

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

Game Branch / HPC Project Number: 15-521

**PROJECT INFORMATION**

**Project Title:** Mule deer travel corridor identification across SR79 in prep for the Sun Corridor

**Region and Game Management Unit:** 5/37A and B

**Local Habitat Partnership Committee (LHPC):**  
• Tucson

**Was the project presented to the LHPC?**  
YES[X] NO[]

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

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

**Project Type:** Collaring project to inform wildlife corridor construction for future road widening decisions

**Brief Project Summary:**

This project entails the capture and GPS collaring of 20 mule deer (both sexes) to identify travel corridors across state route (SR) 79 between Tucson and Florence in prep for the Sun Corridor which is currently in the planning stages. Specific attribute data on habitat use and preference will also be gathered to inform future management decisions with regard to the placement of water sources in arid desert environments.

**Big Game Wildlife Species to Benefit:** Mule deer

**Implementation Schedule** (Month/Day/Year):

Project Start Date:  
September 1, 2015

Project End Date:  
June 30, 2018

**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: Ben Brochu

Projected Completion Date: once funded

**PROJECT FUNDING**

**Special Big Game License Tag Funds Requested:**

\$45,000 per year for two years

**Cost Share or Matching Funds:**

\$0

**Total Project Costs:**

**\$90,000**

**PARTICIPANT INFORMATION**

**Applicant** (please print):  
Ben Brochu

**Address:**  
555 N. Greasewood Rd.  
Tucson, AZ 85739

**E-mail:**  
bbrochu@azgfd.gov

**Telephone:** 520-591-7636

**Date:** September 1, 2015

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

**Project has been coordinated with:**  
Internal department personnel

### **NEED STATEMENT – PROBLEM ANALYSIS:**

In the next 15 years, the population in Arizona is expected to number greater than 10 million people. During this same time frame, America's population will exceed 375 million having grown more than 120-fold in only 250 years. Twenty "megapolitan" areas with economic and cultural potential equivalent to the largest and richest foreign countries are emerging in our nation. The design, political structure, and competitiveness of these vast regions will be the drivers of massive new economic and social opportunities. Arizona, with its unparalleled natural assets, spirit of free enterprise, and open, egalitarian culture is home to one of these megapolitan areas, one of these new American citistates – the Sun Corridor (Maps 1 and 2).

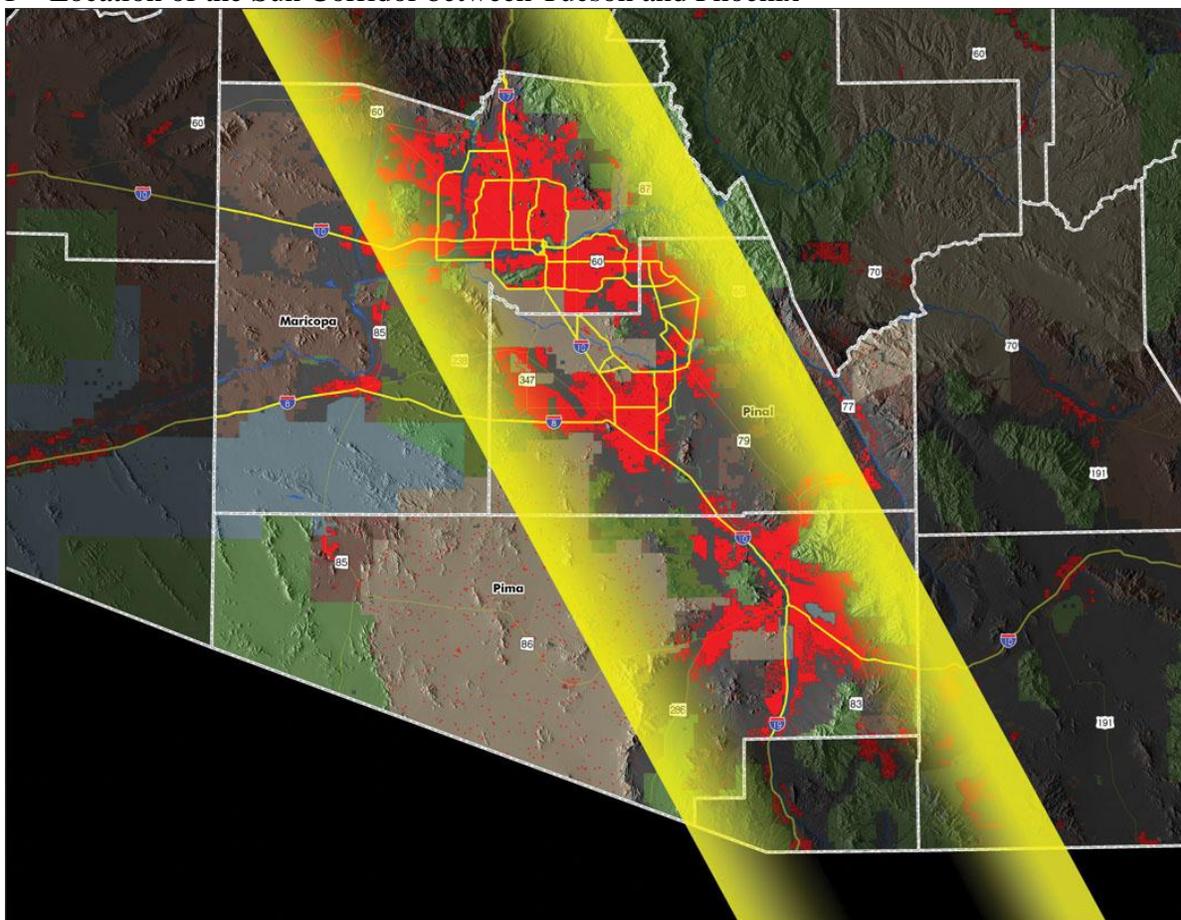
These megapolitan regions will power innovation, creativity, and socioeconomic gains in races with formidable competitors throughout Asia and Europe. With a megapolitan area that stretches from the Prescott region to the border with Mexico, Arizona, once a rural state dominated by ranching and mining, is faced with tremendous challenges.

