

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

Game Branch / HPC Project Number: 13-101

PROJECT INFORMATION

Project Title: Gust Property Habitat Enhancement Program Phase I - Forest Restoration

Region and Game Management Unit: Pinetop Region 1, GMU 1

Local Habitat Partnership Committee (LHPC):
 • Springerville

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[] → **Funded HPC Project #(s):**

Project Type: Vegetation/Brush Management - Mechanical Thinning and Hand Thinning

Brief Project Summary: Gust family owns 115 acre private land track north of Buckelew spring, adjacent to Pulcifer creek, obtaining the land and associated decreed water rights in 1956. Two earthen tanks and a small wetland meadow receive permanent water from a spring located on Forest lands about 1.25 miles to the south, surrounded by mature, but overstocked Ponderosa pine/oak forest. The Gust's have entered into a Private Land Agreement with the U.S. Fish and Wildlife Service, Partners Program, to initiate Phase I (of Five Phases) forest restoration treatments to reduce small diameter understory, including removal of 99% of invasive Alligator juniper. Objectives are to enhance not only large raptor species foraging and roosting habitat (Mexican spotted owl, Northern Goshawk), but improving meadow and hiding/thermal cover and forage for various game species, along with non-game species.

Big Game Wildlife Species to Benefit: Elk, mule deer, black bear, Merriams turkey

Implementation Schedule (Month/Day/Year):

Project Start Date: November, 2013

Project End Date: May 30, 2015

Environmental Compliance:

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

Projected Completion Date: All Private lands

State Historic Preservation Office - Archaeological Clearance:

Yes[x] No[] N/A[]

Projected Completion Date: Cultural surveys completed 2013

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

To be Completed by: _____

Projected Completion Date: _____

PROJECT FUNDING

Special Big Game License Tag Funds Requested: \$ 20,000

Cost Share or Matching Funds: \$ 38,500

Total Project Costs: \$ 58,500

PARTICIPANT INFORMATION

Applicant (please print):
Morgan Gust

Address: 104 E. Rio Salado Prkway
#901
Tempe, AZ 85281

E-mail:
morganmont@yahoo.com
hayes.8287@gmail.com

Telephone: 602-689-1848	Date: 8/12/13
AGFD Contact and Phone No. (If applicant is not AGFD personnel): Jason Capps, Wildlife Manager Unit 1, 928-358-0813; Mike Godwin, Pinetop Area Field Supervisor, 928-242-3716	
Project has been coordinated with: Dominic Barrett, Partners Program Coordinator, U.S. Fish and Wildlife Service – Pinetop; Jason Capps; Mike Godwin; Rachel Williams, Landowner Incentive Program Specialist- Pinetop AZGF; Vicinte Ordonez, Wildlife Biologist USFS, Springerville RD; Frank Hayes, Consultant/biologist, Heart and Horn Ecological Services; Dan Taylor, Bat International; Steve Clark, Arizona Elk Society; Managers/Field Operations personnel, previously with Snowflake Power, now NOBO.	

NEED STATEMENT – PROBLEM ANALYSIS: For overview see attached Gust Restoration and Habitat Enhancement – Phase I Forest Restoration . Gust family has owned a 115 acre private land parcel north of Buckelew spring (SW/SW/SE ¼ Sec 2, T9S, R25E) since 1956. In coordination with the U.S. Fish and Wildlife Service Partners Program, a habitat enhancement program of work has been developed with input from the private land owner, Arizona Game and Fish personnel, and private biological consulting expertise that includes Five (5) Phases of habitat, access, and species enhancements and protection. Forest restoration of the Ponderosa pine/oak forest and meadow habitat is Phase I of this emerging program.

Prior to European settlement of southwestern United States, pine forest similar to that on this parcel often contained large Ponderosa pines in relatively low densities (<70 trees/acre). Historically, pine forests had regular fire intervals (approximately 2-12 years) that promoted old growth pine forests and maintained meadows. As recognized in the Draft Recovery Plan for the Mexican spotted owl, threats to pine forests throughout the Southwest have transitioned from those associated with overharvest of large trees to stand-replacing wildfires. Pine forest habitats have been negatively impacted by increased pine densities (in this case exceeding 800 trees/acre), invasion of juniper, drought, and other factors. Combined, these factors have contributed to extremely high fire potential that often result in devastating wildfire effects such as the Wallow in 2011 and Whitewater Baldy in 2012.

