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

Game Branch / HPC Project Number:	11-610
Possible Funding Partners:	

PROJECT INFORMATION

Project Title: Horseshoe Ranch Water Management Project - Phase I

Region and Game Management Unit: Region VI, GMU 21

Local Habitat Partnership Committee (LHPC):
- Payson Natural Resource Committee

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

Has this project been submitted in previous years? **YES**[] **NO**[X]
If Yes, was it funded? **YES**[] **NO**[] → **HPC Project #**:

Project Type: Water Development – windmill repairs and redevelopment

Brief Project Summary: Repair 4 windmill water developments to restore water delivery and redevelop associated infrastructure to wildlife friendly standards. All water developments and associated infrastructure will be redesigned to maximize wildlife access, improve permanence and reliability, prevent wildlife entrapment and provide livestock watering. Placement of new troughs will be selected to promote livestock distribution across semi-desert grassland and desert scrubland habitat in GMU21.

Big Game Wildlife Species to Benefit: Pronghorn, Mule Deer, Javelina

Implementation Schedule (Month/Day/Year):

Project Start Date: Spring 2012

Project End Date: Summer 2012

Environmental Compliance:

NEPA Completed: YES[] No[X] N/A[]
Projected Completion Date: In process; anticipated by Dec 2011; only required for the addition of troughs in Task A & C

State Historic Preservation Office - Archaeological Clearance:
YES[] No[X] N/A[]
Projected Completion Date: : In process; anticipated by Dec 2011; only required for the addition of troughs in Task A & C

Arizona Game and Fish Department EA Checklist: N/A[]
To be Completed by: In process; anticipated by Dec 2011

Projected Completion Date: Summer 2012

PROJECT FUNDING

Special Big Game License Tag Funds Requested:	**$** 38,393.00
Cost Share or Matching Funds:	**$** 15,776.86
Total Project Costs:	**$** 54,169.86

PARTICIPANT INFORMATION

Applicant (please print): Jake Fousek	Address: AZ Game & Fish Department 7200 E. University Ave. Mesa, AZ 85207	E-mail: jfousek@azgfd.gov
Telephone: 928 583 4951		**Date**: August 31, 2011

AGFD Contact and Phone No.:
Jake Fousek 928 583 4951

Project has been coordinated with:
Tonto National Forest- Carol Engel, Andre Silva, Todd Willard
Bureau of Land Management- AFNM- Amanda James, Paul Sitzmann
AZ Game & Fish Dept.- Dana Warnecke (Habitat Specialist RVI, Kelly Wolff-Krauter (Habitat Program Mgr- RVI
AAF- Personal communication with Shane Stewart

NEED STATEMENT – PROBLEM ANALYSIS:
The Arizona Game and Fish Department (Department) recently acquired a ranch in central Arizona, within the Agua Fria National Monument, known as the Horseshoe Ranch. The Ranch is base property for two federal grazing allotments known as the Horseshoe (Bureau of Land Management (BLM), and the Copper Creek (Tonto National Forests (TNF) allotments. These 2 allotments represent roughly 65,000 acres of public grazing lands characterized by semi-desert grassland (known as the Agua Fria grasslands), Sonoran desert scrubland, chaparral and juniper savannah at higher elevations. These allotments include nearly 1/2 of the best pronghorn habitat in GMU 21, as well as habitat for mule deer, gambel quail and many other game and nongame species.

The Department, BLM and TNF recently established an interagency Memorandum of Understanding (MOU) that provides the legal framework by which the Department can sublease the grazing privileges for the 2 allotments and in collaboration with a livestock operator oversee the future management of livestock grazing on the approximately 65,000 acres of public grazing lands. The MOU also establishes an agreement between the agencies to initiate a collaborative planning process with all interested stakeholders to develop a Coordinated Resource Management Plan for two allotments which will guide future management of the aforementioned allotments and their associated natural resources.

