

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

Game Branch / HPC Project Number: 14-112

PROJECT INFORMATION

Project Title: Gust Phase II Habitat Enhancement – 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[X] NO[]

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

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

Project Type: Forest Restoration

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. Access for hunting by foot traffic only is allowed.

Big Game Wildlife Species to Benefit: Elk, mule deer, black bear, Merriam's turkey

Implementation Schedule (Month/Day/Year):

Project Start Date: November, 2015

Project End Date: May 30, 2017

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 Parkway

#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.

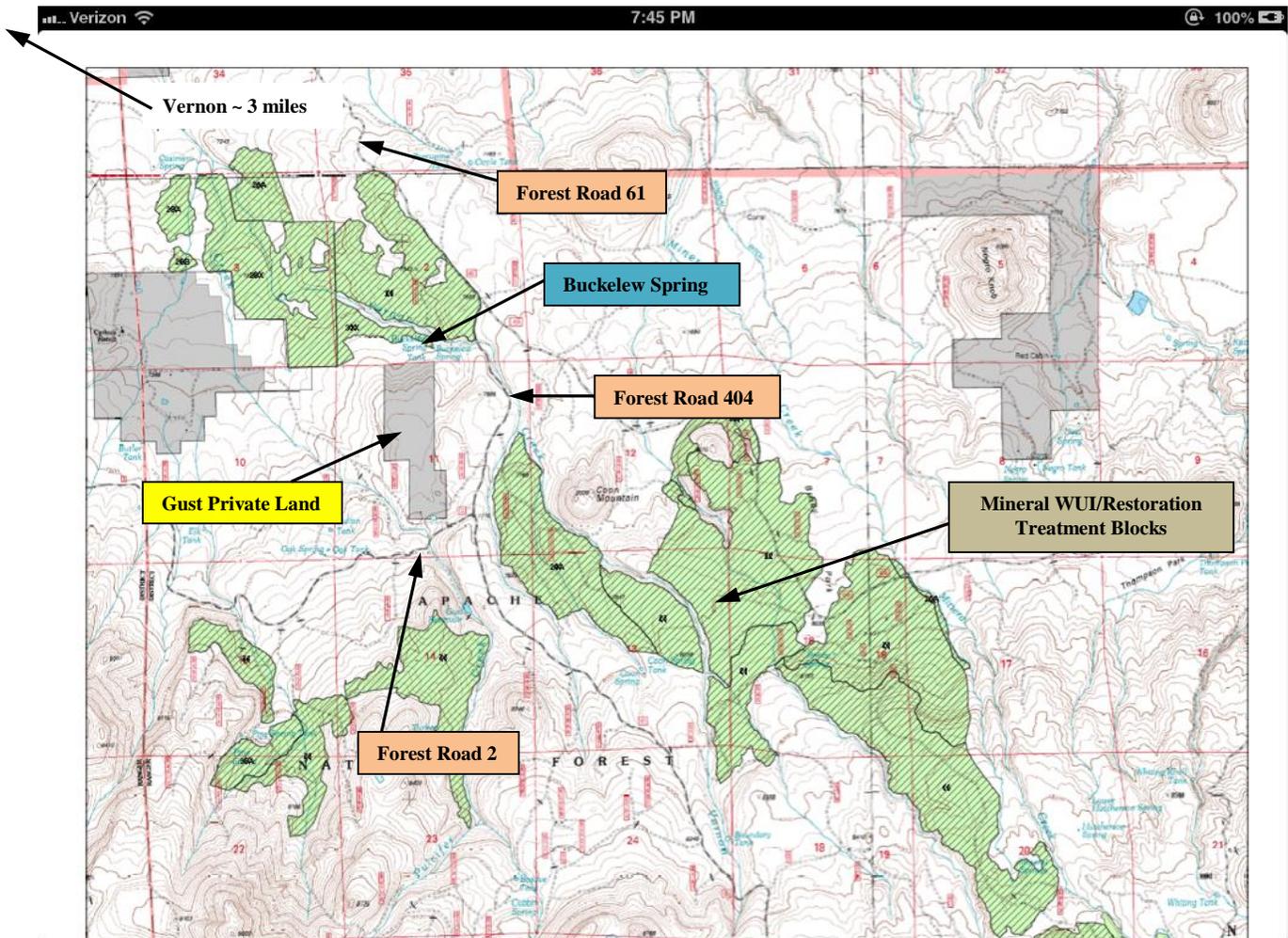
PROJECT OBJECTIVES: With assistance from felling and forest product removal expertise from Snowflake Power co, an engaging biomass processing company, the private land owner has entered into an agreement with the U.S. Fish and Wildlife Service to reduce small diameter age class of Ponderosa pine and 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 poults 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. Land owners currently allow hunting access by foot only, and would entertain a Land Owner Agreement with the Department for ensuring access.

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. Currently access by foot is allowed, though the property was posted at one time at the main gate, there is no enforcement or intention of preventing hunting access.

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.