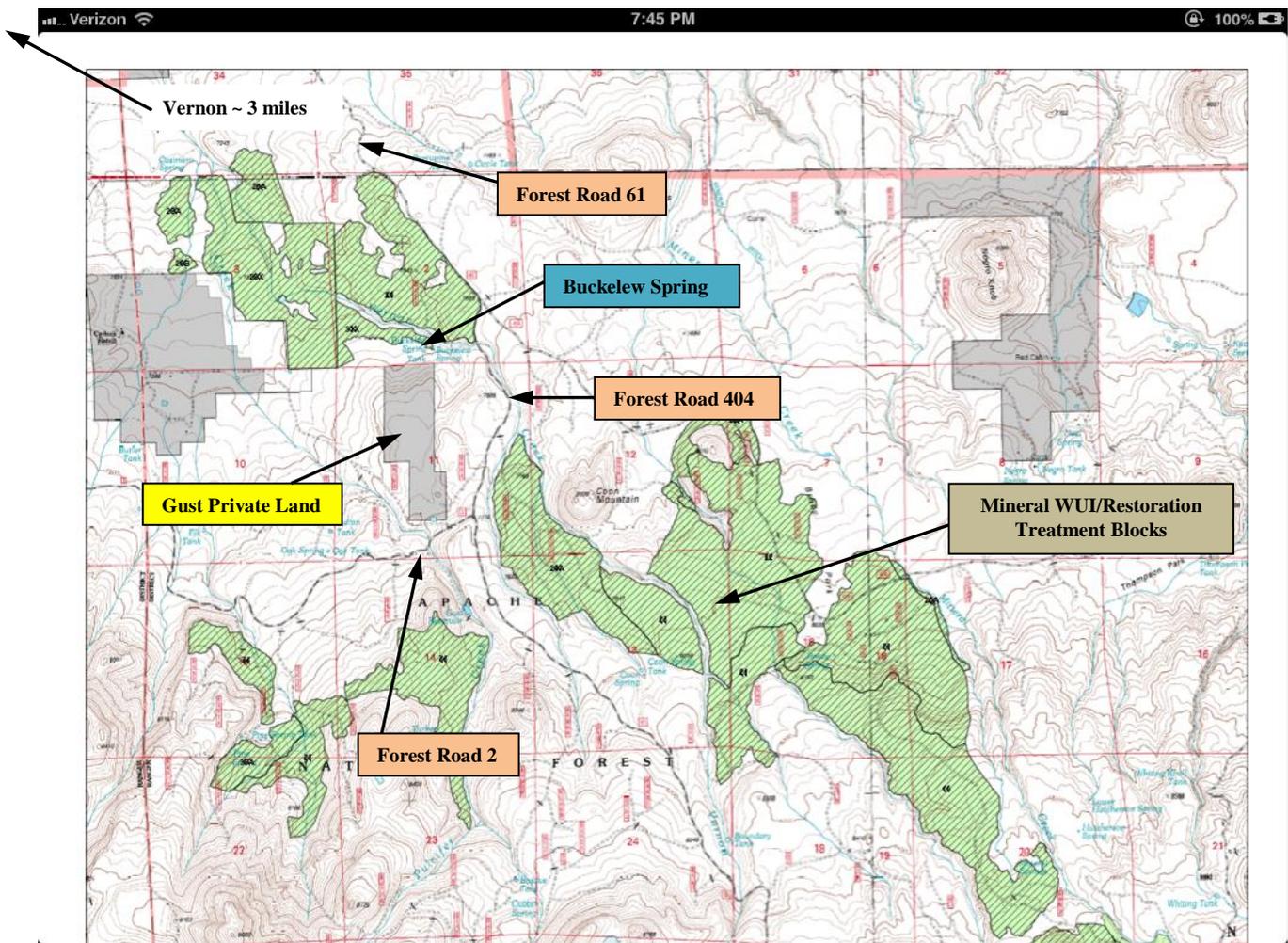
PROJECT OBJECTIVES: With assistance from felling and forest product removal expertise from Snowflake Power co, an engaging biomass processing company, the private land owner has entered into an agreement with the U.S. Fish and Wildlife Service to reduce small diameter age class of Ponderosa pine and 99% of the invasive Alligator juniper across about 80 acres of the 115 acre parcel. Objectives include:

1. Enhance stand structure favoring a mature stand dominated by trees 12” DBH or greater by removal of small diameter pines.
2. Select and favor development of tree groups for Abert’s squirrel and thermal protection for turkey poult and wild ungulates.
3. Ensure diversity in age classes, favoring mature overstory with adequate recruitment and stand structural diversity in age classes and heights for neo-tropical bird habitats.
4. Significantly reduce density and environmental influence of invasive Alligator juniper, favoring mature, mast producing trees, to increase herbaceous production in both meadow and pine habitats.
5. Enhance meadow edges and herbaceous production associated with removal of invasive trees.

PROJECT DESCRIPTION AND STRATEGIES:

1. Mark-to-cut tree removal generally less than 10” DBH, but selecting spacing and grouping to achieve desired objectives for non-game and game species. Use of hot-saw feller buncher, and chipping product removal is being promoted.
2. Mark-to-leave Alligator juniper throughout stand and meadow, with expected removal of 95% or more of tree density. Removal by shear and uprooting to remove most wood products, reduce resprouting, and increase biomass production.
3. Selected limbing and sapling removal by hand to reduce ladder fuels and leave ground fuels for protection of herbaceous understory and macroclimate for amphibians and ground nesting birds- to be completed across land parcel.
4. Selected understory hand thinning of juniper and small saplings in the mixed conifer/oak portion of the parcel (north end).
5. Felling and limbing of a select few larger but defective pines for down wood retention and log/slash hiding cover for various game and non-game species.

PROJECT LOCATION: W ½ portion Section 11, T9S, R25E. Center point of private parcel at open earth tank: 34°11’31.96”N / 109°39’57.16” W.



LAND OWNERSHIP AT THE PROJECT SITE(S):

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

- Parcel is owned by Gust family, Morgan Gust on-site overseer.

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

YES[] NO[x] N/A[]

Existing PLA between Gust and U.S. Fish and Wildlife Service, Partners Program for habitat and forest enhancements on Private lands; Safe Harbor and Big Game Stewardship Agreements pending between Gust and AZ Game and Fish Department.

HABITAT DESCRIPTION: Along with initial documents provided through the Partners Program of the U.S. Fish and Wildlife, various other data bases were queried to obtain an idea of the relative importance of the area adjacent to and including the Gust private land parcel located in Section 11. These lands are included in Game Management Unit 1 managed from the Pinetop Region 1 office in Pinetop, Arizona.

