerena &
Ben Brochu (Wildlife
Managers)

Address:

Arizona Game and Fish Department
555 N Greasewood Rd.
Tucson, AZ 85745

E-mail:

mguerena@azgfd.gov
bbrochu@azgfd.gov

Telephone: 520-591-6307

Date: 8/31/13

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

Project has been coordinated with: AGFD Personnel, Catalina Advisory Committee, AZ Desert Bighorn Sheep Society

NEED STATEMENT – PROBLEM ANALYSIS:

Mountain lions (*Puma concolor*) and bighorn sheep (*Ovis canadensis*) are native species that have shared a long history in the southwest and most of western North America. Their predator-prey relationship dates back thousands of years and although deer are typically recognized as the primary prey of mountain lion, bighorn sheep are also known to be a key prey item. However, lion predation on bighorn sheep has caused concern in past years because of declining bighorn sheep populations and the fear that lions may drive populations to extinction. Predation by mountain lions has been identified as a leading cause of mortality in some populations, and there is now a growing consensus that lion predation can limit populations and potentially drive small populations to extirpation.

The AGFD has developed the “Santa Catalina Adaptive Mountain Lion Management Plan” as a method for dealing with mountain lions in the Catalinas, if they should be found to be a limiting factor on the bighorn population. This plan is our strategy to address one possible limiting factor, predation by mountain lions, which may hinder the main objective of restoring a viable population of bighorn sheep in the Santa Catalinas.

PROJECT OBJECTIVES:

- Restore bighorn sheep into unoccupied sheep habitat.
- Reduce mountain lion predation on transplanted bighorn sheep in the Santa Catalina Mountains by using an administrative houndsman to remove specific mountain lions that prey on bighorn sheep until a viable population of bighorn sheep becomes established.
- The use of an administrative houndsman and removal of specific mountain lions that prey on bighorn sheep will be reevaluated after 2 years of the project start date by the advisory committee and modified accordingly if needed.

PROJECT DESCRIPTION AND STRATEGIES:

Beginning in November of 2013, 30 bighorn sheep will be captured and released into the Santa Catalina Mountains. All 30 bighorn sheep will be fitted with satellite GPS collars to provide real time location and mortality data. The expected collar life is 2 years. Sheep will be monitored daily via internet and mortalities will be investigated immediately to determine cause-specific mortality, and specifically if lions are preying on bighorn sheep and if so, what effect predation may have on restoration efforts.

The Adaptive Mountain Lion Management Plan, approved by the Catalina Advisory Committee and AGFD Director, shall guide all actions for a period of two years. The plan will be modified accordingly if and as needed as data from collared sheep becomes available. A subsequent follow up plan will be created using gathered data from collars.

When mortality is detected on a collared sheep, managers will investigate kill sites immediately. A bighorn sheep mortality report will be completed at each site to assist in determining cause of mortality. If it is determined that the bighorn sheep mortality was caused by a mountain lion, the following would apply for the first two years of the restoration project.

- Every bighorn sheep kill confirmed to be caused by a mountain lion would result in pursuit and

removal by the administrative houndsman and/or removed by marksman. Other administrative methods as devised within policies A2.31 and 11.6 may be considered as part of our adaptive management strategy after discussion with the Santa Catalina Bighorn Sheep Advisory Committee (Advisory Committee). The committee will be informed of every mortality signal and every site analysis and any subsequent actions.

- The Advisory Committee will have quarterly meetings to evaluate the project and its strategies for years following the initial release. If needed, more frequent meetings may be necessary to make adaptive management suggestions or, in response to concerns as determined by the Committee.

PROJECT LOCATION: In Region 5, bighorn sheep will be released at several sites primarily into the Pusch Ridge Wilderness area (see Figure 2) east of Tucson in the Catalina Mountains (chiefly in T12S, R14-15E).

