

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

**PROJECT INFORMATION**

**Project Title: ELKHORN WILDLIFE WATER ENHANCEMENT PROJECT**

**Project No.  
09-513**

**Region/GMU: REGION V/ GMU 36C**

**HPC: TUCSON HPC**

**Project Type: Water Development; Retrofitting an existing well w/ solar panels and pumps, installing pipeline, adding two new wildlife water troughs and associated wildlife fencing.**

**Project Description:**

Two permanent sources of water will be added for wildlife in two locations, at and approximately 1/2 mile from a recently developed well. Solar panels and a solar pump will be purchased and installed at an existing well, recently install by Elkhorn Ranch (Ranch). State Big Game Funds will pay for the materials to install, install 3/4 mile of buried 1-1/4" water pipeline (160psi) to supply water (365 day/year) to 2 new fiberglass wildlife water troughs (buried to just above ground level) and installed inside of 2 wildlife friendly pipe-rail exclosures (to exclude use by landowner's horses). Volunteers from SCI Tucson, Rocky Mountain Elk Foundation, and Hunters Who Care will donate their labor equivalent to \$10,000 towards installation of materials for this project. This project will be entirely on private property, surrounded by STL. The landowners have been involved in renewing a Department Stewardship Access Agreement that guarantees access on the Elkhorn Ranch. Even if access were blocked on private property (and it has never been closed off here), the close proximity to accessible STL would still provide access for hunting close by to these new water sources.

The project area is high desert grassland habitat, along the foothills of the Baboquivari / Coyote Mountains in prime mule deer and whitetail habitat of the Altar Valley. Javelina also use this area. There are few year-round wildlife water sources available in the Altar Valley. Many of the dirt tanks no longer hold water perennially and landowners do not always leave water on for wildlife after livestock have left pastures. Wildlife are dependent on ephemeral water from springs in the mountains, seasonal run off, and water sources developed by ranchers. These new troughs will be functional 365 days a year. Troughs will be equipped with wildlife escape ramps so animals do not become trapped and contaminate water quality.

**Wildlife Species to Benefit: Mule Deer, Coues Whitetail, Javelina.**

**Possible Funding Partners: Safari Club International (Tucson), Rocky Mountain Elk Foundation, Hunters Who Care will provide labor for project phases: operating rental bulldozer, installing water troughs and wildlife fencing/livestock exclosures. Elkhorn Ranch: well and appurtenant structures.**

**Implementation Schedule: Solar Equipment / pump work will be contracted by landowner using SBG Funds as soon as funding is available. Installation of water pipeline, troughs and pipe-rail fence exclosures will be installed by volunteer labor during late winter Feb 2010 / through spring of 2010.  
Beginning: 01/10  
Completed: 07/10**

**NEPA Compliance: (if applicable) N/A**

**Completed: Yes \_\_\_ No \_\_\_  
Projected Completion Date:**

**PROJECT FUNDING**

<b>SBG Funds Requested:</b>	<b>\$ 32,130</b>	<b>,or \$17,130 to fund solar panels and pump now, and then follow up next cycle with remaining balance.</b>
<b>Cost Share Funds:</b>	<b>\$ 36,537.35</b>	
<b>Total Project Costs:</b>	<b>\$ 68,667.35</b>	

**PARTICIPANT INFORMATION**

**Applicant: Mark Frieberg**  
 (please print)  
**Telephone: 520-762-8172**

**Address:**  
**Arizona Game and Fish Department**  
**Attention: Landowner Relations Coordinator**  
**555 North Greasewood Road**  
**Tucson AZ 85745**

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

**Coordinated with: Jim Heffelfinger, Gabe Paz, Ben Brochu, Leonard Ordway, THPC**

**Date: 07/21/2009**

**Applicant's signature:**

**Date: 07/21/2009**

**SEND COMPLETED APPLICATIONS TO:**

**Game Branch**  
**5000 West Carefree Highway**  
**Phoenix AZ, 85086-5000**  
**rthompson@azgfd.gov**

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

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

Yes, it has been submitted in the past and it was not funded.