In addition to the interagency agreements associated with the Horseshoe acquisition, the Department in coordination with the BLM, TNF and Prescott National Forest (PNF) developed an interagency strategy known as the Central Arizona Grasslands Conservation Strategy (CAGS) (see Map 2). The strategy states that “the three agencies recognize that by working together, restoration of grassland ecosystems and the wildlife species that inhabit them can be maximized for the American public. The mission of this effort is to develop an integrated management strategy for the conservation and restoration of grassland ecosystems and associated pronghorn populations in central Arizona. This strategy includes habitat assessment information, risk assessment to grassland ecosystems and pronghorn populations, management strategies and recommendations, and the use of an interdisciplinary approach for its development and implementation."

Specifically, grassland habitat in GMU21 is identified in the strategy as an area with distinct local populations of pronghorn and other grassland species with threats to their long-term viability without intensive management strategies and actions. The maintaining of these populations at high densities and protecting high quality habitats is critical to meeting management objectives. This project reflects the goals, objectives and strategies set within the CAGS, more specifically:

Goal - Maintain self-sustaining pronghorn populations and other grassland obligate species in central Arizona

Objective - Maintain and/or develop adequate water sources within suitable pronghorn habitat
Strategy - Map AGFD wildlife waters, livestock watering improvements (troughs, windmills, stock tanks) and natural perennial water (springs and streams)
Stragegy - Conduct water distribution analyses; identify availability shortfalls, identify distribution problems with overabundance; collaborate on optimum distribution and abundance with livestock operations considering political and biological aspects
Strategy - Reduce predator cover in the immediate vicinity of important water sources and set fences back

Objective - Maintain or restore habitat connectivity
Strategy - Identify movement corridors, barriers and specific restoration actions
Strategy - Reduce fence density and improve quality
Strategy - Inventory fence locations and designs and modify to meet wildlife standards

The Department and partners have been working collaboratively for many years on habitat improvement projects across the Ranch and the adjacent grassland habitats for the benefit of wildlife including juniper thinning, prescribed fire treatments, water developments, predator control and wildlife friendly fence modifications. The Horseshoe Ranch has been a partner with the Arizona Antelope Foundation through the Department's Adopt-A-Ranch Program for many years. This project represents an ongoing commitment to continue active management strategies to promote habitat improvement projects that will benefit wildlife and maintain self-sustaining populations of important game species including pronghorn and mule deer across the grasslands of GMU 21.

Since the fall of 2006, the two allotments associated with Horseshoe Ranch have been in a non-use state, with no active livestock operator maintaining developed waters. As a result infrastructure associated with the various waters has fallen into disrepair and in some places has been vandalized. The Department initiated an inventory of all water sources across the allotments August 2011 to assess the current availability of water and repair needs. The results of that assessment indicate that most of the stock tanks are dry as a result of recent drought and most of the windmill or well/pipe/trough systems are dry as a result of infrastructure in disrepair (see Map 3). The lack of water across the two allotments is severe and a water management strategy is urgently needed.

PROJECT OBJECTIVES:

The primary objectives for this project are:

1. Implement a phased approach to improving water availability and distribution across the Ranch and allotments.
2. Initiate a collaborative approach to fund and maintain water infrastructure on the Ranch and allotments; utilizing partnerships developed through the future CRMP process, contractual arrangements between AGFD and the future ranch livestock subleassee, federal land management agencies, Habitat Partnership Committee and other interested stakeholders.

PROJECT DESCRIPTION AND STRATEGIES:

Objective 1. Implement a phased approach to improving water availability and distribution across the Ranch and allotments

Strategy 1.1: Repair existing water developments that can provide immediate water delivery (windmills, solar wells, and spring developments: see attached Map 3)

Task A- Perry Windmill (Improvement #45)
- Service windmill (standard pull & service leathers or evaluate adding a submersible pump)
- Replace windmill fin
- Reconfigure waterlot fence to wildlife standards (Volunteer Labor Match)
- Add 2 new troughs with above ground pipeline and float system
- Evaluate adding a 2nd storage tank (possibly use spare tank at Horseshoe Ranch)

