

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

PROJECT INFORMATION

Project Title: Mud Tank Wash Grassland Enhancement Project		Project No. 10-303
Region/GMU: 17A and 19B		HPC: Prescott HPC
Project Type: Juniper Removal/Grassland Enhancement/Travel Corridor Maintenance		
Project Description: This project would fund hand-crews using chain saws to remove encroaching juniper trees on approximately 1,000 acres of grassland habitat located on the K4, Bar Triangle and Barney York Ranches. These ranches contain extensive great basin grassland habitat with large areas that are converting to a woodland community due to encroachment by juniper trees. In addition to maintaining critical grassland habitat, this project would open travel corridors between two large grasslands in Big Chino Valley and Williamson Valley.		
Wildlife Species to Benefit: Pronghorn, Mule Deer, Elk		
Possible Funding Partners:		
Implementation Schedule: Beginning: Spring 2011 Completed: Spring 2012		NEPA Compliance: (if applicable) Completed: Yes _____ No _____ Projected Completion Date:

PROJECT FUNDING

SBG Funds Requested: \$ 15,000.00
Cost Share Funds: \$ 63,300.00
Total Project Costs: \$ 78,300.00

PARTICIPANT INFORMATION

Applicant: Darren G. Tucker, Wildlife Manager Arizona Game and Fish Department – Prescott Telephone: 928-636-9130	Address: Arizona Game and Fish Department 5325 North Stockton Hill Road Kingman, Arizona, 86409
AGFD Contact and Phone No. (If applicant is not AGFD personnel)	
Coordinated with: Johnny Kieckhefer, Owner K4 Ranch 928-273-1100 Mike Pierce, Owner Bar Triangle Ranch 19000 Williamson Valley Rd. Prescott, AZ 86305 (928) 776-1471	Date:

<p>Mark Kenson, Owner, Barney York Ranch 928-713-7221</p> <p>Chris Lowman, Range Resource Area Manager Arizona State Land Department 809 C Gail Gardner Way Prescott, AZ 86305 (928) 778-9567 ext. 3</p> <p>Dominic Barrett Fish and Wildlife Biologist USFWS Partners for Fish and Wildlife Program Arizona Fish and Wildlife Conservation Office PO Box 39 Pinetop, AZ 85935 928-338-4288 ext.25</p> <p>Wade Albrecht, Landowner Relations Program Arizona Game and Fish Department – Region III Kingman 5325 North Stockton Hill Road Kingman, Arizona, 86409 (928) 759-9301 ext. 108</p>	
<p>Applicant's signature: Darren G. Tucker, Wildlife Manager, Prescott</p>	<p>Date: September 1, 2010</p>

**SEND COMPLETED APPLICATIONS TO:
Game Branch
AZ Game and Fish Dept.
5000 W. Carefree Highway
Phoenix, AZ 85086**

WAS PROJECT PRESENTED TO THE LOCAL HPC? YES _____ NO X

HAS PROJECT BEEN SUBMITTED IN PREVIOUS YEARS? IF SO WAS IT FUNDED?
No

NEED STATEMENT/PROBLEM ANALYSIS:

During the 1950's, 60's and 70's, thousands of acres of junipers were mechanically treated in an effort to increase and/or maintain grassland habitat in central Yavapai County. In early 1995, the Arizona Game and Fish Department's (Department) Research Branch conducted a statewide evaluation of antelope habitat. For many of the Units within Yavapai County, the evaluation suggested that juniper and tall shrub encroachment had greatly reduced the amount of open grassland and that these areas would benefit from removal of these plants.

Without some form of intervention, the ongoing encroachment of trees in the project area will reduce both the size of the grasslands and populations of grassland associated wildlife species. (Photograph 1) Additionally, the two grassland areas associated with this project will be further cut-off and fragmented reducing the ability of pronghorn to move freely between them. Research has shown that both avian and mammalian species shift with only moderate encroachment of pinyon-juniper into grasslands (Rosenstock 1999, Knopf 1994, LaRue 1994, Alexander and Ockenfels 1994). Currently, there is an abundance of pinyon-juniper habitat but grassland habitat is declining. Therefore, restoration of grasslands is needed to maintain habitat for grassland-associated species, particularly pronghorn antelope.