The 115 acre parcel is located at an elevation of about 8,000 feet, and is characterized by an over story of Ponderosa pine and Gambel oak, slopes ranging from 0-25%, with at least 75% of the land area less than 10% slope. The parcel encompasses a meadow of about 45 acres where soils are deeper and contain more clay components and has been farmed. Portions of this meadow and adjacent forest lands have been invaded by Alligator juniper due in part to the absence of fire but primarily as a result of disturbance from past farming practices.

Prior to European settlement of southwestern United States, pine forest similar to that on this parcel often contained large Ponderosa pines in relatively low densities (<70 trees/acre). Historically, pine forests had regular fire intervals (approximately 2-12 years) that promoted old growth pine forests and maintained meadows. As recognized in the Draft Recovery Plan for the Mexican spotted owl, threats to pine forests throughout the Southwest have transitioned from those associated with overharvest of large trees to stand-replacing wildfires. Pine forest habitats have been negatively impacted by increased pine densities (in this case exceeding 800 trees per acre), invasion of juniper, drought, and other factors. Combined, these factors have contributed to extremely high fire potential that often result in devastating wildfire effects such as the Wallow in 2011 and Whitewater Baldy in 2012.

ITEMIZED USE OF FUNDS:

Special Big Game License Tag Funds

\$20,000 - 1. Mobilization of contractor to fell and remove forest products, including Chipper, Hot-saw feller-buncher, skidder, tracked sheer, dozer, and Haul vehicles; 2. Hand crew(s) to limb retention trees for "raising canopy" from ground surface, lop/scatter slash; 3. Weed-free straw and hybrid barley to reclaim skid trails and landings.

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

- A. \$20,000 - U.S. Fish and Wildlife Partner Funding currently under contract agreement to item 1. above;
- B. \$13,500 – Value of forest products removed from private lands (avr. \$18/ton @ 15 tons/acre over 50 acres forest lands treated (including juniper removal).
- C. \$5,000 – Contributed salary of land owner and consultant for coordination and preparation of various support documents, field data collection and assimilation, and stand marking.

Morgan Gust, owner, will submit invoices for each major project component as identified above. Actual amount of the cost of forest product removal is dependent on commitment by NOBO, the regional biomass company, for the proposed treatments at the level prescribed. If a biomass company does not remove the products and woody debris, the private land owner will be faced with this cost, varying from \$1000-1500 per acre. Estimates for treating the entire parcel, forest and meadow, have been obtained from local contractors. Thinning and removal of wood products (at no value added to landowner) would be about \$24,000 for understory thin 7" or less DBH (\$225/acre). Increase in removal to 10" and less is estimated to cost \$500/acre, or \$48,000.

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION: Gust Family – contribute forest products from private lands and expertise to coordinate and prepare/review agreements and documentation; Frank Hayes, consultant with Heart and Horn Ecological Services- planning and implementation expertise; U.S. Fish and Wildlife Service Partners Program – funding for Phase I Forest health enhancements and Phase II water availability improvements.

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

YES[] NO[] N/A[x] Land owner access and education will be addressed in Phase III of the Restoration and Enhancement program.

PROJECT MONITORING PLAN: Photo points of pre, during, and post work; Conduct post treatment monitoring using point-quadrat method to estimate tree class density, including both Ponderosa pine and Alligator juniper (recorded separately).

PROJECT MAINTENANCE: Phases IV and V of the Restoration and Enhancement program have been designed to accomplish initial maintenance activities, specifically low intensity prescribed burning to maintain open meadow and harden residual stand to insects and wildfire. Additional removal of trees may become desirable after initial removal of understory and small diameter stems occurs from completion of Phase I, but will not be assessed until year 5 of the program.

PROJECT COMPLETION REPORT TO BE FILED BY: Frank Hayes with Heart and Horn Ecological Services, within 60 days of completion of the project.

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

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

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

PROJECT TITLE: Gust Property Forest Restoration and Enhancement

1) What is the estimated acreage of the project? 115 acres

2) How are the trees going to be cleared? (agra axe, chain saw, grubbing, push, chaining):

Initial discussions and field visits with potential partners focused on use hot-saw feller buncher and skidder to bring products to oversize chipper, fed into tractor/trailer chip haulers, for removal of targeted Pine products. Juniper would be removed either by dozer (push) or “plucked” with tracked shear to remove entire tree (maximize product and reduce resprouting issue). Limbing and removal of small saplings (not practical for hot-saw buncher) will be completed by hand crews.

3) What is the estimated number of trees per acre?

Ponderosa pine – data shows 800 trees per acre all age classes (except on steeper north face Mixed conifer), 40% estimate to be removed. Juniper estimates vary 200-1000 trees per acre over 15 acres.

4) Describe trees to be cleared (species, estimated diameter, single stem, multi-stem):

Ponderosa pine: variable, but focused removal of trees less than 10” DBH, to approximate stand spacing of 20 ft. Alligator juniper: multi-stemmed trees, variable densities, but most 12-16” DRC (regrowth).

5) Describe terrain (slope, soil type, rocks)

About 90% of parcel is relatively flat terrain (less than 5% slope) where equipment is to be used. Steeper north face will be hand thinning only. Meadow area will be avoided for traffic, skidding, and hauling where possible. Some skidding will occur out of the meadow, but is low density. Soils on slopes are rocky and gravelly, while soils in meadow areas are generally devoid of large rocks and have high amounts of clay. Inclement weather will preclude entry.

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, parcel is private lands. Owner is Gust family, Morgan Gust contact.

