

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

**PROJECT INFORMATION**

<b>Project Title:</b> Big Black Mesa Wildlife Water Development – Phase I		<b>Project No. 09-307</b>
<b>Region/GMU:</b> Region III/GMU 19B	<b>HPC:</b> Prescott	
<b>Project Type:</b> Phase I – 2 Wildlife water developments		
<p><b>Project Description:</b> The Big Black Mesa water development project seeks to re-establish well-distributed permanent water on a 100 square-mile mesa in Game Management Unit 19B. Phase I of this plan proposes 2 wildlife water developments, which includes the construction of 1 new water catchment and the redevelopment of the highest-prioritized existing water catchment.</p> <p>Existing waters in this pinyon-juniper woodland have become unreliable because of the limited capacity of old developments and increased use by elk. Ongoing drought-like conditions have eliminated the dependability of earthen livestock tanks while existing Arizona Game and Fish Department (AGFD) water catchments from the 1950-60's have insufficient capacity to meet wildlife demands during summer months without water hauling. In this landscape approach, 3 phases will redevelop exiting facilities in a prioritized order over multiple years to supply predicted wildlife requirements. The Big Black Mesa water development project's goal and phased objectives are presented in an attached report.</p>		
<b>Wildlife Species to Benefit:</b> mule deer, elk, javelina		
<b>Possible Funding Partners:</b>		
<b>Implementation Schedule:</b> <b>Beginning:</b> August 2010 <b>Completed:</b> June 2011	<b>NEPA Compliance: (if applicable)</b> <b>Completed: Yes</b> ___ <b>No</b> <u><b>X</b></u> <b>Projected Completion Date:</b> May 2010	

**PROJECT FUNDING**

<b>SBG Funds Requested:</b> \$ 74,720.00
<b>Cost Share Funds:</b> \$ 45,400.00
<b>Total Project Costs:</b> \$ 120,120.00

**PARTICIPANT INFORMATION**

<b>Applicant:</b> William D. Ough (please print) <b>Telephone:</b> 928-636-0106	<b>Address:</b> 5325 N Stockton Hill Rd. Kingman, AZ 86401
<b>AGFD Contact and Phone No.</b> (If applicant is not AGFD personnel)	
<b>Coordinated with:</b> Joe Currie, Development Branch, AGFD Linda Jackson, Chino Valley District Ranger, Prescott National Forest	<b>Date:</b> 08/19-26/2009
<b>Applicant's signature:</b>	<b>Date:</b> 08/31/09

**SEND COMPLETED APPLICATIONS TO:**

**Game Branch  
AZ Game and Fish Dept.  
5000 W. Carefree Highway  
Phoenix, AZ 85086**

**WAS PROJECT PRESENTED TO THE LOCAL HPC?      YES   X\*                        NO**

\*Note: The new water development was presented and supported by the HPC several years ago. The redevelopment of the existing catchments has not been discussed formally at a recent meeting.

**HAS PROJECT BEEN SUBMITTED IN PREVIOUS YEARS? IF SO WAS IT FUNDED?**

This project has not been submitted previously.

**NEED STATEMENT/PROBLEM ANALYSIS:**

AGFD water developments, earthen livestock tanks, natural seeps and potholes provide essential wildlife water on Big Black Mesa and its adjacent grassland (Figure 1). Historically, these waters met wildlife requirements, however in the past 8 years, only the AGFD developments and 2 seeps were permanent water sources. With the possible exception of Springfield tank, all other earthen tanks were dry during in August 2009, an increasing trend. Upper and Lower Limestone tanks which were stocked and managed as fisheries in the 1980s, continued to be seasonally undependable. Although the 2 seeps (springs) were viable, their location and size limited their overall value to wildlife.