Alexander, A. and R. A. Ockenfels. 1994. Juniper densities relative to pronghorn use in central Arizona. Proceedings of Pronghorn Antelope Workshop 16:76-85.

Knopf, F. L. 1994. Avian assemblages on altered grasslands. Studies in Avian Biology 15:247-257.

LaRue, C. T. 1994. Birds of northern Black Mesa, Navajo County, Arizona. Great Basin Naturalist 54:1-63.

Rosenstock, S. S. 1999. Effects of juniper woodland expansion on breeding birds in grasslands of northern Arizona. Arizona Game and Fish Department Research Branch Technical Guidance Bulletin No. 1. 16pp.



Photograph 1

Photograph of juniper re-growth in previously treated area located on private property owned by K4 Ranch, Unit 19B. Note pronghorn antelope in upper one- third of photograph.

PROJECT OBJECTIVES:

Encroaching juniper trees will be removed from approximately 1,000 acres of land that possess deeper soils and historically provided grassland habitat. Some of these areas were treated in the past using a front-end loader to push juniper trees over. These previously treated areas are experiencing re-growth of junipers. The species of juniper trees present within the project area does not require herbicide application post-cutting.

Existing grasslands will be expanded and travel corridors will be improved to ensure connectivity of grassland parcels fragmented by tree encroachment. The result will be a more expansive and contiguous grassland that will benefit pronghorn and other grassland associated wildlife species.

Primary treatment areas, identified on the detailed map below, will result in unobstructed travel corridors between Big Chino Valley to the north and Williamson Valley to the southwest and will receive priority. The secondary treatment area will result in grassland enhancement/expansion. It is important to realize that not every acre within the treatment areas will be treated. Portions of these areas are juniper free.

PROJECT STRATEGIES:

- Chainsaw crews will be contracted to cut trees and lop the slash to a residual height no higher than 18”.
- Juniper work will be conducted in a manner that provides travel corridors for antelope moving between Big ChinoValley and Williamson Valley. Two distinct routes will be opened.

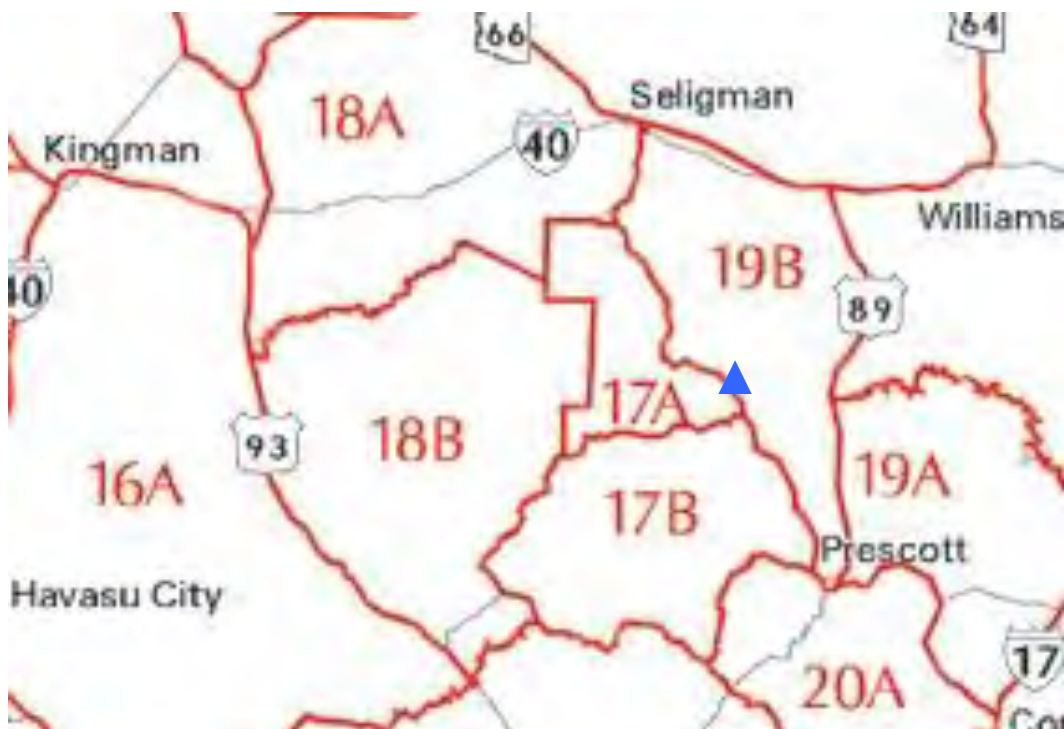
PROJECT LOCATION:

The project is located on the K4, Bar Triangle and Barney York Ranches in southeastern Unit 17A and west central Unit 19B. The project is located in north-central Arizona approximately 25 miles northwest of Prescott along the Williamson Valley Road.

T. 17 N., R 3 W., Sections 7 & 18

T. 17 N., R 4 W., Sections 10, 11, 12, 13, 14 & 15

Project Area Overview Map

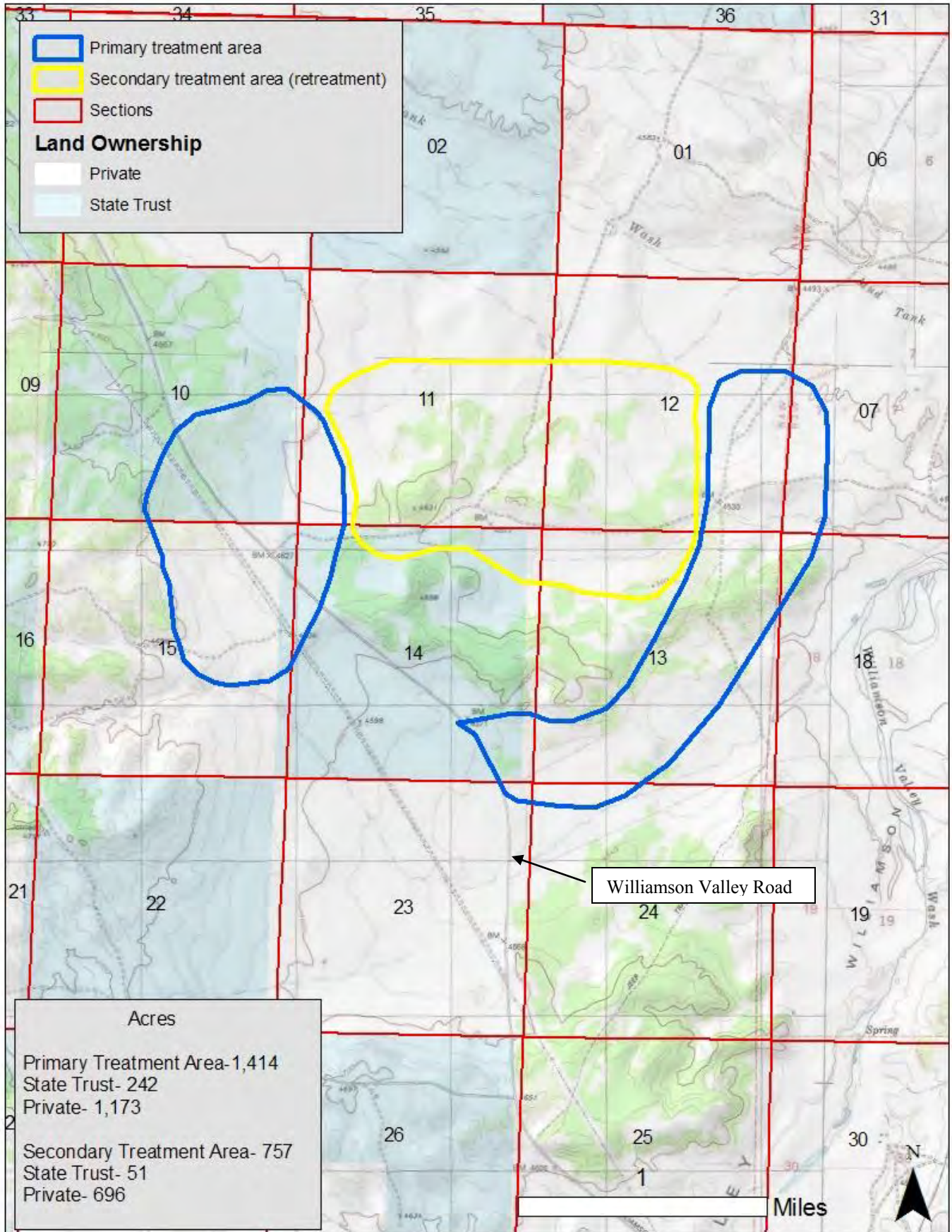


▲ Marks the general project location.
Detailed Project Location Map

The entire project area is in the general location of the Williamson Valley Road. Though this project is geared towards grassland improvement for antelope, the area is also utilized by elk and mule deer.

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

The majority of the project area is located on private property owned by the K4 Ranch (Johnny Kieckhefer). A small portion would occur on private property owned by the Barney York Ranch (Mark Kenson). The remaining area is on state trust land.



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

No. This document would be completed in the future.

HABITAT DESCRIPTION:

The habitat in the project area is dominated by great basin grassland and pinyon/juniper woodlands. Species present within the project area include grama grasses (blue, black and side-oats), shrub live oak, rabbit-brush and barberry. The elevation averages about 4,600 feet. Numerous windmills and dirt stock-tanks provide water sources. Most of the area is used as grazing land for livestock. Much of the proposed treatment area is characterized by encroachment of small sized juniper trees. (Photograph 2)



Photograph 2

Photograph of juniper encroachment on private property owned by K4 Ranch, Unit 19B. Photo taken looking north towards Big Chino Valley with Big Black Mesa on the horizon.

ITEMIZED USE OF FUNDS:

Based on similar treatments on other project areas, hand-cutting will likely average \$70-75/acre. Although most of the proposed area is comprised of trees less than six feet tall with a relatively low density, there are patches with higher tree density and larger trees. Therefore the cost per acre will vary based on the particular site. The preferred hand-cutting