Figure 1: Location of the Santa Catalina Mountains near Tucson, AZ within GMU33

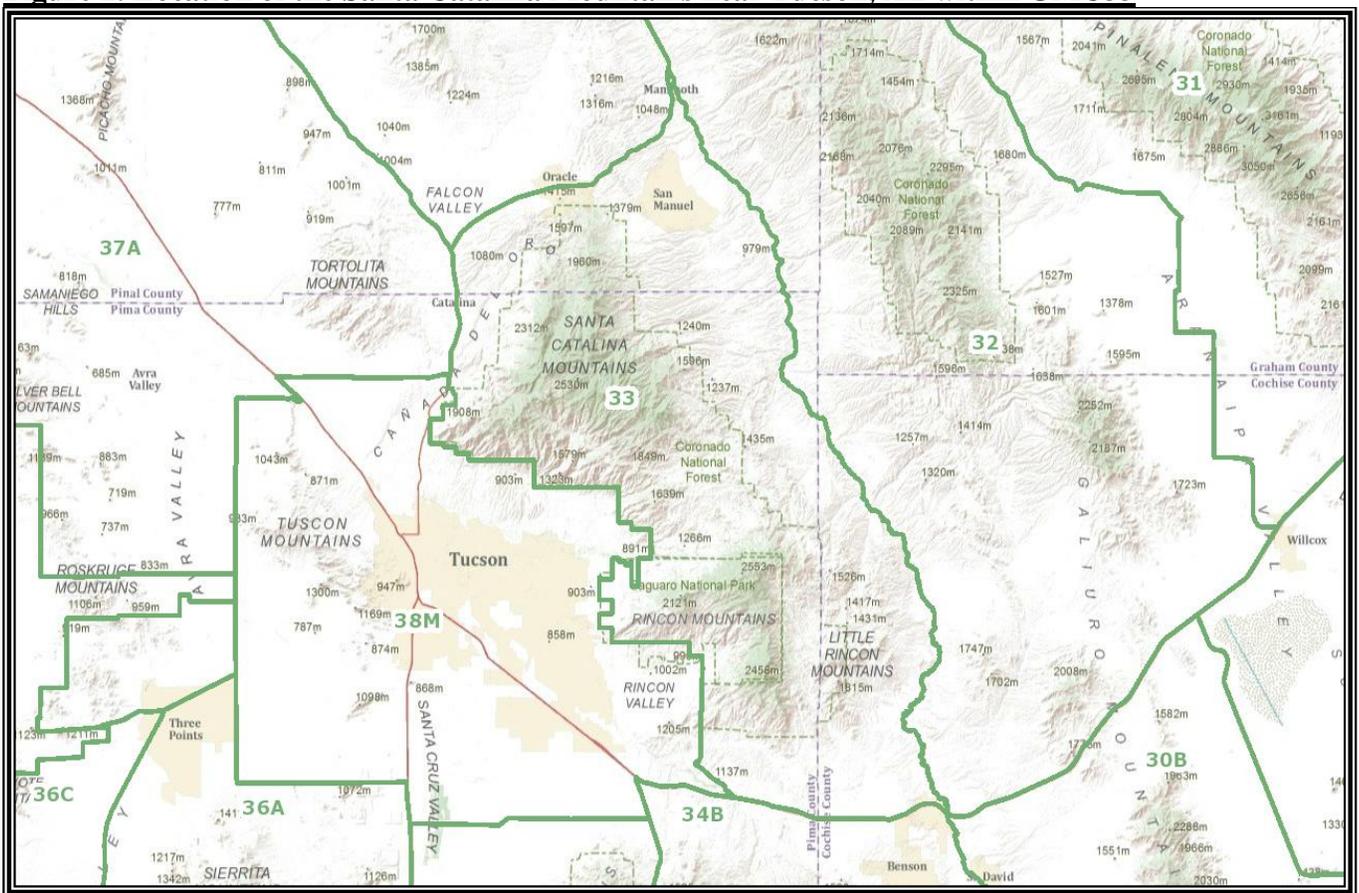
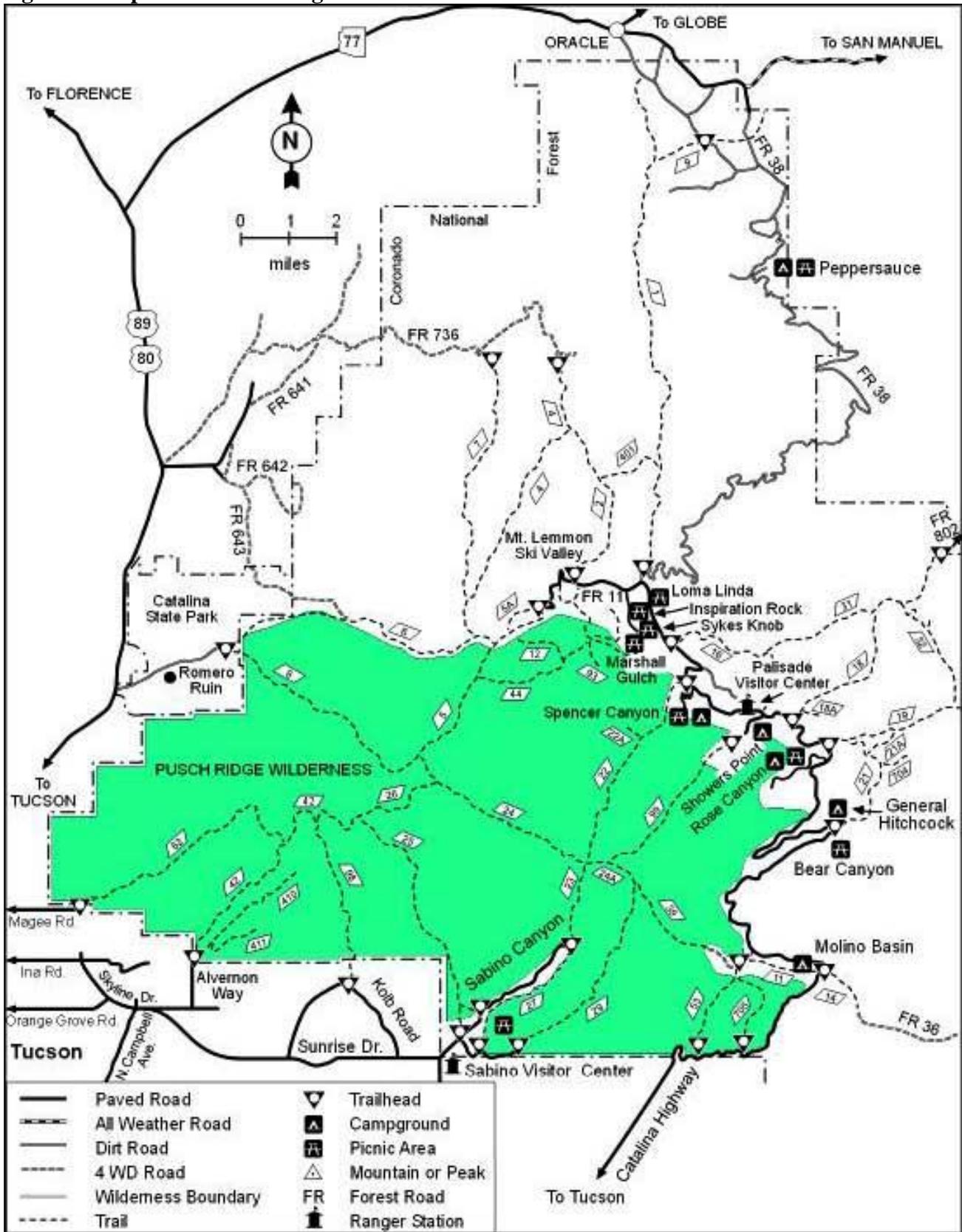


