

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

Game Branch / HPC Project Number: 16-513

PROJECT INFORMATION

Project Title: Southwest Tumbleweed Pasture-Bonita Grasslands Restoration Phase 7

Region and Game Management Unit: GMU 32

Local Habitat Partnership Committee (LHPC):
• Safford

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

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

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

Project Type: Grasslands Restoration

Brief Project Summary:

The overall project (Bonita Grasslands Restoration) was initiated in 2010 and is in the seventh year of a 20,000 acre, landscape scale, grassland restoration project in the Bonita area within GMU 31 and 32. To date this project has involved funding and grants from the Natural Resources Conservation Service (NRCS), Arizona Department of Agriculture (ADA), US Fish and Wildlife Service (USFWS), Arizona Game and Fish Department (AGFD) and the National Fish and Wildlife Foundation (NFWF). During the initial planning stages of this landscape project, it was foreseen to require up to 10-15 years before complete the entire 20,000 acres, depending upon available funding and cooperating landowners and lessees. To date approximately 17,000 acres have been treated.

The South Tumbleweed pasture will be submitted in two proposals (SW portion 585 acres and the SE portion 655 acres). These two proposals will reclaim 1240 acres of historic semi-desert grassland through the use of mechanical grubbing of live mesquite trees and the piling of those mesquite carcasses for later removal. The Tumbleweed Pasture consists of approximately 2400 acres of State Trust leased lands divided by High Creek Road. A similar project for the North Tumbleweed Pasture was submitted and approved in 2015 and the Southeast portion of the Tumbleweed Pasture is planned to be submitted in 2017.

The removal or significant reduction in mesquite trees within the treated area will result in overall improved range conditions, improve water infiltration and reduce soil erosion. The improved range/habitat conditions are the biggest part of restoring the grassland ecosystem benefiting all grassland associated wildlife species.

Big Game Wildlife Species to Benefit (% benefit per species): Pronghorn 75%, Mule Deer 25% and Scaled Quail.

Implementation Schedule (Month/Day/Year):

Project Start Date: December 2017

Project End Date: June 2018

Environmental Compliance:

NEPA Completed: Yes[] No[] N/A[X]

Projected Completion Date: Project occurs on AZ State Trust Lands

State Historic Preservation Office - Archaeological Clearance:
(Provide Attachment)

Yes[X] No[] N/A[]

Projected Completion Date: Completed June 2015 (#15-093549)

Arizona Game and Fish Department EA Checklist: N/A[]

To be Completed by: Completed and approved (#15-1118121602)

Projected Completion Date: June 2018

PROJECT FUNDING		
Special Big Game License Tag Funds Requested:	\$30,000.00	
Cost Share or Matching Funds:	\$30,000.00 (NFWF) \$87,250.00 (WHEI)	
Total Project Costs:	\$147,250.00	
PARTICIPANT INFORMATION		
Applicant (please print): John Bacorn	Address: AZ Game and Fish Department 555 N. Greasewood Road Tucson, AZ 85705	E-mail: jbacorn@azgfd.gov
Telephone: 520-591-1485		Date: August 25, 2016
AGFD Contact and Phone No. (If applicant is not AGFD personnel):		
Project has been coordinated with: Jeff Homack (ASLD Lessee), Cody Hatfield (ASLD), John Bacorn (AGFD), Rana Tucker (AGFD), Johnathan Odell (AGFD) and John Millican (AAF).		

NEED STATEMENT – PROBLEM ANALYSIS:

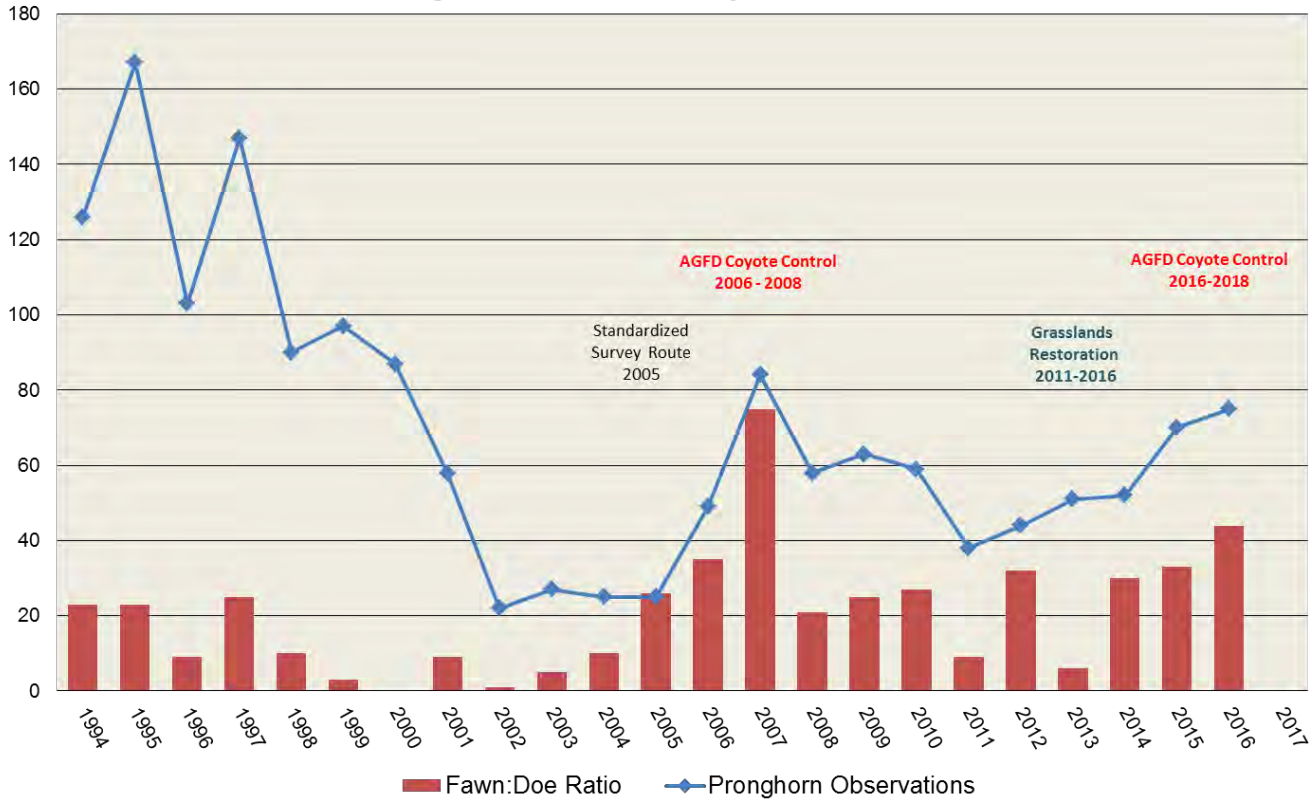
Large blocks of land, historically semi-desert grasslands in the Sulphur Springs and San Bernardino Valleys of Southeastern AZ are declining in size and connectivity between them is being lost due to the heavy encroachment of mesquite and other shrub species. Approximately 36% of historic grasslands within the Apache Highlands ecoregion (SE AZ, SW NM, and Northern States of Sonora and Chihuahua Mexico) have been converted to varying degrees of shrublands (Gori, D.F., and C.A.F. Enquist. 2003).

Mesquite invasion in grasslands alters the entire grassland ecosystem; it alters the water infiltration, and changes the vegetation composition such as grasses, forbs, shrubs and subshrub (browse) species. This change in vegetation changes the wildlife species composition normally associated with grasslands as well. Grassland associated wildlife such as pronghorn antelope, scaled quail, desert box turtle, Botteri’s Sparrow, Cassin’s Sparrow, meadowlark and loggerhead shrike are being negatively impacted by this loss of habitat due to habitat degradation and fragmentation.

“The antelope were once very abundant throughout the entire Sulphur Springs Valley, but now inhabit the grassland north of Willcox, east of the Galiuro and Winchester Mountains and west of the Pinalenos. A portion of the population also ranges on Allen Flat to the southwest of the Winchester Mountains. Raymond Wildlife Area-Chavez Pass antelope were released here (22 in 1943, 6 in 1944, 40 in 1945)” from Region V Pronghorn Antelope Management Plan.