Task B- New Mill (Improvement #35)
- Service windmill (standard pull & service leathers or evaluate adding a submersible pump)
- Reconfigure waterlot fence to wildlife standards (Volunteer Labor Match)
- Add 2 new troughs with above ground pipeline
- Replace float system on troughs

Task C- Bishop Windmill (Improvement #9)
- Service windmill (standard pull & service leathers or evaluate adding a submersible pump)
- Repair storage/trough distribution lines
- Replace float system on trough
- Add trough/pipeline to Cornstalk pasture

Task D- Rugged Mill **(**Improvement #54)
- Reconfigure waterlot fence to wildlife standards (Volunteer Labor Match)
- Evaluate adding a submersible pump
- Replace float system on trough
- Add overflow system on storage tank

Strategy 1.2: This strategy will be implemented as Phase II for the project. Repair existing water developments that will provide water when precipitation delivers (stock tanks and wildlife water catchments). Several dirt stock tanks across the allotments are currently silted in and some have dam or overflow channel breaches. A prioritized list of stock tank improvements will be developed to renovate stock tanks, utilizing a collaborative approach for funding and labor. Priorities will be established as part of the CRMP process (see Objective 2 below).

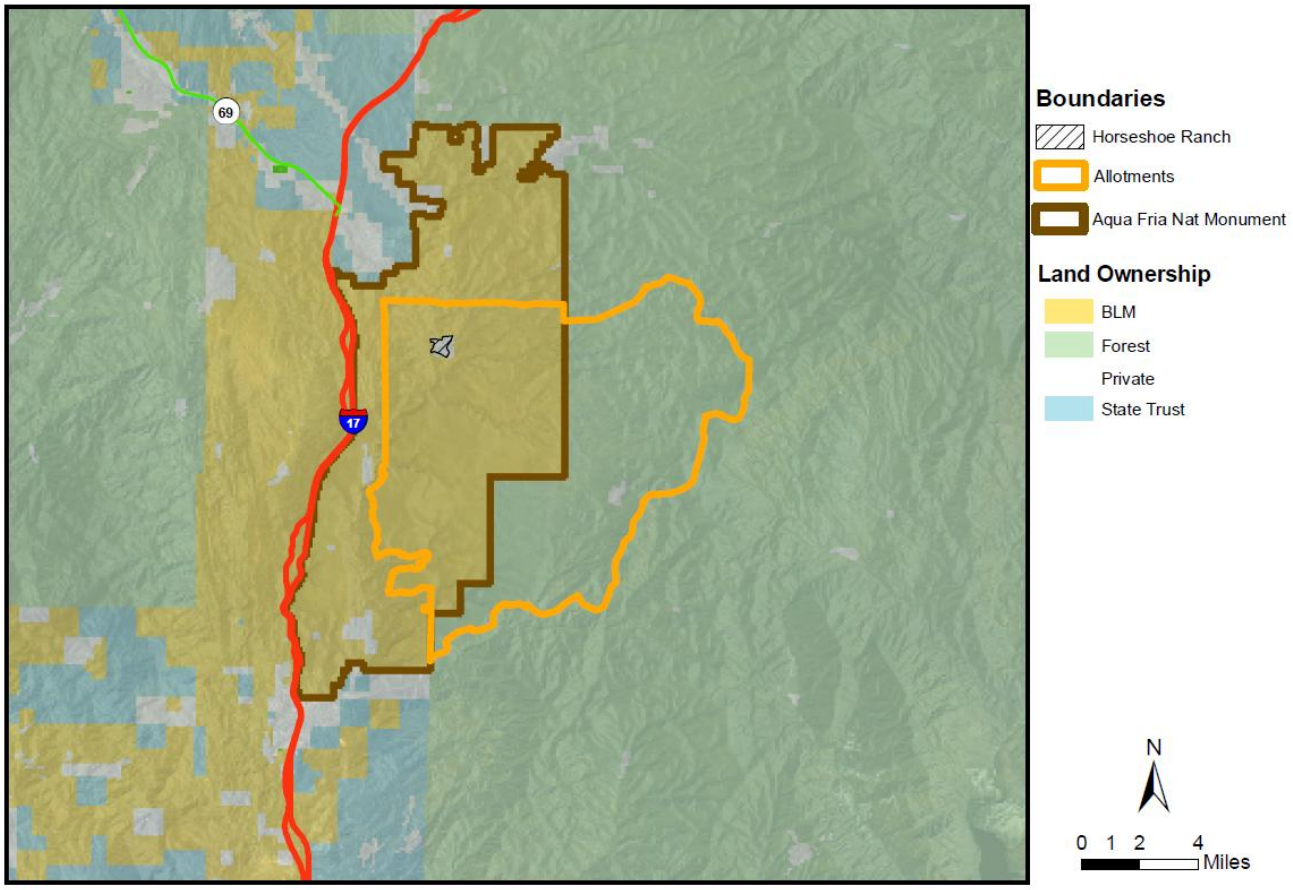
Strategy 1.3: This strategy will be implemented as Phase II for the project. Analyze need and identify new wildlife & livestock water developments that increase water availability and improve water distribution.