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

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

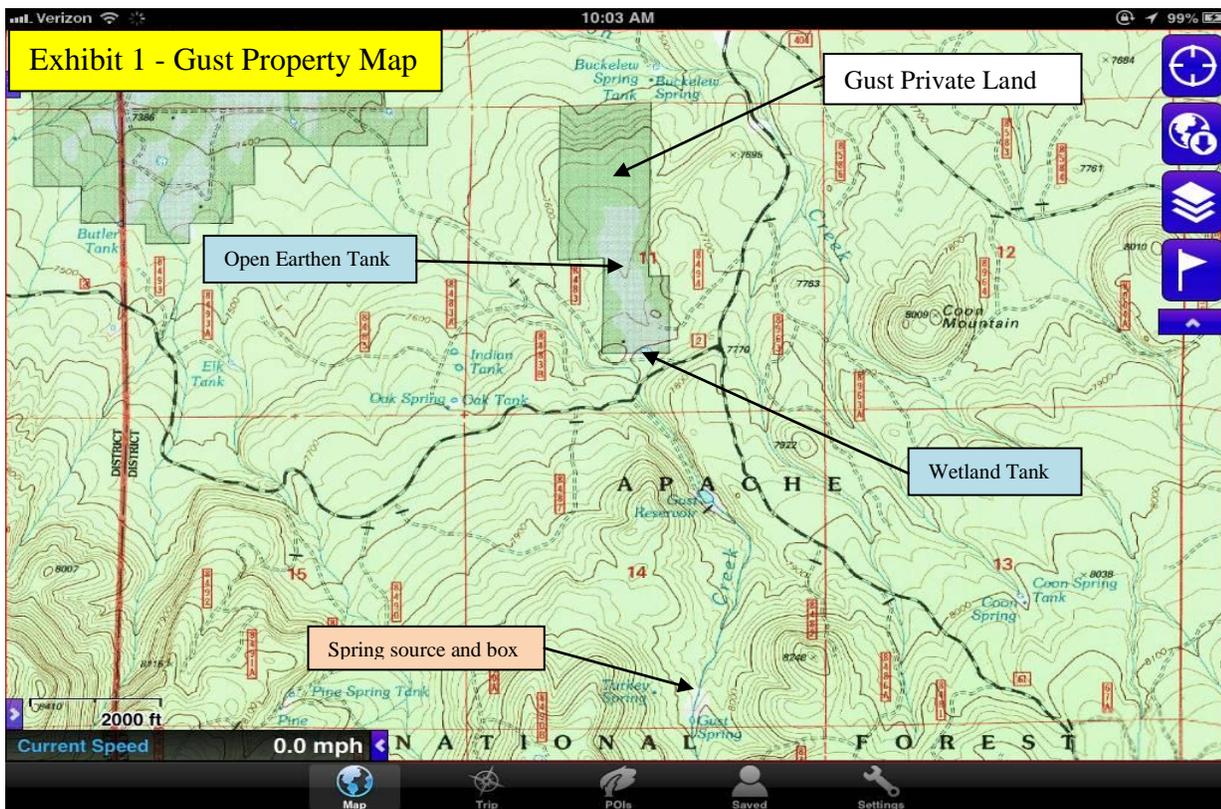
Please describe any restrictions to public access: Presently, land owner has small number of signs posted that show private lands, but has not posted or closed area to hunting. Existing and continued concern about trespass by vehicles cutting boundary fence and illegally entering meadow.

**GUST PROPERTY
FOREST RESTORATION AND HABITAT ENHANCEMENTS
APACHE COUNTY, ARIZONA
W ½ SECTION 11, T9S, R25E**

History: The Gust Property consists of 115 acres completely surrounded by the Apache Sitgraves National Forest located about 8 miles south by USFS dirt road of the small community of Vernon, Apache County, AZ. It was originally patented under the Homestead Act for farming.

James Buckelew obtained a Certificate of Water Right for use of water on this parcel of private lands (Sec. 11, T9S, R25E) in 1939 from springs located in SW SE ¼ Sec. 14, T9S, R25E along Supolvre Creek (now Pulcifer creek). This Certificate was issued by the AZ State Water Commissioner based on dates of priority in 1894 (6 acres), 1896 (14 acres), and 1919 (14.0 acres). Water was obtained from the spring sources in Pulcifer creek, held in a reservoir located in the NE ¼ of Sec. 14 (noted as Gust Reservoir on current maps), and fed into an irrigation ditch that extended to holding ponds and irrigated lands in Section 11. In 1956 John Carlock and wife sold the 115 acre parcel of private land, including associated water rights to Devens Gust and wife, father of Morgan and John Devens Gust (warranty deed in the record). In 1959, the Gusts constructed a spring box on the main portion of springs in Pulcifer canyon, and extended a pipeline along the drainage and roadway into the earthen reservoir on private lands in Section 11. The pipeline provided permanent and drinkable water for domestic use (at the old line cabin on the property, now a bat maternity site!), and a wetland earth tank (noted on Exhibit 1). The remainder of the spring water flows into Pulcifer Creek and then Gust Reservoir, where it is used to augment the flow into the tanks of the private land via the ditch when sufficient water collects in the Gust Reservoir.

In 1999, under the guidelines and auspices of Section 501 of the Federal Land Policy and Management Act of 1976, the Gusts obtained an Agriculture Irrigation and Livestock Watering System Easement (Ditch Bill Easement) for the spring source, spring box, pipeline, and ditch initiating on Forest Lands (Section 14) and extending onto private lands (Section 11). The steel pipeline (1") used initially was replaced in its entirety with a 1.25" polypropylene pipeline buried the entire 1.25 mile distance. Water from spring sources in Pulcifer canyon has been used continuously from the late 1800's and early 1900 are, using the irrigation earth ditch, reservoir and in more recent times also the pipeline.