**NEED STATEMENT/PROBLEM ANALYSIS:**

Range conditions are good; however, there is very little permanent water in the immediate area to support year-round use by desert mule deer, coues whitetail, and javelina. Coues whitetail genetics in and around the Coyote mountains are highly touted. Water availability remains a limiting factor for whitetail densities in this potentially highly productive area. Mule deer numbers have steadily been declining in the west; it is believed these new waters can help boost their numbers locally.

## **PROJECT OBJECTIVES:**

**Adding these permanent water sources to high quality deer and javelina habitat far away from other permanent water sources should provide a good base water source for existing animals and their new offspring in the coming years. The Ranch is donating all the water through their new well and will provide some of the monitoring of the system. Currently, the Ranch does not use the water from this well except for several months when horses are in the nearby pastures. The potential is great for wildlife of all types to benefit from two completely new perennial water sources.**

**Currently water for the Ranch's horses is not left on after this pasture is vacated. The existing trough is three feet high and does not provide suitable water for juvenile javelina, as well as many other non-game species that are reliant on perennial water. Ranch personnel will no longer need to be on site daily to transport and operate a portable gas-generator; however, this solar panel system should provide steady, long-term, low maintenance water solution for both Ranch and wildlife needs.**

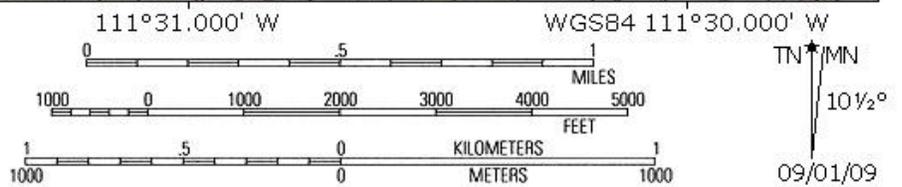
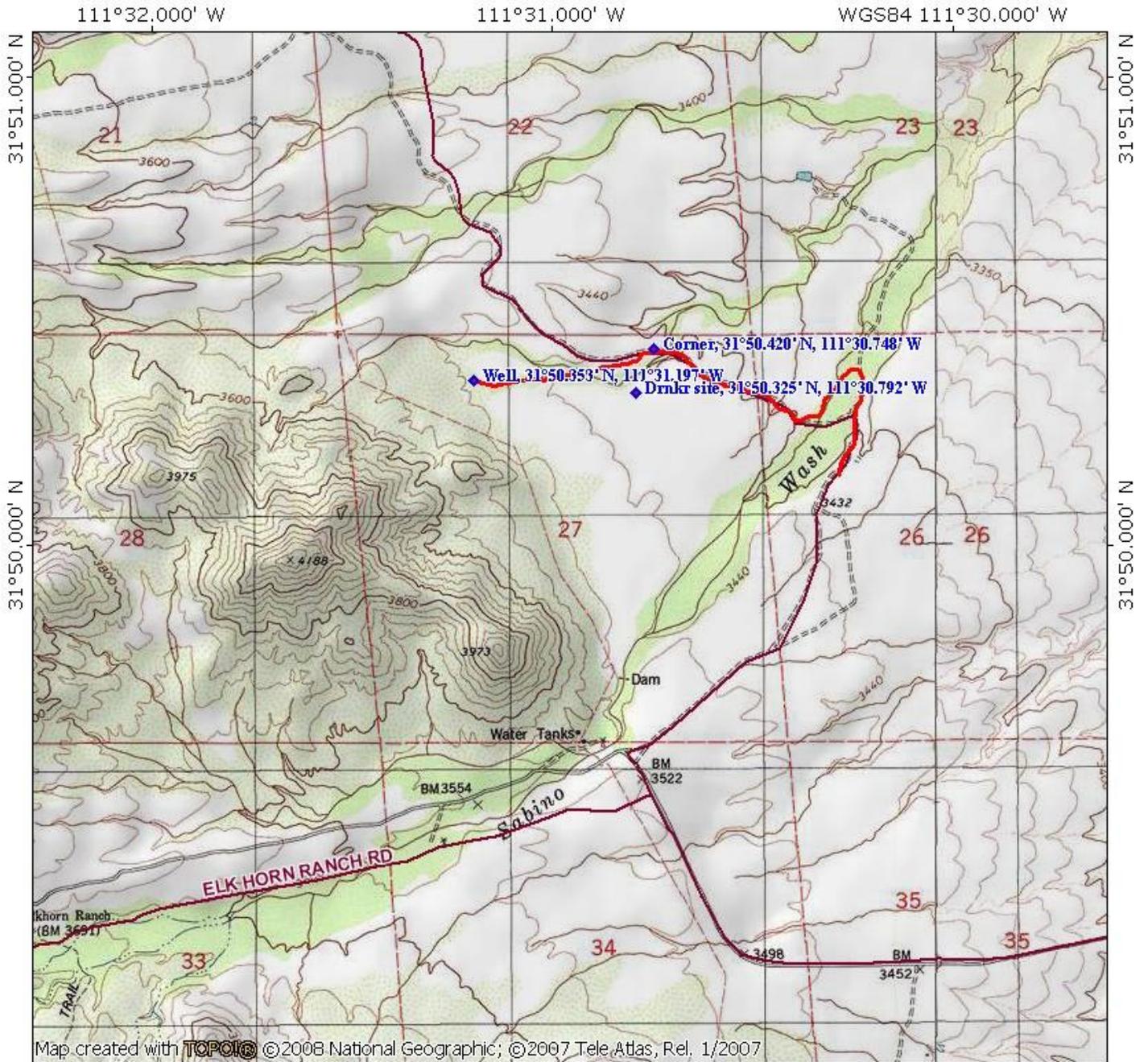
## **PROJECT STRATEGIES:**