Objective 2. This strategy will be implemented as Phase II for the project. Initiate a collaborative approach to fund and maintain water infrastructure on the Ranch and allotments; utilizing partnerships developed through the future CRMP process, contractual arrangements between AGFD and the future ranch livestock sublease, federal land management agencies, Habitat Partnership Committee and other interested stakeholders.

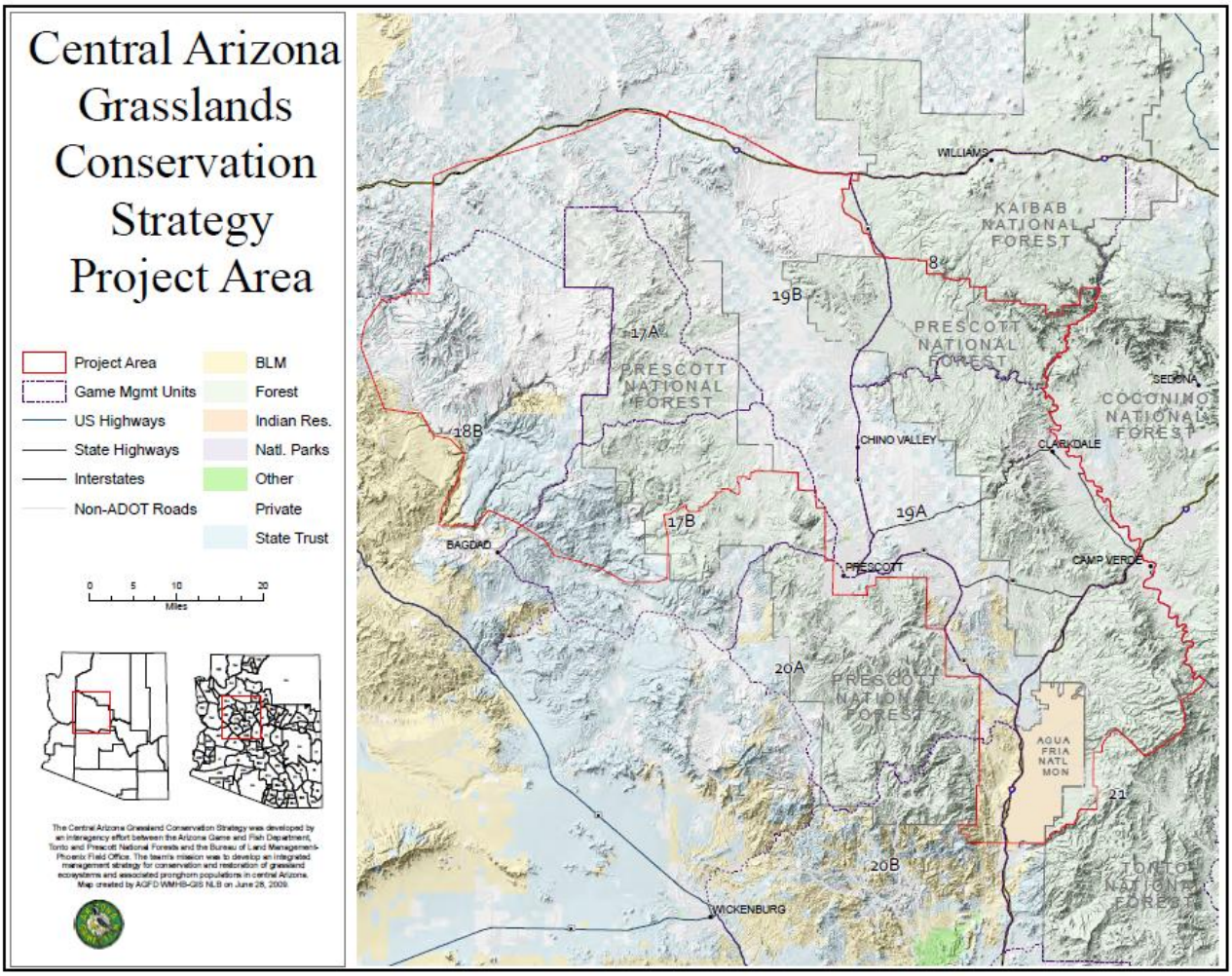
Strategy 2.1: Prioritize repairs, renovations and new improvements based on feasibility, benefits to wildlife and benefits to livestock management strategies.