One challenge is a need to plan for adequate, modern connectivity between metro Phoenix and Tucson as the expectation that a single four-lane interstate will serve the megaregion's two major hubs is unrealistic at best (Map 3).

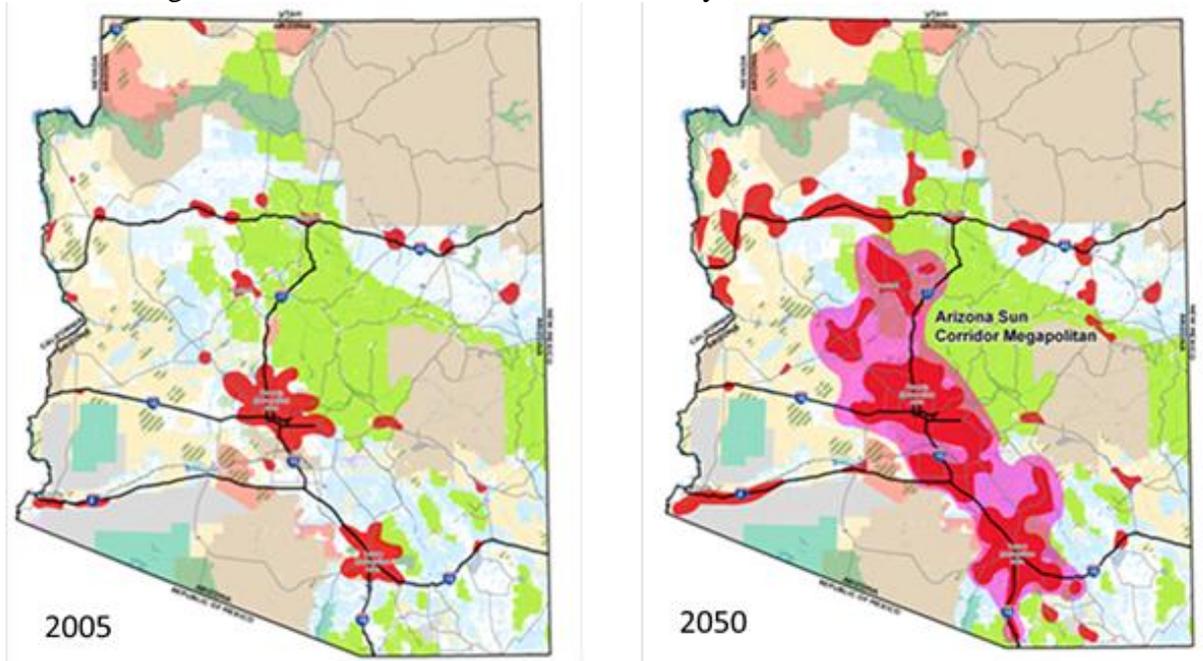
A second: water. According to many, water will be to the 21st century what oil was to the 20th. Thanks to 20th century planning, policies, and infrastructure, however, the Sun Corridor's water supply is more sustainable and secure than most people think. That is in part because water has been moved from place to place and mined in one area for the benefit of another. Still, drought, increasing population, climate change, and declining habitat health are sounding alarms in the Sun Corridor (Megapolitan – Arizona's Sun Corridor, 2008).