Background: In June, 2012, the Gusts entered into a Private Lands Agreement (PLA) with the U.S. Fish and Wildlife Service under the auspices and funding authorities of the Partners for Fish and Wildlife Act for the property. Objectives of the forest management project (Exhibit A, PLA) include initial efforts in Phase I to restore ecological health and stand densities to the mid-elevation Ponderosa pine/Gambel oak habitat across approximately 80 acres of mature pine forest supported on this private in holding. Phase II will include meadow and man-made wetland habitat enhancements through a separate PLA, as funding allows or other available funding sources.

The private land owners are focused on protection of forested habitats through removal of small diameter trees and reduced ladder fuels, while also identifying and providing for other key attributes that will favor a variety of avian and mammal species, with special emphasis on Mexican spotted owl, Northern goshawk, other accipiter forest species, along with seasonal bat colonies. There are opportunities to enhance and promote growth of habitat supporting Merriam's turkey and Abert's squirrel.

Morgan Gust, private land owner, Frank Hayes consultant working with Gust, and Dominic Barrett (US Fish and Wildlife Service Partners Program biologist) have met with FS timber personnel, various U.S. Fish and Wildlife and Arizona Game and Fish personnel, and local forest products contractors to discuss options and opportunities for thinning and wetland habitat enhancement projects.

Most recently Hayes and Barrett met with AZ Game and Fish personnel from the Pinetop Region 1 office and the Unit 1 Wildlife Habitat Manager to discuss options, proposals for thinning and wetland improvement, and opportunities for additional funding. An extensive list of habitat improvement objectives and potential projects was formulated during this meeting and are being finalized with the review and concurrence of the private land owners.

Existing Forest Conditions: Along with initial documents provided through the Partners Program of the U.S. Fish and Wildlife, various other data bases were queried to obtain an idea of the relative importance of the area adjacent to and including the Gust private land parcel located in Section 11. These lands are included in Game Management Unit 1 managed from the Pinetop Region 1 office in Pinetop, Arizona.

The 115 acre parcel is located at an elevation of about 8,000 feet, and is characterized by an over story of Ponderosa pine and Gambel oak, slopes ranging from 0-25%, with at least 75% of the land area less than 10% slope. The parcel encompasses a meadow of about 45 acres where soils are deeper and contain more clay components and has been farmed. Portions of this meadow and adjacent forest lands have been invaded by Alligator juniper due in part to the absence of fire but primarily as a result of disturbance from past farming practices.



Gust Property W ½ Section 11, T9S, R25E. Fenced parcel encompasses 115 acres, Ponderosa pine /oak forest surrounding 40 acres of meadow. Photo looks south toward south end of parcel, note wetland pond in background beyond Gambel oak mott.

Prior to European settlement of southwestern United States, pine forest similar to that on this parcel often contained large Ponderosa pines in relatively low densities (<70 trees/acre). Historically, pine forests had regular fire intervals (approximately 2-12 years) that promoted old growth pine forests and maintained meadows. As recognized in the Draft Recovery Plan for the Mexican spotted owl, threats to pine forests throughout the Southwest have transitioned from those associated with overharvest of large trees to stand-replacing wildfires. Pine forest habitats have been negatively impacted by increased pine densities (in this case exceeding 800 trees per acre), invasion of juniper, drought, and other factors. Combined, these factors have contributed to extremely high fire potential that often result in devastating wildfire effects such as the Wallow in 2011 and Whitewater Baldy in 2012.

Gust Property Stand Density Data

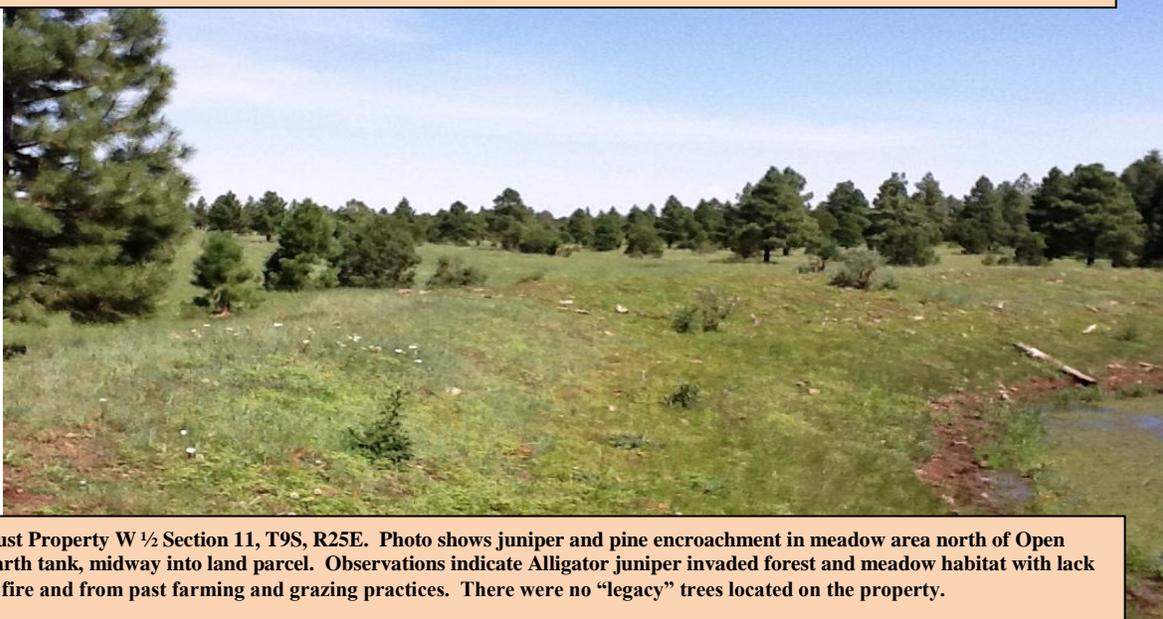
Transect	Size Classes					Trees/Acre
	1 – (1-6")	2 – (6.1-10")	3 – (10.1-12")	4 – (12.1"-16")	5 – (16"+)	