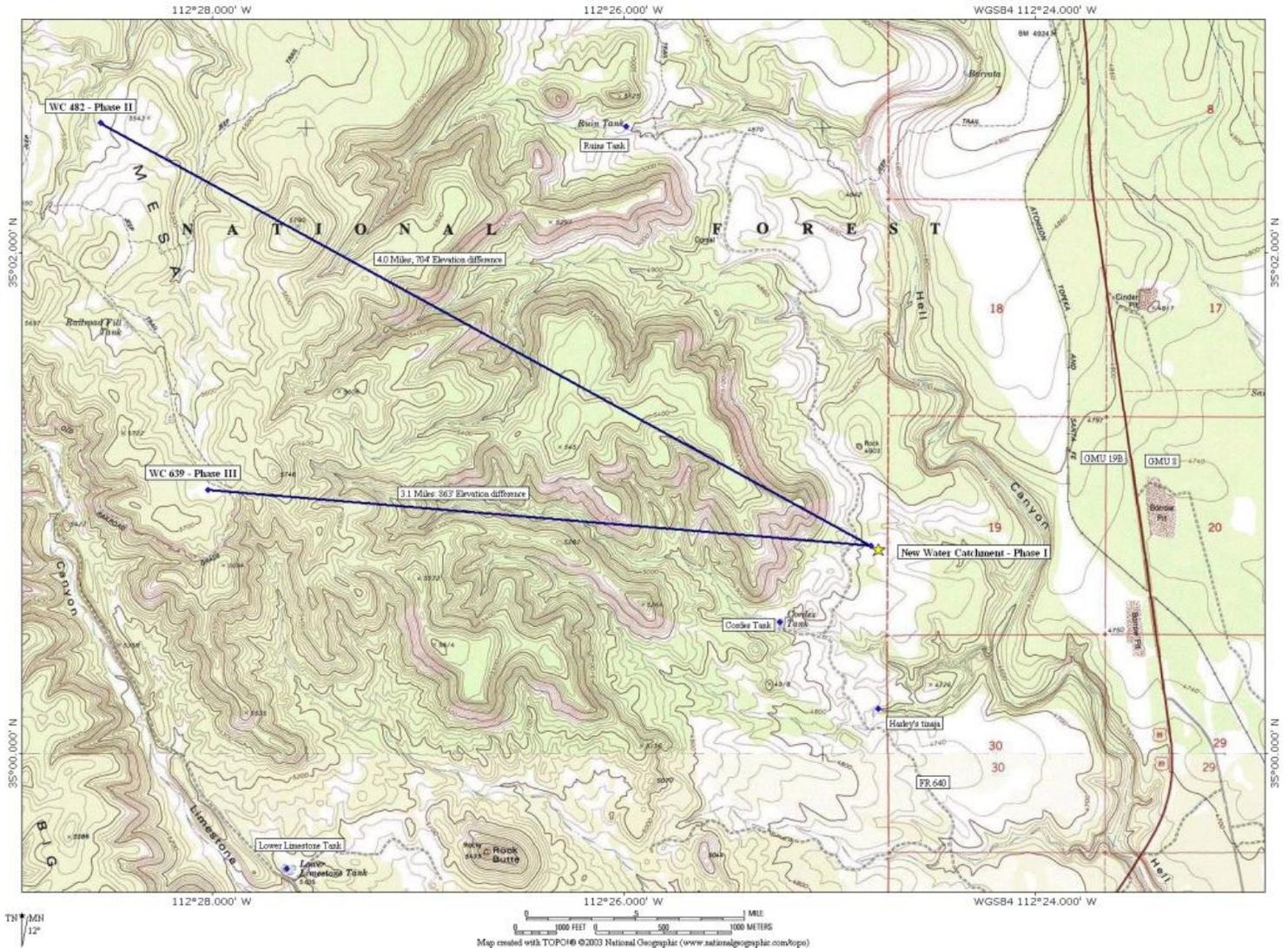
The 6 AGFD developments are the only permanent waters for wildlife within this area. All but 2 of these waters were constructed in 1950-60's and have not been modified to accommodate changes in wildlife populations and climate. Although maintained, their metal and concrete water collection aprons, storage vaults, walk-in drinkers and fences have exceeded their life expectance and only meet summer-peak demands by water hauling.

In contrast to decreasing alternative water availability and the developments' aging condition, elk utilization of these sources has increased their water demands. Resident and seasonal elk from the adjacent GMU 8 often exceed the present developments' storage capacities. This has resulted in continue monitoring and water hauling to AGFD developments. Since GMU 19B is within the "Limited Opportunity Elk Management Zone", the management goal is not increase the total elk numbers in the area. In 2008 and 2009, the multi-unit hunt area which includes GMU 19B provided annually 1,060 elk permits to sportsmen. This extensive hunting opportunity, coupled with public land ownership and access, support a good wildlife management strategy of supplying permanent water sources for all wildlife on this mesa.



Strategies. This water capacity would allow year-round habitat utilization by deer, elk and other wildlife.

Figure 2. Location of proposed new water development on east Big Black Mesa. Distance and elevation change to the closest permanent water are indicated.