Figure 2: Map of the Pusch Ridge Wilderness Area in the Santa Catalina Mountains.



LAND OWNERSHIP AT THE PROJECT SITE(S):

The Pusch Ridge Wilderness area in Region 5 is public land managed by the Coronado National Forest, Santa Catalina Ranger District. Other areas nearby where desert bighorn sheep may relocate are situated on State Trust and US Forest Service land.

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

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

HABITAT DESCRIPTION:

The Catalina Mountains are located in south-central Arizona on the Coronado National Forest. Located to the south and west of the Catalinas is Tucson, a metropolitan area with a population in excess of 520,000 people. The Catalinas are roughly triangular in shape with an east-west base of about 20 miles and the apex approximately 20 miles north of that base. Elevations range from 2800 feet at the southwest base of Pusch Ridge to over 9000 feet at Mt. Lemmon. Within the area where most bighorn sheep were historically found, elevations seldom exceed 6000 feet (deVos 1983). Topography varies from the broad bajadas that surround the Catalina Mountains to sharply bisected canyons (Whittaker and Niering 1965).

The vegetative composition of the Catalinas has been well documented by Whittaker and Niering (1964, 1965, and 1975). Vegetative composition of this mountain range is unique in that it possesses a full sequence of plant communities from limited subalpine fir (*Abies lasiocarpa*) forests to large expanses of paloverde-mixed cacti desert. Vegetation of the Catalinas includes mountain coniferous forests, Mexican oak (*Quercus oblongifolia*) and pine (*Pinus spp.*)-oak communities of southern affinities, desert grasslands with affinities to the east and Sonoran Desert with affinities to the west and south. Flora of the Catalinas is rich and community species diversities are high. Species diversities increase toward lower elevations; desert-grasslands and deserts of lower mountain slopes are among the richest communities in the United States. Floristic diversity is higher in continental than maritime climates, as indicated by comparison of species diversities and community differentiation along topographic moisture gradients in the Catalinas. Based upon the classification system described by Brown et al. (1979), eight vegetative communities and 18 plant associations were identified within the Catalinas.

Precipitation in the Catalinas is quite variable from year to year. Mean annual precipitations at Tucson on the southwest, Oracle on the northeast side of the Catalinas, and the Mt. Lemmon summit are 11.42, 19.40, and 29.56 inches respectively (Western Regional Climate Center, 2011). Within the southwest portion of the Catalinas lies the Pusch Ridge Wilderness Area (PRWA)(Figure 2), which historically has held most of the bighorn sheep that occupied this mountain range. The PRWA was established February 24, 1978 by the Endangered American Wilderness Act. As established, this area consists of 22,837 ha. One of the major goals of the PRWA was to protect habitat for desert bighorn sheep (Anonymous 1978). The PRWA consists of steep, highly erosive areas with large, deep canyons that support riparian vegetation. Hogbacks rise from the desert floor to higher elevations forming vertical rock faces and spectacular geologic formations (Krausman et al. 1979).

ITEMIZED USE OF FUNDS:

Special Big Game License Tag Funds

Requested Amount	\$30,000.00
Administrative Houndsman	\$30,000.00

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

- Federal Pittman-Robertson funds \$140,000
- Wild Sheep Foundation (GIA Funds) \$20,000
- Gold Sponsor – AZSCI \$5,000
- (2) Bronze Sponsors (\$1,000ea) \$2,000

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

The ADBSS as well as the Catalina Advisory Committee are all beginning an active fundraising effort for the project as well. Electronic donations and sponsorship opportunities can be made on the ADBSS website. The Advisory Committee has also developed a project specific website which contains information for the public on the project. The site is: www.catalinabighornrestoration.org.

AGFD field staff from Regions 4 and 5 are planning to assist with the capture and release of 30 bighorn sheep from Region 4 to Region 5. Region 5 field staff and research branch will assist with monitoring of collared bighorn sheep. When mortality is detected on a collared sheep, Region 5 managers and an administrative houndsman will investigate kill sites immediately. A bighorn sheep mortality report will be completed at each site to assist in determining cause of mortality. Every bighorn sheep kill confirmed to be caused by a mountain lion would result in pursuit and removal by the administrative houndsman and/or removed by marksman. Other administrative methods as devised within policies A2.31 and 11.6 may be considered as part of our adaptive management strategy after discussion with the Advisory Committee.

The United States Forest Service, Santa Catalina Ranger District and Catalina State Park cooperators may assist where necessary for land access issues. The Advisory Committee will have quarterly meetings to evaluate the project and its strategies for years following the initial release. If needed, more frequent meetings may be necessary to make adaptive management suggestions or, in response to concerns as determined by the Committee.

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

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

PROJECT MONITORING PLAN:

Bighorn sheep will be monitored via satellite GPS collars. After the first year, aerial and ground surveys will be conducted to observe annual recruitment.

PROJECT MAINTENANCE:

No maintenance required.

PROJECT COMPLETION REPORT TO BE FILED BY:

Wildlife Managers (Martin Guerena and Ben Brochu)

WATER DEVELOPMENT PROJECTS (please use the worksheet below):

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