During the early to mid-1990’s around 150 antelope were observed during AGFD aerial surveys within the Bonita area. In the early 2000’s the number of animals observed began declining and between 2002 and 2005, on average only 25 animals were observed. During this time period fawn to doe ratios declined. From 1999 to 2004, the average fawn to doe ratio was 5:100. Between 2006- 2008, AGFD contracted with Wildlife Services to fly aerial coyote control within the Bonita area, observation numbers increased to 49, 84 and 58 animals and fawn ratios were 35, 75 and 21 fawns per 100 does during the three years of aerial coyote control. Since the inception of the grasslands restoration efforts in 2011, the pronghorn observations have steadily increased to almost 80 animals. AGFD plan to initiate coyote control efforts again from 2016-2018.

Pronghorn Aerial Surveys Bonita Area



The Western Quail Management Plan 2010, recommend assessing shrub encroachment, protecting and enhancing desert grasslands and reestablishing native bunchgrass habitats as habitat objectives for improving Scaled Quail habitats.

The removal or significant reduction in mesquites within the treated area and improved range management will result in overall improved range conditions, improving water infiltration and reducing soil erosion. This will go a long way toward restoring the grassland ecosystem benefiting Pronghorn antelope, Scaled quail and all grassland associated wildlife species. The associated ranch on which this project is proposed, has a CRMP (Coordinated Resource Management Plan) developed by the Natural Resource Conservation Service (NRCS), and brush removal was recommended in this plan to address natural resource concerns on the ranch.

PROJECT OBJECTIVES:

- 1) Main Objective is to improve/restore the desert grassland ecosystem.
- 2) Improve water infiltration, reduce soil erosion and increase the native grass and forb composition.
- 3) Improve range/habitat conditions for all grassland associated wildlife species, especially for Pronghorn antelope and Scaled quail.
- 4) Improve range conditions for livestock operations.

PROJECT DESCRIPTION AND STRATEGIES:

- 1) Mechanically remove/reduce mesquite densities within project area by 85-90%.
- 2) Remove 90-95% of the mesquite carcasses by piling and later burning.
- 3) Leave at a minimum one or two mesquite carcasses every 75-100 yards and minimize disturbance to yucca plant species for scaled quail habitat.
- 4) Defer grazing in project area for a minimum of 2 growing seasons to increase seed base of native grasses and forbs.
- 5) Spot-seeding of a native grass-shrub seed mixture.
- 6) Implement CRM (Coordinated Resource Management) plans to improve overall range conditions.

Ideal pronghorn habitat would consist of open grasslands with a mixture of grasses, forbs and low shrubs averaging between 10 and 18 inches in height. Canopy cover and shrubs above 30 inches should be considerably less than 20% of total cover for the area. This project will remove 85-95% of the mesquite trees with the use of an excavator, leaving scattered larger trees for shade and cover for pronghorn, mule deer and livestock and scattered shrubs less than 30 inches for Scaled quail cover. The uprooted mesquite carcasses (90-95%) will be removed by piling in close proximity to their originally location and burned at a later date. The removal of the mesquite carcasses after grubbing is important in relation to Pronghorn antelope's "visibility" and their ability or willingness to utilize the treated area.

Ideal Scaled quail habitat would consist of grassland type habitat with scattered low shrubs, bunchgrasses and a variety of native grasses and forbs. Tree canopy of < 10%, grass canopy cover of > 26% and short (< 22 in) low shrub cover (K.D. Bristow and R.A. Okenfels). Scaled quail tend to avoid complete open grasslands without some shrub cover. Low shrub cover is important for hiding from predators and resting areas. To provide habitat conditions for scaled quail, 1-3 cover areas per acre will be provided by either low mesquite shrubs (<30 inches) or an uprooted mesquite carcass.

For additional improvement in range conditions and providing an increased grass and forb seed base, the treated area will be rested from cattle use during 2 consecutive growing seasons and NRCS CRM ranch plans will be followed. Spot seeding of a mixed native grass/forb mix will occur underneath selected mesquite carcasses.

The ASLD lessee will apply for a State Land Department treatment application and will be responsible for hiring the contractor to conduct the treatment work.

LAND OWNERSHIP AT THE PROJECT SITE(S):

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

- Approximately 100% of the project site is State Trust land.

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

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

HABITAT DESCRIPTION:

According to the NRCS Soil map website, the two dominant ecological sites are Sandy Loam and Clay Upland. Historically these ecological sites consisted of Giant Sacaton grasslands in the lower sandy loam areas and Tabosa grasslands in the upper clay uplands.