**Elkhorn Ranch drilled and developed a well in 2006. The well is equipped with a 6000 gallon holding tank, a pump, which is currently powered by a gas-powered generator, and has a single 3 x 5 foot and 3 feet tall livestock drinker. This water system would be retrofitted with a new pump that can be operated by a gas generator, wind generator or solar panels. Solar panel will be used in this case and a pipeline will gravity feed to two wildlife drinkers in series. The project is a cost-share whereby the Ranch has drilled and developed the well and has sufficient storage on site. State Big Game funds would pay for the solar panels and new solar pump and their installation, and 2 wildlife troughs / pipeline and supplies and rental equipment to install these wildlife waters using volunteer labor provided by SCI of Tucson, Rocky Mountain Elk Foundation, and Hunter's Who Care volunteers. This would enable water to be available year-round for wildlife and ranch needs (whenever the pasture is used by horses), without daily well and generator operation by the rancher. In the event of problems with solar system, the rancher could still pump water by a gas generator using the new type pump.**

## **PROJECT LOCATION:**

**T 18 S, R 8 E, Section 27 160 acre NW 1/4, 40 acre NW, 10 acre NE  
Lat 31 degree 50 min 22 sec N, Long 111 degree 31 min 13 sec W  
Elevation 3477 feet  
Pima County parcel Bk 301 Map 39 Parcel 0090**

TOPO! map printed on 09/01/09 from "Untitled.tpo"



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

**Project will be entirely on Private Property:**

**Elkhorn Ranch, Inc.  
Charley and Mary Miller**



View of Storage Tank at New Well Site



View of Baboquivari Mountains from New Well Site, GMU 36C

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

**Yes, The Department has a Heritage Stewardship Access Agreement and a Habitat Stewardship Agreement in place for brush removal to benefit Scaled Quail in upland shrub-invaded grasslands.**

**HABITAT DESCRIPTION:**

**Desert Grasslands comprised of: alluvial benches with native grasses, forbs, cacti, and scattered mesquites, and mildly sloped arroyos. Brush cover in arroyos is predominately mesquite and calliandra species, a highly favored leguminous browse of deer.**

**ITEMIZED USE OF FUNDS:**

<b>MATERIALS</b>	<b>BIG GAME GRANT DOLLARS REQUESTED</b>	<b>DOLLAR MATCH AMOUNT</b>	<b>COST SHARE PROVIDED BY ELKHORN INC. AND / OR VOLUNTEER GROUPS</b>	<b>DOLLAR MATCH AMOUNT</b>
<b>Solar Panels, Pump, equipment labor</b>	<b>17,130.00</b>			