T-1	35%	19%	11%	22%	13%	941
T-2	22%	32%	15%	17%	14%	880
T-3	23%	25%	11%	24%	17%	710
Mean Percent	27%	25%	12%	21%	15%	844
Mean Density Per size Class	228	211	101	177	127	

The data in the table above, recently collected from the Gust property, clearly shows an overabundance of smaller diameter size pine encroachment, and does not include juniper species. It is important to note that a significant amount of the over story is dominated by mature aged trees, many of which are greater than 20” DBH. Snag density is relatively low, observations indicate 1-2 per acre, mostly 12-16” DBH trees.



Gust Property W ½ Section 11, T9S, R25E. Fenced parcel encompasses 115 acres, Ponderosa pine /oak forest surrounding 40 acres of meadow. Photos are of earth tank in middle, fed by overflow from wetland pond ¼ mile south. Note encroachment, both juniper and small pines at meadow’s edge.



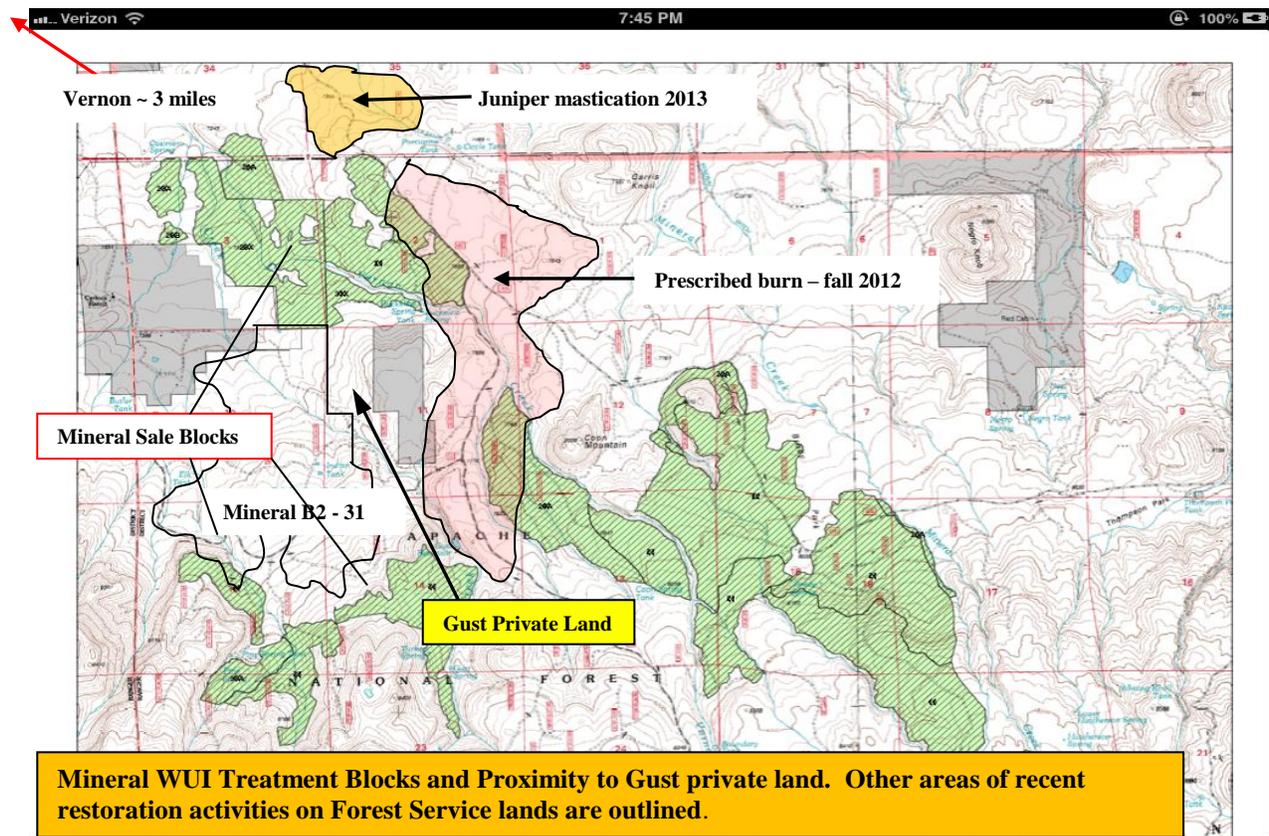
Gust Property W ½ Section 11, T9S, R25E. Photo shows juniper and pine encroachment in meadow area north of Open Earth tank, midway into land parcel. Observations indicate Alligator juniper invaded forest and meadow habitat with lack of fire and from past farming and grazing practices. There were no “legacy” trees located on the property.