Currently the project area is remnant semi-desert grassland with a heavy to medium invasion of mesquite cover story and a reduced grass understory community and increasing soil erosion occurring within the heavier mesquite dominated areas. Elevation is at an average of 4500 feet.

Utilizing aerial imagery, the mesquite densities in the project area is estimated to have 121 acres (20%) heavy, 418 acres (70%) medium and 46 acres (8-10%) light. NRCS categorizes tree densities as heavy (>150 per acre), medium (75-150 per acre) and light (<75 per acre).

ITEMIZED USE OF FUNDS:

John Bacorn and lessee Jeff Homack met with Jeff's contractor, based upon the soil type, tree density and overall size of the project, the contractor agreed to perform the treatment at the cost of \$250.00 per acre.

Cultural Resource Surveys (CRS) have already been completed, contracted by AGFD at \$32.28 per acre funded through AGFD's WHEI.

Practice	Rate	Size	Total Costs
Brush Removal and Carcass Piling	\$250.00/acre	585 ac	\$146,250.00
Native Grass/forb seed mix	\$20.00-\$30.00/lb.	40 lb.	\$1,000.00
			\$147,250.00

Special Big Game License Tag Funds Requested:

\$30,000.00

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

\$117,250.00

Funding sources will include Habitat Partnership Committee (HPC), National Fish and Wildlife Foundation grant NFWF), and Arizona Game and Fish Department's Wildlife Habitat Enhancement Initiative (WHEI).

Item	Funding Source	HPC Funds	Cost Share Funds	Total Costs
Brush Removal and Carcass Piling	HPC	\$30,000.00		\$30,000.00
Brush Removal and Carcass Piling	NFWF		\$30,000.00	\$30,000.00
Brush Removal and Carcass Piling	WHEI		\$86,250.00	\$86,250.00
Native Grass and Forb Seed Mix	WHEI		\$1,000.00	\$1,000.00
		\$30,000.00	\$117,250.00	\$147,250.00

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

NRCS has written up the Conservation Resource Management (CRM) Plan and responsible for assisting with implementation of the CRM plans. Jeff Homack, ASDL lessee will contract out the treatment and responsible for removing or burning the piled mesquite carcass after the treatment has been completed.

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

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

Access is already available through State Trust lands.

PROJECT MONITORING PLAN:

The treatment is expected to require 2-4 months to complete, depending upon climate conditions. Project completion and success will be monitored by AGFD employees, ASLD and the ASLD lessee.

PROJECT MAINTENANCE:

The project area will be monitored annually by the lessee and/or AGFD. It is anticipated that there will not be 100% mesquite mortality and there may be some re-sprouting of mesquite in subsequent years. This has been discussed between all parties involved. Maintenance may require application of herbicide of individual plants every few years to maintain the open grassland habitat type desired and may involve subsequent HPC proposals.

PROJECT COMPLETION REPORT TO BE FILED BY: John Bacorn (AGFD)

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

ATTACHMENTS:

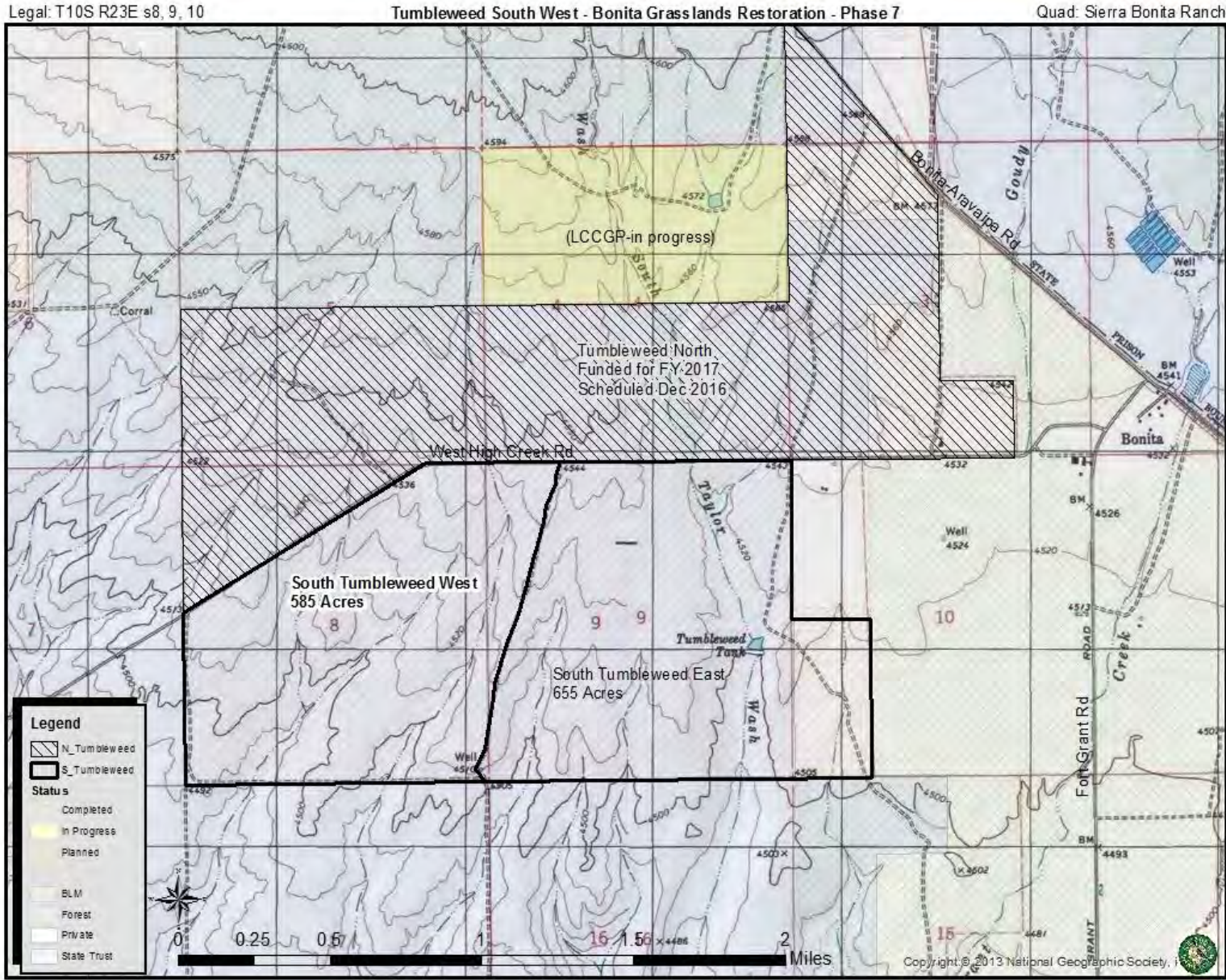
(Please provide cultural clearance documentation from land management agency, e.g., FONSI, Inventory Standards, etc. Also attach any project pictures)

PROJECT LOCATION

Region 5, Game Management Unit 32, located approximately 30 miles north of Willcox in Graham County.