PROJECT LOCATION:

The project area is 40 miles north of Phoenix, east on the Bloody Basin exit. The Horseshoe Ranch is located in the Agua Fria National Monument along the Bloody Basin Road about 5 miles east of I-17. The Horseshoe and Copper Creek allotments encompasse 65,000 acres due east from I-17, on BLM and TNF lands.



Map 1 – General location of Horseshoe Ranch and allotments

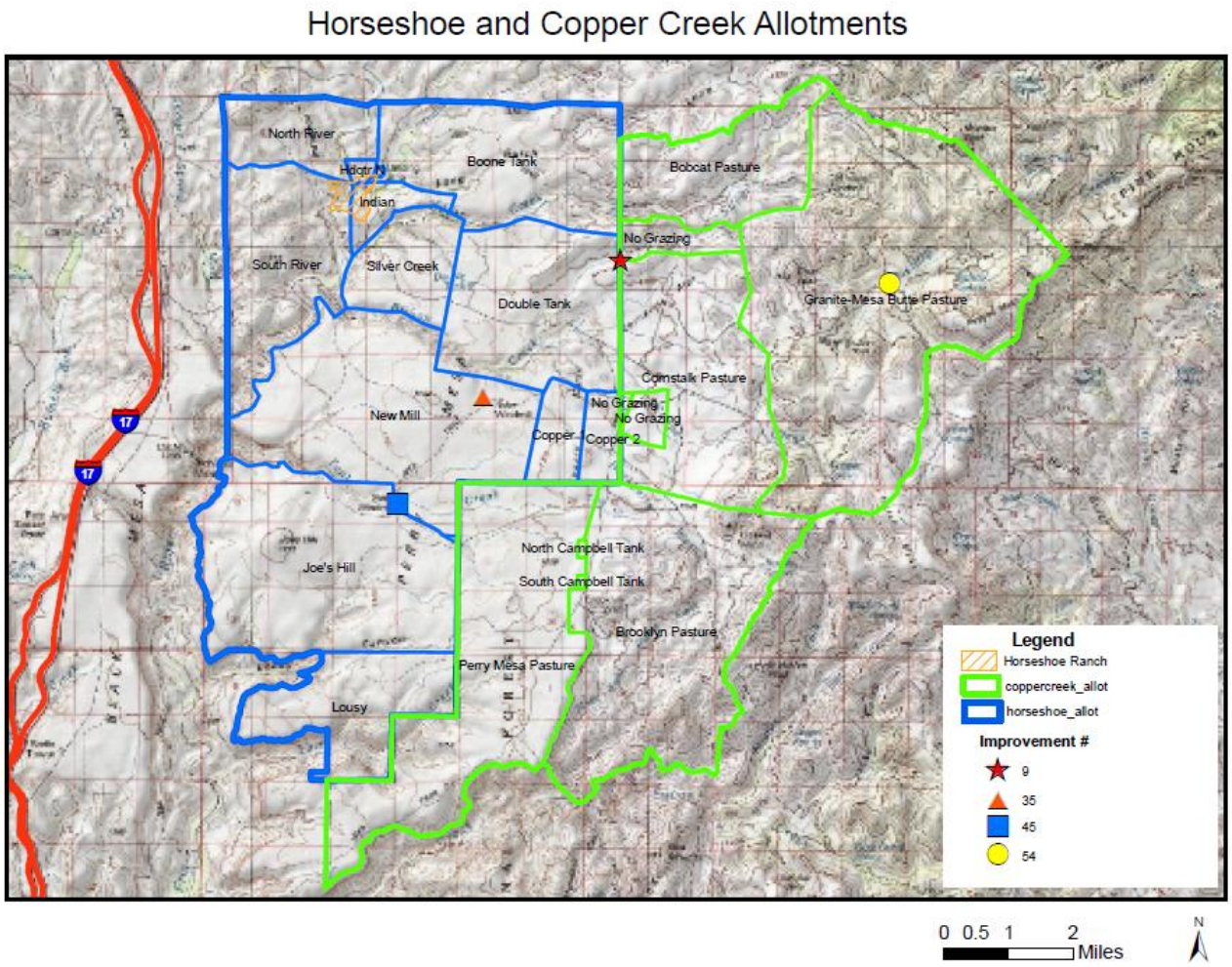


Map 2 - Central Arizona Grasslands Conservation Strategy Project Area

LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner's name):
Arizona Game and Fish Commission – Horseshoe Ranch, Tonto National Forest, and the Bureau of Land Management. See Map 1- Location.

IF PRIVATE PROPERTY, IS THERE A STEWARDSHIP or LANDOWNER AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT?
YES[] NO[] not applicable –

HABITAT DESCRIPTION:
The elevation at the ranch is 3,266 feet. Habitat types on the subject property and across the associated allotments transition from Arizona Uplands Sonoran Desertscrub to Great Basin Conifer Woodlands (Brown 1994). The habitat is characterized primarily as semi-desert grassland across broad expanses of mesas and rolling hills. These