Pine forest habitats in Arizona have been identified as a “Priority B Habitat” by the Coordinated Implementation Plan for Bird Conservation in Northern Arizona. As discussed in this Plan,

conservation efforts should maintain current distribution of ponderosa pine habitat and manage for old growth forests. The US Forest Service has made large scale efforts to restore pine forests and other forest types throughout Arizona. Adjacent Forest Service lands near the project site have been recently thinned under the guidelines for harvesting in the Mineral WUI and White Mountain Stewardship program. While guidelines for thinning in Northern Goshawk habitat are being followed, concern has been expressed by Partners and Gust that treatment blocks adjacent to the property have been thinned at levels that offer reduced forest habitat for species noted in the Arizona State's list of species of greatest concern.

This small but integral parcel of private lands lies within the transition zone between Ponderosa pine/oak forests and juniper savanna grasslands, critical winter range for various big game and non-game species extends across and easily encompasses these private lands. A review of habitat needs and species occurrence available from the *Habimap* program associated with the Arizona State Wildlife Action Plan clearly show that this forest-woodland transition zone, especially where wetland habitat is available, is one of the most important areas of interest and focus in management of state wildlife non-game species as well. A query of habitat and species data bases in *Habimap* provides extensive lists of bird and non-game species that are known or possibly use habitats found within this small "oasis" of private land within extensively treated forest habitats.

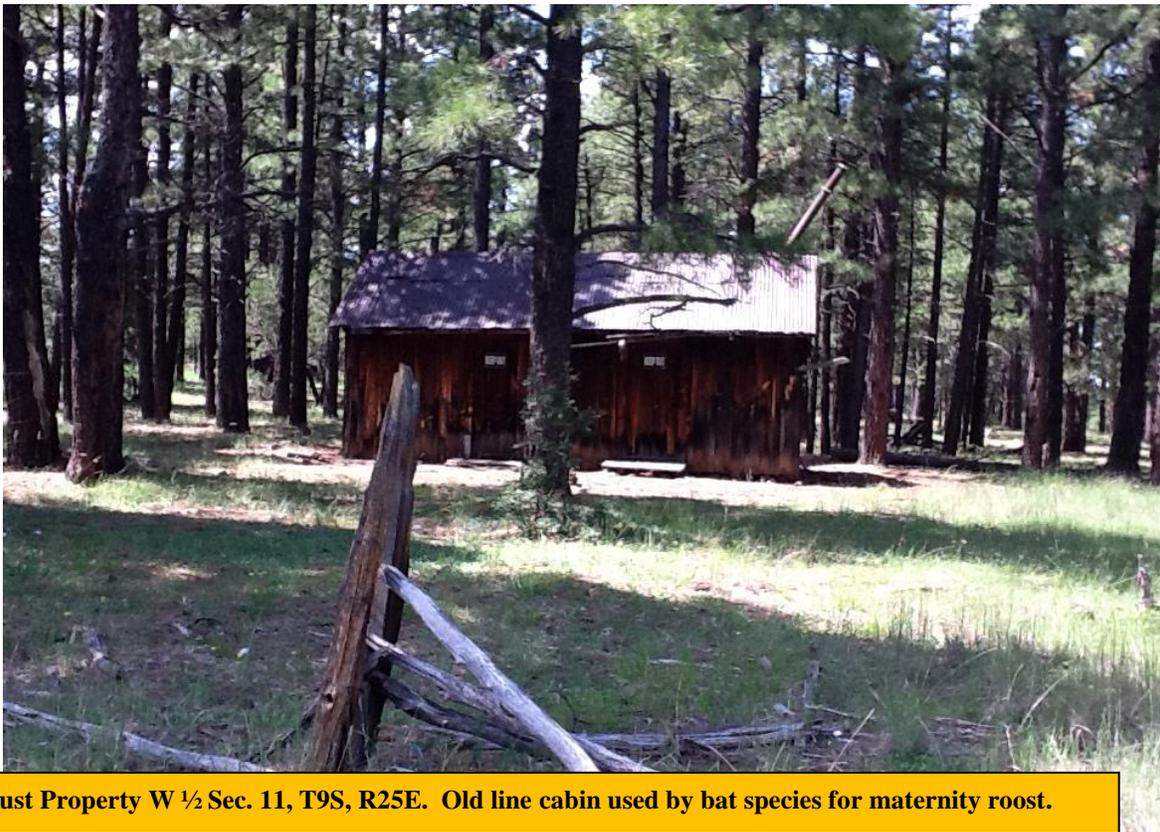
Adjacent Forest Service lands, in most instances, have been treated with forest management practices, including understory thinning, timber harvest, and prescribed burning designed to enhance or protect various habitats for game and non-game species. The Springerville Ranger District, for example, has been engaged in Winter Range Landscape Restoration during the last decade where large landscape treatments have targeted this Pine/woodland transition zone with various treatments occurring from Springerville to Vernon. Proposed forest restoration and wetland improvement proposals on Gust property will be a small but important compliment to this significant, ongoing effort that has resulted in thousands of acres of prescribed burning, invasive juniper removal, and forest health thinning. More recently, Lakeside Ranger District, immediately west of the Gust property, has completed planning for landscape treatments over several thousand acres of woodland habitats as well.



As evidenced by the relative species richness and diversity found within this area, it is important to recognize that ongoing and future planned management of the Gust property is intended to compliment ongoing treatments on Forest Service lands, and ensure protection and enhancement of several habitats found only on this small parcel of private lands. For example, during the most recent inspection of the spring box and system that services the private lands, a mature adult female Northern goshawk was observed in Pulcifer canyon within ¼ mile of the wetland and meadow habitats provided on the property.