The second highest priority is Drake #6 (WC 640), a 2,500-gallon water catchment built in 1963. Its present condition is shown in Figure 3. The AGFD Development Branch has indicated that modifying the existing concrete water vault and metal collection apron to increase capacity is neither viable nor cost effective. With continued elk utilization since the early 2000's, supplemental water has frequently been hauled to meet summer usage during recent years. In August 2009, the formerly reliable Upper Limestone tank at 2.4 miles distance completely dried again which resulted in Drake #6 the only water source on the western mesa.

The redevelopment design of Drake #6 is the same as the proposed new catchment. This will provide a permanent water source for all wildlife in the foreseeable future.

Figure 3. Water development Drake #6 (WC 640). Note the crumbling condition of apron's concrete supports as representative of its age.



**PROJECT OBJECTIVES:**

The objective of the Big Black Mesa wildlife water plan is a multi-phased development of permanent water over several years. This landscape approach will result in the accomplishing the goal of creating long-term permanent wildlife water for all the public-owned lands on this mesa.

The objective of Phase I as proposed in this grant application is A) the construction of 1 new water development on the mesa's eastern slope and B) the redevelopment of Drake #6 (WC 640) water development.

If funding is only available for 1 site, the construction of the new water on the eastern portion of BBM is the

highest priority. This location will create year-round water for mule deer, elk and other wildlife in a location where none presently exist. Water hauling can accommodate the Drake #6 requirements until it is redeveloped.

**PROJECT STRATEGIES:**

Project strategies are:

- PNF to complete NEPA requirements on all 5 sites (including a 6<sup>th</sup> in adjacent GMU 8) by the projected May 2010
- AGFD Development Branch construction of water developments to the following standards:
  - 2 – 18’ dia. Ring tanks
  - 3’ X 4’ Walk-in trough
  - 24’ X 72’ Apron
  - Pipe rail fence (existing size ~200’ X 200’)
  - Elk Fence (around apron)

This would have a capacity of approximately 11,500 gallons. This is designed so once full that it would provide water for a full year without any additional precipitation.

**PROJECT LOCATION:**

Big Black Mesa is located in north-central Arizona, about 20 miles north of Prescott, Arizona. All of the proposed water developments are located and accessed on lands managed by the Prescott National Forest

Phase I water development locations are:

1. New Development Site (final site determined by NEPA)

GPS Coordinates:

WGS 84

N 35° 0.828”

W 112° 24.779”

Legal Description: NE ¼ of SE ¼ of Section 24, T19N, R2W

2. Drake #6 (WC 640)

GPS Coordinates:

NAD 27 CONUS      UTM 12      WGS 84

E      0359359      N 35° 03.305”

W      3880039      W 112° 32.575”

Legal Description: SE ¼ of SE ¼ of Section 2, T19N, R3W

**LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner’s name):** Prescott National Forest, USFS

**IF PRIVATE PROPERTY, IS THERE A STEWARDSHIP AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?** N/A

**HABITAT DESCRIPTION:**

Big Black Mesa is a prominent limestone mesa supporting a pinyon-juniper woodland habitat. Whereas its southern and western slopes emerge into high-desert grassland, the adjacent northern and eastern habitats are a continuation of pinyon-juniper woodlands. Elevation ranges from 4,507 feet in grasslands to the mesa’s

height of 6,067 feet, with a mesa averaging about 5,800 feet.

The grasslands are dominated by grama grasses, shifting to juniper woodland and mountain mahogany-cliffrose chaparral closer the mesa's escarpment. The upper portion of the mesa is represented by old-growth pinyon-juniper woodland and secondary juniper growth resulting from 1950-60 juniper removal projects. The vegetative type is reflective of the 12-14" annual precipitation pattern, including winter snowfall.

A botanical survey of the Limestone grazing allotment was completed in 1995 for the Chino Valley Ranger District, PNF. This grazing allotment encompasses the lands managed by the PNF on this mesa.