grasslands are bisected by steep canyons that have Sonoran Desertscrub, Great Basin Conifer Woodland and Interior Chaparral species. Canyons with intermittent or perennial water have native Interior Riparian Deciduous Forests and Woodlands. More xeric canyons in the lower elevations are characterized by Sonoran Riparian Scrubland.



Map 3 – Range Improvement (Tasks A-D) Locations

ITEMIZED USE OF FUNDS:

Contributor	Task or Resource Provided	#	Rate	Total Value
Task A - Perry Windmill (Improvement #45)				
HPC	Contract Labor- Service windmill (standard pull & service leathers, replace cylinder; and evaluate adding a submersible pump- Option 1)	1	Up to 4800.00	4800.00
HPC	Option 1- Contract Labor- Add a submersible pump to the windmill for pumping higher volume of water (this was the past configuration of the windmill)	1	4,000.00	4000.00
HPC	10’ x 30” x 24” Powder River troughs	2	700.00	1400.00
HPC	2500 ft. 1 ¼” High density polyethylene pipeline	2500 ft	0.57 /ft	1425.00
HPC	Storage Tank/Trough/Pipeline fittings: (valves, elbows, couplings, reducers)			250.00
HPC	Float valves for troughs (wildlife/livestock proof cast aluminum)	2	200.00	400.00
HPC	Replace windmill blade	1	150.00	150.00