Species Emphasis and Occurrence: Various data bases and on-line environmental review tools were used to obtain an extensive list and focused appreciation of potential or known species occurrence and habitat needs for this important tract of land. Obviously, several big game species utilize the wet meadow, water sources, and associated habitats including mule deer, elk, Merriam’s turkey, and black bear.

At various times during recent inspections, different species have been observed by biologists or the land owner. In a field trip in early fall, 2012, Arizona myotis and Townsend’s Big Ear bat were observed using the old line cabin on the property, most likely as a maternity site by one or both during summer months (see photo below).



Gust Property W ½ Sec. 11, T9S, R25E. Old line cabin used by bat species for maternity roost.

Special status species occurrence listings from the Heritage Data Base indicate that the parcel is within designated Critical Habitat for Mexican Spotted owl, and likely supports foraging for Northern goshawk, Mexican spotted owl, Golden eagle, and winter roost and hunting habitat for Bald Eagle. Wet meadow habitat supports vole populations, including possibly the Southern Red-backed vole, a Forest Service sensitive species, and the Mexican vole (State species of Conservation Need). Recent inspections did show some vole activity, but lack of residual herbaceous production due in part to unauthorized and unwanted livestock grazing limits this activity.

Pine forest habitat associated species that will benefit from forest restoration activities also include Whiskered Screech-Owl, Whip-poor-will, Arizona Woodpecker, Virginia's Warbler, Red-faced Warbler, Painted Redstart and Hepatic Tanager (Arizona Partners in Flight Bird Conservation Plan excerpted from PLA F12AC00, June 2012). A review of Breeding Bird Atlas occurrence and nesting data available from the State Habimap program indicates that numerous additional neo-tropical bird species are known or likely use pine forest habitats in close proximity to meadow and wetland environments.

Finally, there is ample evidence from tracks, sign, nesting activity, etc that numerous other predators and non-game mammals and amphibians use this small parcel of land. For example, the perennial earthen ponds certainly provide suitable habitat for Northern leopard frog, and recent field visits during monsoon weather provided an opportunity to hear and observe at least two tree frog species on the property.

Initial Management Goals for the Gust Property

1. Protect and enhance forest, meadow, and wetland habitats encompassed by the parcel.
2. Continue to provide foot traffic recreational opportunity for the visiting public as long as land respect is maintained.
3. Consider long-term opportunities for contributing to the re-establishment of native populations of wildlife species endemic to the area.

4. Foster new and continued partnerships in the management of species and habitats using the land parcel.
5. Improve the efficiency and use of decreed water rights on the land.
6. Continue to provide and improve an ungrazed “oasis” of water and wet meadow for wildlife use.

Initial Management Objectives for the Gust Property

1. Initiate forest restoration practices that will reduce the risk of damaging wildfire and drought to Pine/oak forests encompassed by the land parcel.
2. Continue management of decreed water use from spring sources on Forest Service lands for the benefit of the private land and wildlife/game species that use or rely on the private parcel of land.
3. Enhance the continuation and existing uses of water resources for these benefits.
4. Increase the awareness to the public user of Forest and State resources of the value of this parcel of land for habitat purposes.
5. Apply practices that will protect or enhance habitats encompassed by the existing fenced parcel of private lands.
6. Explore options for development and approving land owner/agency agreements that will enable or expedite management proposals and strategies or re-establishment of species endemic but absent from habitats in the area.
7. Improve and replace the existing fence to protect the resource from unauthorized, destructive cattle trespass.

Potential Strategies for Achieving Objectives for the Gust Property

1. Phase I – Implement forest restoration thinning to prescription that emphasizes retention of mature and diverse ponderosa pine stand, while reducing competition from invasive juniper species. Proposed prescription at present will be a “mark-to-cut” approach focused on 10” diameter pine and below, with 95% juniper removal with “mark- to-leave” large mast producing trees.
2. Phase II – Enhance and improve efficiency and production of existing water sources to and on the private land parcel, focusing on maintaining open water sources for bats and avian species that require or optimize this habitat selection. Phase II should also include activities to protect or enhance bat roosting habitats (cabin protection or alternative roost development).
3. Phase III – Ensure an effective access and education program for continued, limited, public use by foot with complete refencing of the property on existing surveyed boundaries and a substantial and meaningful signage program that emphasizes partnerships, responsibilities, and values of habitats being managed for wildlife use and benefits.
4. Phase IV – Complete and approve applicable agreements that demonstrate commitment of agencies and land owners in long-term habitat and species management on this parcel of land, including big game stewardship and re-patriation of native species such as, potentially, Northern leopard frog and Southern Red-backed vole with appropriate safe harbor agreements.
5. Phase V – Initiate programs for long-term maintenance and protection of forest and meadow habitats, including possible application of prescribed fire within a 3-5 year period of forest thinning activities.

ARIZONA GAME AND FISH DEPARTMENT

VOLUNTEER HOURLY RATES AND CLASSIFICATIONS WORKSHEET

PROJECT TITLE: _____

The value of volunteer labor should be calculated at the hourly rate of an employee doing similar work, or using hourly rates from the Arizona Department of Administration’s Human Resource web site, plus a standard ERE rate of 35%. http://www.hr.az.gov/HR_Professional/Class_Comp/PDF/alphacovered.pdf

\$0.445/mile should be the calculation used for mileage.

Water Development	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Habitat Restoration and Clean Up	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Fisheries	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Nongame Branch Project	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Misc/office work	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			varies	
Community Services	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$7.44	
Events and Other	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Research Branch	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$14.14	
Wildlife Area Hosts	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$17.44	
Education Programs	Volunteer Hours	Volunteer Miles	Hourly Rate	Estimated Value
			\$16.07	
Totals				