These challenges along with the increasing human population present significant challenges for the management of Arizona's wildlife, particularly for the megafauna. Managers must plan and begin gathering data today to be able to mitigate these challenges in the planning process over the next decade. Identifying travel corridors used by megafauna like mule deer will be particularly important to maintain metapopulation dynamics and genetic diversity as the human demand on these resources increases. Providing supplemental water is and will continue to be important in desert environments as natural water sources grow scarcer as the water table sinks deeper and deeper. Gathering detailed information on specific mule deer habitat attributes will help to inform the placement of these systems to maximize the benefits to this species.

Map 1 – Location of the Sun Corridor between Tucson and Phoenix



Map 2 – Predicted growth in the Sun Corridor in the next 35 years



Source: Maricopa Association of Governments

Map 3 – Map of Potential Connectivity Routes in the Sun Corridor



**PROJECT OBJECTIVES:**

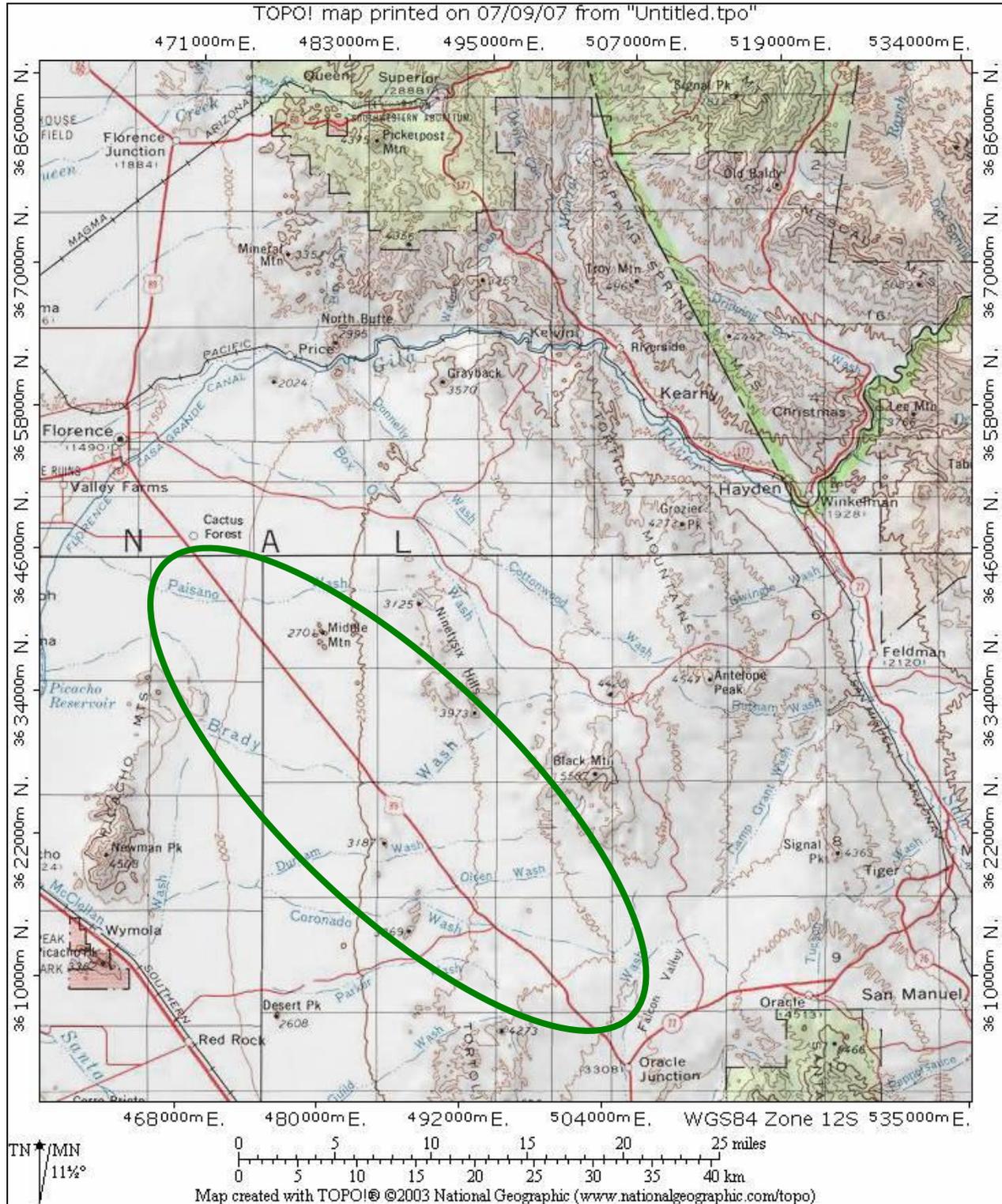
- To gather and identify specific travel corridor information along SR 79 between Tucson and Florence
- To have the data to inform future management decisions for the Sun Corridor expansion
- To gather data on habitat use and preference and to identify specific attributes to inform the placement of water developments in arid desert environments
- To quantify metapopulation dynamics between units 37A and 37B
- To gather disease and genetic samples while having the animals in hand