Funding Request from HPC Subtotal - Without Option 1				*8425.00*
Funding Request from HPC Subtotal - With Option 1				*12,425.00*
Task B – New Mill Windmill (Improvement #35)				
HPC	Contract Labor - Service windmill (standard pull & service leathers, replace cylinder; and evaluate adding a submersible pump- Option 1)	1	Up to 4800.00	4800.00
HPC	Option 1- Contract Labor - Add a submersible pump to the windmill for pumping higher volume of water (this was the past configuration of the windmill)	1	4,000.00	4000.00
HPC	100 ft. 1 ¼" High density polyethylene pipeline	300 ft	0.57 /ft	171.00
HPC	10' x 30" x 24" Powder River trough	1	700.00	700.00
HPC	Float valve for troughs (wildlife/livestock proof cast aluminum) (retrofit 2 existing troughs + 1 new trough)	3	200.00	600.00
HPC	Storage Tank/Trough/Pipeline fittings: (valves, elbows, couplings, reducers)			400.00
HPC	2 miles smooth wire – ¼ mile per roll	8	50.00	400.00
HPC	Fence stays (100/80.00) and Clips (est 20.00)		100.00	100.00
Funding Request from HPC Subtotal - Without Option 1				*7171.00*
Funding Request from HPC Subtotal - With Option 1				*11,171.00*
Task C – Bishop Windmill (Improvement #9)				
HPC	Contract Labor- Service windmill (standard pull & service leathers, replace cylinder; and evaluate adding a submersible pump- Option 1)	1	Up to 4800.00	4800.00
HPC	Option 1- Contract Labor- Add a submersible pump to the windmill for pumping higher volume of water (this was the past configuration of the windmill)	1	4,000.00	4000.00
HPC	Float valve for troughs (wildlife/livestock proof cast aluminum) (retrofit 1 existing + 1new)	2	200.00	400.00
HPC	10' x 30" x 24" Powder River troughs	1	700.00	700.00
HPC	100 ft. 1 ¼" High density polyethylene pipeline	200 ft	0.57 /ft	115.00
HPC	Storage Tank/Trough/Pipeline fittings: (valves, elbows, couplings, reducers)			250.00
Funding Request from HPC Subtotal - Without Option 1				*6265.00*
Funding Request from HPC Subtotal - With Option 1				*10,265.00*
Task D – Rugged Windmill (Improvement #54)				
HPC	Option 1- Contract Labor - Add a submersible pump to the windmill for pumping higher volume	1	4,000.00	4000.00

	of water (this was the past configuration of the windmill)			
HPC	Float valve for trough (wildlife/livestock proof cast aluminum) (retrofit 1 existing trough)	1	200.00	200.00
HPC	Storage Tank/Trough/Pipeline fittings: (valves, elbows, couplings, reducers)			125.00
HPC	100 ft. 1 ¼" High density polyethylene pipeline	100 ft	0.57/ft	57.00
HPC	¼ mile smooth wire	1	50.00	50.00
HPC	Fence stays (100/80.00) and Clips (est 20.00)		100.00	100.00
Funding Request from HPC Subtotal - Without Option 1				*532.00*
Funding Request from HPC Subtotal - With Option 1				*4532.00*
Cost Share				
Volunteer Labor	Task A- Reconfigure **waterlot** fence to wildlife standards $21.69 per hour (hourly rate of $16.07 + a rate of $5.62 (35%) employee related benefits)	~ est. 200 vol. hours	21.69	4338.00
AGFD Adopt A Ranch	Task A- 2 miles smooth wire – ¼ mile per roll	8	50.00	400.00
AGFD Adopt A Ranch	Task A- Fence stays (100/80.00) and Clips (est 20.00)		100.00	100.00
Volunteer Labor- Task D	Assembly & repair of storage tank/trough/pipeline systems at all 4 windmills $21.69 per hour (hourly rate of $16.07 + a rate of $5.62 (35%) employee related benefits)	168	21.69	3644.00
AGFD	All Tasks - Project, planning oversight, travel and travel	120 hrs	35.55	4266.00
AGFD	All Tasks- Assembly & repair of storage tank/trough/pipeline systems at all 4 windmills	32 hrs	35.55	1137.60
HPC	35% Administrative overhead on AGFD project oversight	1523 hrs		1891.26
Total Funding Request from HPC Subtotal - Without Option 1				*22,393.00*
Total Funding Request from HPC Subtotal - With Option 1				*38,393.00*
Cost Share Subtotal				*15,776.86*
Total Project Cost	Without Option 1			*38,169.86*
Total Project Cost	With Option 1			*54,169.86*