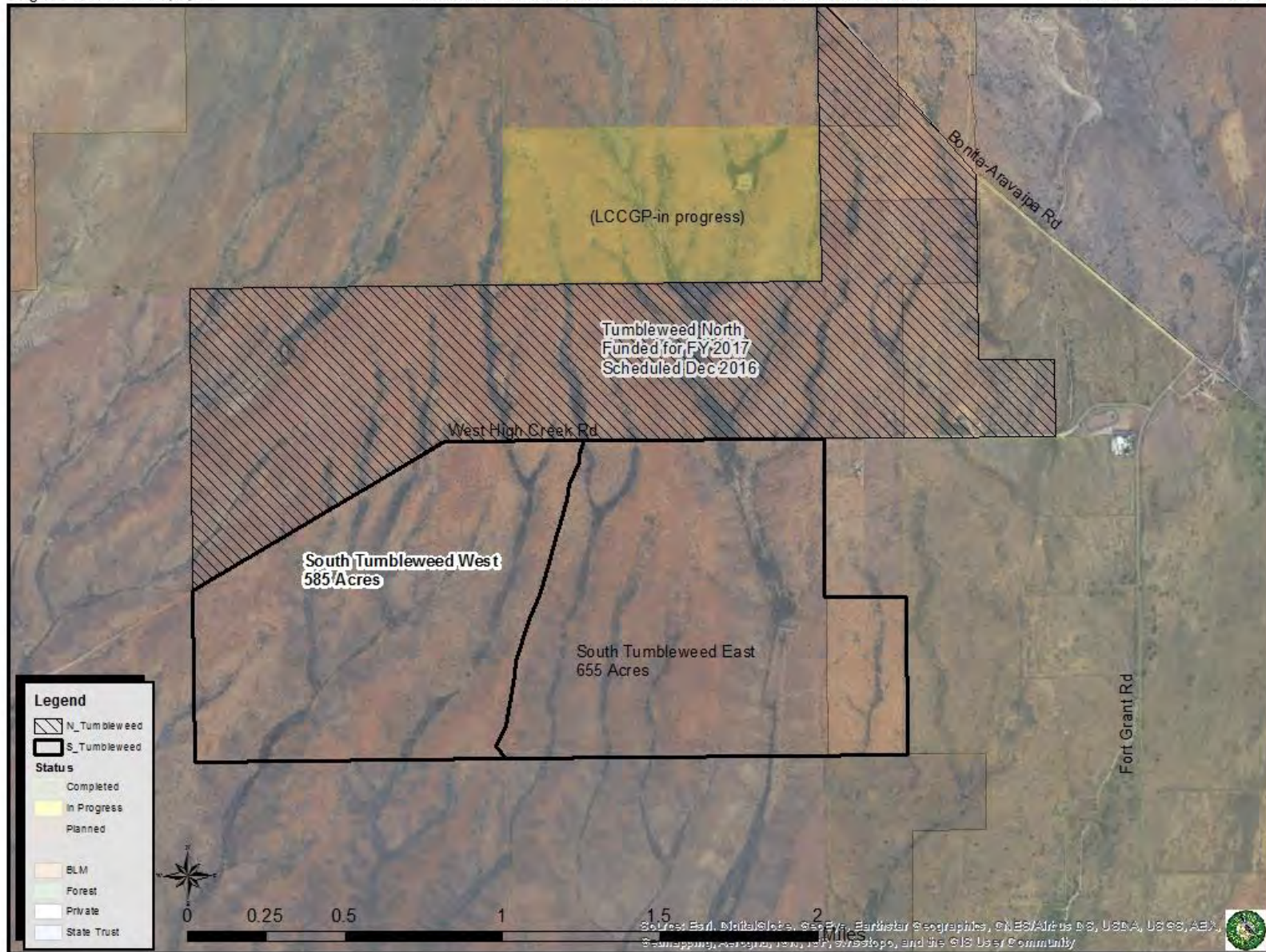
The project site (Southwest Tumbleweed Pasture) is 585 acres comprising of 100% State Trust land. It is located in T10S, R23E, and section 8. Coordinates include; N32.58007/W110.02488, N32.58698/W110.01141, N32.58698/W110.00793, N32.57259/W110.00798 and N32.57251/W110.02497.