<b>installation charges</b>				
<b>WATERLINE 1-1/4" POLYPIPE 160psi Black direct burial 4500ft \$1.00/ft Plus additional misc pipe fittings, stucco coating for sunlight protection, etc. (Approx \$500.00)</b>	<b>\$5,000.00</b>			
<b>Dozer Rental with implement for installing pipe One Week</b>	<b>\$3,000.00</b>			
<b>PIPE and Sucker Rod, concrete and other materials for 2 Exclosures each (150'X150')</b>	<b>\$5,000.00</b>			
<b>2 Fiberglass Troughs for near ground level installation (Standards used by Dept.)</b>	<b>\$2,000.00</b>			
<b>Well Drilling, Casing, labor, (installed fall of 2006)</b>		<b>\$20,635.35&lt;&lt;</b>	<b>&lt;ELKHORN RANCH, INC.</b>	
<b>6000 Gallon Water Storage Tank</b>		<b>\$5,152.00&lt;&lt;</b>	<b>&lt;ELKHORN RANCH, INC.</b>	
<b>Tank Pad/prep of site work</b>		<b>\$750.00&lt;&lt;</b>	<b>&lt;ELKHORN RANCH, INC.</b>	
<b>Installation Labor For Waterline, troughs and Exclosures</b>			<b>SCI, &gt;&gt;&gt; ROCKYMOUNT AIN ELK FOUNDATION, HUNTERS WHO CARE&gt;&gt;</b>	<b>\$10,000.00</b>
<b>SUBTOTALS</b>	<b>\$32,130.00 SBG Requested</b>	<b>\$26,537.35 ELKHORN MATCH</b>		<b>\$10,000.00 SCI, RMEF, HWC MATCH in-kind LABOR</b>

**TOTALS:**

<b>State Big Game Dollars Requested:</b>	<b>\$32,130.00</b>
<b>ELKHORN INC. Cost Share</b>	<b>\$26,537.35</b>
<b>SCI, RMEF, HWC IN-KIND Labor</b>	<b><u>\$10,000.00</u></b>
<b>Total</b>	<b>\$68,667.35</b>

**LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:**

**Elkhorn Ranch (Ranch), Charley and Mary Miller, this project will be another on the Ranch in a series of habitat partnership projects that the Department and the Ranch are cooperating on. The Ranch is providing cost share, by providing water from their new well and storage system, as well as volunteering and providing support for volunteers when construction begins on their property.**

**SCI of Tucson, Rocky Mountain Elk Foundation, and Hunter's Who Care will donate hundreds of Volunteer hours using dozens of volunteers to complete this worthwhile project for all wildlife in the area including the target big game species mule deer, whitetail, javelina. Volunteers will operate heavy equipment to install (bury) pipeline, install water control devices, and troughs.**

**PROJECT MONITORING PLAN:**

**All Participants including the Elkhorn, SCI, Rocky Mountain Elk Foundation, Hunters Who Care along with AZGFD personnel will monitor the project over the long-term.**

**Department WMs and other personnel will check on water levels periodically when in the area. Many of the volunteers that helped with installation will also check function and report any problems to Ranch or Department. The Department monitors waters at least twice a year to check for the need to haul water to drying stocktanks in GMU36C, this water would certainly be added to a monitoring list. Also, water levels may be obtained during population estimations conducted by Department personnel.**

**PROJECT MAINTENANCE:**

**Elkhorn Ranch owners, along with all participants will have a great interest in the success of this project. The new Stewardship Agreement with the Ranch will stipulate which portions of the project the Ranch will be responsible for maintaining (Well, pump, and panels). The wildlife portions of the project will be Department and NGO's maintenance responsibly; however, the Department will need the Ranch to conduct routine observations of the function of the entire system when in the area. The well and storage system will be the Ranch's maintenance responsibility; however, if equipment is damaged the Department will work with the landowner to rectify problems and keep water on for wildlife.**

**Wildlife Manager, Sector Supervisor, Game Branch Personnel and Landowner Relations Coordinator (applicant) will all work with NGO's Volunteer Groups and the Ranch to assure success of these desperately needed perennial water sources.**

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

**Wildlife Manager Mark Frieberg, and Region V Landowner Relations Coordinator, Matt Walton.**

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

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

N/A

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

**PROJECT NAME:** ELKHORN WILDLIFE WATER ENHANCEMENT

1) Is the water development listed as a priority in the most recent "Wildlife Water Development Annual Implementation Schedule?" YES

2) Please list the Development Branch personnel and date coordinated with for this project.