**PROJECT DESCRIPTION AND STRATEGIES:**

This project entails the capture and GPS collaring of 20 mule deer (est. 12 bucks and 8 does) over the course of two years (10 per year) in units 37A and 37B along SR 79. The majority of the deer will likely be captured using the helicopter net gun method however a dart gun may suffice for some. Deer will be monitored for 2-3 years to generate a sufficient data set for analysis.

**PROJECT LOCATION:**

- Project location in **GREEN** within units 37A and 37B



**LAND OWNERSHIP AT THE PROJECT SITE(S):**

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

- The project site is on land administered by the Arizona State Land Department, Tucson Field Office, 4455 S. Park Avenue Suite 101 Tucson, Arizona 85714 (520) 628-5480.

*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:**

Game management unit 37B is located in Pinal County, Arizona, southeast of Phoenix. Two main biotic community types, Sonoran Desertscrub and Semidesert Grassland, comprise the bulk of the habitat in 37B. The catchment locations in the 96 Hills are represented by both community types. Common vegetation includes various types of grama grasses (*Bouteloua spp.*), bush muhly (*Muhlenbergia porteri*), turpentine bush (*Ericameria laricifolia*), foothill palo verde (*Cercidium microphyllum*), mesquite (*Prosopis spp.*), jojoba (*Simmondsia chinensis*), desert hackberry (*Celtis pallida*) and fairy feather duster (*Calliandra eriophylla*). Average rainfall is approximately 12-15" and elevation ranges from approximately 2800' to 3500'.

**ITEMIZED USE OF FUNDS:**

Description of Cost or Activity	Year 1	Year 2
Expandable GPS Collars (20 @\$3500 ea. - 10 per year)	\$35,000	\$35,000
Helicopter Capture Costs (\$1000 per deer)	\$10,000	\$10,000
<b>Total</b>	<b>\$45,000</b>	<b>\$45,000</b>

Special Big Game License Tag Funds

\$45,000 per year for two years

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

None identified as of yet.

**LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:**

- Below is an all inclusive list of potential cooperators.
  - Mule Deer Foundation – funding and possible capture support
  - Arizona Deer Association – funding and possible capture support
  - AZSCI – funding and possible capture support

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

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

**PROJECT MONITORING PLAN:**

The deer would be monitored remotely via internet. Once the collars drop off, department personnel would recover them to download the remaining data.

**PROJECT MAINTENANCE:**

None

**PROJECT COMPLETION REPORT TO BE FILED BY:**

Ben Brochu

**WATER DEVELOPMENT PROJECTS** (*please use the worksheet below*):

N/A

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

N/A