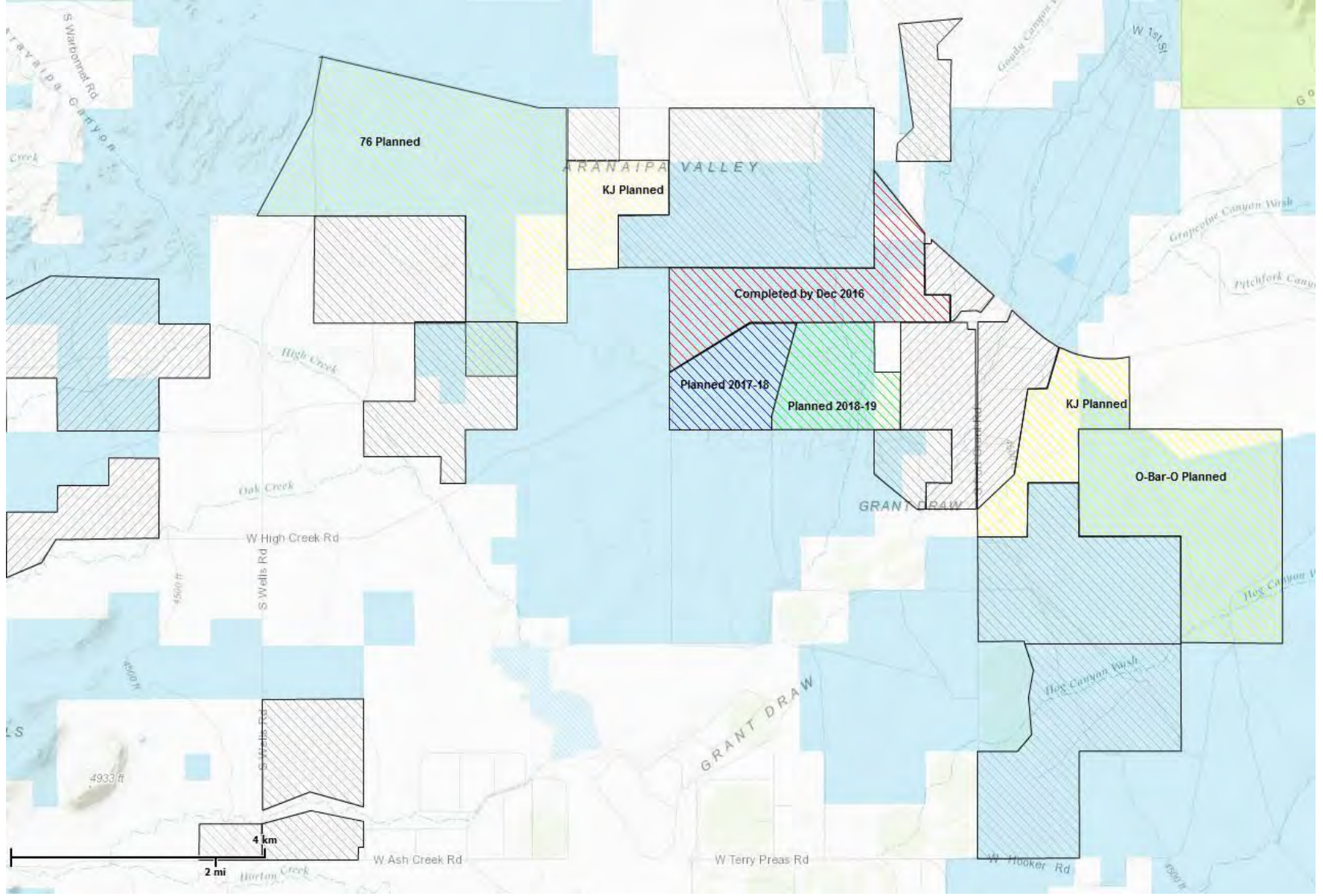
Legal: T10S R23E s8, 9, 10

Tumbleweed South West - Bonita Grasslands Restoration - Phase 7

Quad: Sierra Bonita Ranch



Completed and planned projects in the vicinity of this project site.



Current Habitat Conditions in the Project Area, left of fence.



Previous grassland restoration projects on the Bonita Ranch (East McQuiggan Pasture).



ARIZONA GAME AND FISH DEPARTMENT **TREE CLEARING/REMOVAL WORKSHEET**

PROJECT TITLE: Southwest Tumbleweed Pasture

- 1) **What is the estimated acreage of the project?** 585 acres
- 2) **How are the trees going to be cleared? (agra axe, chain saw, grubbing, push, chaining):**
Mechanical/grubbing, an excavator will be used to pull out the tree and root system.
- 3) **What is the estimated number of trees per acre?**
121 acres @ 150 trees per acre = 18,150 trees
418 acres @ 75 trees per acre = 31,350 trees
46 acres @ 25 trees per acre = 1,150 trees
- 4) **Describe trees to be cleared (species, estimated diameter, single stem, multi-stem):**
Only mesquite species will be cleared, diameter will vary from 1 inch up to 10-12 inches. Most trees with a diameter greater than 12 inches will be left to provide shade and cover for wildlife and livestock.
- 5) **Describe terrain (slope, soil type, rocks)**
Uplands, sandy loam type soil with less than 20-25% slope.
- 6) **Please list any special land management status for the project site (e.g. Wilderness, National Park, National Monument). If private land, list landowner.**
No special status for any of the project site, project site is located on State trust or deeded lands.
- 7) **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:

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

Site is accessible through state trust lands.

Is the site relatively accessible for tree removal equipment? YES[X] NO[]

Some new roads may be necessary to construct for implementing the project, but will be removed upon completion of project.

Please describe any restrictions to public access:

No restrictions to the state trust lands.