N/A, Project is entirely on private property; Landowner will sign Habitat Stewardship Agreement through Landowner Relations Program, so there may not be any Development Branch maintenance required. Still, to be certain applicant will coordinate with Development Branch this September. Site visit will be completed (if needed) later this fall when other Development Branch site visits for Region V projects are planned, prior to HPC funding meeting.

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   X   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)   X   NO (skip #5 below)

5) For the accessible, perennial water source nearest this project: All Nearby Sources are Ephemeral.  
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   X   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.

**ELKHORN RANCH INC.**  
**Charley and Mary Miller**

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

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

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

The area where the well is at has a road directly to it. The areas where the proposed troughs will be placed are 1/4 mile and approximately 5/8 mile from the well site. Landowner will allow equipment across pasture (private property), until project is completed.

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

-- Please describe any restrictions to public access: **There are no restrictions, in fact the Road leading from highway 286 crosses mostly STL, and there is no blocked private property to the project site.**

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

2- 30" fiberglass troughs, suitable for 24" PVC system complete with 2- float systems for troughs \$2,000.  
4,500 ft of 1-1/4" direct burial, 160 psi, pipe. for water delivery from storage tanks to troughs \$1.00/ ft. \$4,500  
Plus additional misc pipe fittings, stucco coating for sunlight protection, etc. \$500.00

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ARIZONA GAME AND FISH DEPARTMENT

MARK FRIEBERG  
Wildlife Management Unit 868 & C  
Ranch V



MACHINE  
& PUMP SERVICE, INC.

August 17, 2009

868 N. Greenwood Road  
Tucson, AZ 85718  
Off. (520) 628-5926  
Fax (520) 628-5080  
E-Mail: mfrberg@azgfd.gov

TO REPORT A WILDLIFE  
MOTION CALL  
OFFERINGS CALL THE  
1-800-367-0700

Est. 1929

1101 East Foster Drive  
Tucson, Arizona 85705-9641  
(520) 792-0762  
Fax (520) 791-7674

ROC01 444  
ROC 110868  
ROC 13233  
ADWR 701

Elkhorn Ranch  
Attn: Mary  
27000 W. Elkhorn Ranch Road  
Tucson, Arizona 85736

Re: Solar Flex Pump System (Solar or Generator)  
(Reusing Existing Draw Pipe and Submersible wire)

REVISED ESTIMATE

- 10 gpm Grundfos solar flex pump
- 4-220 watts solar panel
- CU200 water level shut-off switch (optional)
- CU200 interface box (optional)
- IO 101 interface
- CP65C controller wire kit
- Pole mount (optional)
- Labor to pull existing pump and install new pump, assemble & hook up panels to pump
- 2 in. fuel gunchanges Zone D

Subtotal: \$16,476.08  
 Tax @ 3.97%: 653.28  
 Total: \$17,129.36 (Terms: 50% down. Balance due at completion)

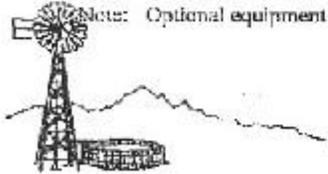
Respectfully,

*Dennis Myers*

Dennis Myers

Accepted by: \_\_\_\_\_ Date: \_\_\_\_\_  
(Please sign and return. Faxed copies acceptable)

Note: Optional equipment equals \$1,889.88.



COMPLETE WELL & PUMP SERVICE

*Edith W. J.*

- 10) Was a site visit completed?**  Yes  No  
If Yes, please list personnel that attended and date.

**The applicant (WM) has made a site visit with the Ranch and access specialist and local chapter of safari club.**