**ITEMIZED USE OF FUNDS:**

Anticipated cost of project components and cooperator cost-share dollars:

	<u>Cost-share</u>	<u>Grant</u>
• <u>HPC FUNDING</u>		
Material cost for both proposed developments:		\$ 74,720.00
• 2 – 18' dia. Ring tanks	\$ 19,845.00	
• 3' X 4' Walk-in trough	\$ 3,270.00	
• 24' X 72' Apron	\$ 5,245.00	
• Pipe rail fence (existing size)	\$ 4,500.00	
• Elk Fence (around apron)	\$ 3,500.00	
• Misc. materials and plumbing	<u>\$ 1,000.00</u>	
• <u>Total Materials per site</u>	<u>\$ 37,360.00</u>	
• <u>Total for Both Sites:</u>	<u>\$ 74,720.00</u>	
• <u>Arizona Game and Fish Department - Development Branch</u>		
o Installation (labor and engineering) (\$ 20,000.00 per site X 2 = \$40,000.00)	\$ 40,000.00	
• <u>Prescott National Forest USFS</u>		
o NEPA requirements (\$10,000.00/6 sites = \$ 3,400.00/2 sites)	\$ 3,400.00	
• <u>Arizona Game and Fish Department - Region III</u>		
Wildlife Manager support in grant preparation, project planning, Agency/field coordination and implementation	<u>\$ 2,000.00</u>	
<u>TOTALS</u>	\$ 45,400.00	\$ 74,720.00

TOTAL PROJECTED COST (Phase I – 2 developments): \$ 120,120.00

**LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:**

Arizona Game and Fish Department:

- Provide coordination and technical support
- Provide construction equipment and labor for developments
- Provide field support during NEPA and construction
- Provide continued maintenance of water developments

Prescott National Forest:

- Provide NEPA requirements

**PROJECT MONITORING PLAN:**

- Seasonal water inspections will monitor wildlife use
- Annual winter wildlife surveys will document wildlife observations and population trends among mule deer, elk and javelina

**PROJECT MAINTENANCE:**

- The Wildlife Manager for GMU 19B, Region III, AGFD will conduct seasonal inspections
- If needed, major repairs will be done by the AGFD Development Branch

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

The project complete report will be by the Wildlife Manager for GMU 19B, Region III, AGFD.

**WATER DEVELOPMENT PROJECTS (see attached worksheet):** Worksheet Attached

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

**ARIZONA GAME AND FISH DEPARTMENT**  
**WATER DEVELOPMENT WORKSHEET**

**PROJECT NAME:** Big Black Mesa Wildlife Water Development – Phase I

- 1) **Is the water development listed as a priority in the most recent “Wildlife Water Development Annual Implementation Schedule?”** The “East Big Black Mesa” development is listed on the Schedule, while the Drake #6 (WC 640) was submitted as a priority in July 2009.
- 2) **Please list the Development Branch personnel and date coordinated with for this project.**  
Joe Currie visited the sites on August 19, 2009
- 3) **What is the estimated annual inches of precipitation for the area? (mark one)**  
 2-4    4-6    6-8    8-10    10-12    12-14    14-16    >16
- 4) **Is there a perennial water source available to big game within four miles of this project?**  
 YES (please complete #5 below)    NO (skip #5 below)
- 5) **For the accessible, perennial water source nearest this project:**  
Name of water source:  
Type of water source (catchment, spring, dirt tank, etc.):  
Ownership of water source:  
Distance in miles from project:
- 6) **Is the target wildlife species a result of transplant efforts?**    YES    NO

7) **Please list any special land management status for the project site (i.e. Wilderness, National Park, National Monument, etc). If private land, list landowner.**

There are no special land management statuses for the BBM sites.

8) **Please provide the following information about access to the proposed site:**

Type of access (mark one):  2x4 vehicles  4x4 only  foot only\*\*

\*\*If foot access only: Distance in miles:    Approx. hiking time:

**\*NOTE:** Although accessible by 2X4 vehicles, seasonal road conditions may require 4X4 vehicles

-- Does access to this site require crossing private or tribal lands?  YES  NO

-- Please describe any restrictions to public access:

None, all water developments on public lands with established public access

9) **Please list below (or on a separate sheet) the material type and dimensions of each component proposed to be added, modified, or repaired.**

For each development:

- 2 – 18' dia. Ring tanks
- 3' X 4' Walk-in trough
- 24' X 72' Apron
- Pipe rail fence (existing size, most ~200' X 200')
- Elk Fence (around apron)
- Misc. materials and plumbing

10) **Was a site visit completed?**  Yes  No

If Yes, please list personnel that attended and date.

08/19/09 :     Joe Currie, Development Branch, AGFD

08/26/09:     Linda Jackson, Chino Valley District Ranger, PNF

Jerry Bradley, PNF