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

- Tonto National Forest- Carol Engel, Andre Silva, Todd Willard
- Bureau of Land Management- AFNM- Amanda James, Paul Sitzmann
- AZ Game & Fish Dept. Region VI- Jake Fousek (Wildlife Manager GMU21), Kelly Wolff-Krauter (Habitat Program Mgr), Dana Warnecke (Habitat Specialist) Tom Hildebrandt (Wildlife Program Mgr)
- Most of the work is maintenance requiring no NEPA. Adding pipelines and troughs will require NEPA clearance from BLM & TNF (most likely CatX level NEPA clearance).
- BLM may provide some materials for fence modifications reducing the cost share from Adopt-

A-Ranch Program.

- Eagle Scouts will be providing volunteer labor to do the fence modifications for Task A during the Fall of 2011.

PROJECT MONITORING PLAN:
A water monitoring plan will be developed as part of the Horseshoe Ranch CRMP. It will be implemented collaborative through CRMP partnerships. The CRMP planning will be initiated Fall of 2011 with all interested stakeholders.

PROJECT MAINTENANCE:
A water maintenance plan will be developed as part of the Horseshoe Ranch CRMP. It will be implemented collaborative through CRMP partnerships. The CRMP planning will be initiated Fall of 2011 with all interested stakeholders.

PROJECT COMPLETION REPORT TO BE FILED BY:
AGFD- Region VI: Jake Fousek – Wildlife Manager

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: Horseshoe Ranch Water Management Project- Phase I

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

Not applicable. This project is not related to wildlife water catchment repairs or development. The project is repairs on existing ranch developed waters.

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

3) What is the estimated annual inches of precipitation for the area? (mark one)
[]2-4 []4-6 []6-8 []8-10 []10-12 [X]12-14 []14-16 []>16

4) Is there a perennial water source available to big game within four miles of this project?

YES[X] (please complete #5 below) NO[] (skip #5 below**)**

Yes for Tasks A,B,C (Agua Fria River, Silver Creek and 2 wildlife water guzzlers on Perry Mesa . Most of the stock tanks are dry, 4 are at nearly empty levels currently); Yes for Task D – Silver Creek is slightly over 4 miles and Bishop Spring (#69 on Map 3) is currently not operational.

5) For the accessible, perennial water source nearest this project:
Name of water source: Perry Tank, Copper Tank, North and South Campbell Tanks; Agua Fria River, Copper Spring, Bishop Creek, Silver Creek Spring
Type of water source (catchment, spring, dirt tank): Dirt Tank (currently almost dry)
Ownership of water source: BLM: on Horseshoe Ranch assignment of range improvements
Distance in miles from project: Various between Tasks but approximately 2-4 miles from Agua Fria River and all of the stock tanks above for Tasks A & B; approximately 3 miles from Copper Spring to Task D; approximately 1-2 miles from Bishop Creek (intermittent stream) and 3 miles from Silver Creek Spring for Task C. All of the natural springs/streams are in canyons and waters are intermittent with very limited distribution. We would not expect pronghorn to use the natural waters at these locations due to the steep canyon topography and dense vegetation. The natural waters are used by deer.

6) Is the target wildlife species a result of transplant efforts? YES[X] NO[X]

Pronghorn have been transplanted in GMU 21. Mule deer are not a result of transplant efforts.

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

Agua Fria National Monument

8) Please provide the following information about access to the proposed site:
Type of access (mark one): [X]2x4 vehicles [X]4x4 only []foot only**
**If foot access only: Distance in miles:_____ Approximate hiking time: _____

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

-- Please describe any restrictions to public access: wet weather restrictions

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

10) Was a site visit completed? Yes[X] No[]
Tom Hildebrandt, AGFD Region VI
Dana Warnecke, AGFD Region VI