contractor has done substantial work for the Department on other similar projects and understands how to maximize effort to treat as many acres as possible. Based on this cost per acre, it is estimated that a total of **1,000-1,070** acres will be treated. Juniper cutting efforts will begin within the primary treatment areas in an effort to open up antelope travel corridors.

BUDGET ANALYSIS/ANTICIPATED COSTS
MUD TANK WASH GRASSLAND ENHANCEMENT PROJECT

COOPERATOR AND PROJECT COMPONENTS	COST-SHARE DOLLARS	GRANT DOLLARS REQUESTED
ARIZONA GAME AND FISH DEPARTMENT/HPC FUNDING		
<ul style="list-style-type: none"> • Provide labor to assist in project identification, design, marking and implementation as well as supervision of crews. Calculated as 10 days @ \$200/day. 	\$ 2,000.00	
<ul style="list-style-type: none"> • Provide funding to hire chainsaw crews to cut junipers and lop slash to maximum height of 18” above ground level to enhance grassland and promote rapid use by antelope. <i>A portion of the HPC money would be used to fund crews on state trust land. The remainder will be used as match to leverage additional LIP funding (36% HPC funds, 64% LIP funds)</i> 		\$ 15,000.00
K4 RANCH		
<ul style="list-style-type: none"> • Allow habitat manipulation on private property. 		
<ul style="list-style-type: none"> • Submit application to Arizona State Land Department to place improvement upon state land. 	\$ 150.00	
<ul style="list-style-type: none"> • Provide labor to assist in identification, design, marking and implementation of project. Calculated as 5 days @ \$200/day. 	\$ 1,000.00	
BAR TRIANGLE RANCH		
<ul style="list-style-type: none"> • Allow habitat manipulation on private property. 		
<ul style="list-style-type: none"> • Submit application to Arizona State Land Department to place improvement upon state land. 	\$ 150.00	
BARNEY YORK RANCH		
<ul style="list-style-type: none"> • Allow habitat manipulation on private property 		
UNITED STATES FISH & WILDLIFE SERVICE (PARTNERS PROGRAM)	\$ 40,000.00	
<ul style="list-style-type: none"> • Provide funding to hire chainsaw crews to cut junipers and lop slash to maximum height of 18” above ground level to enhance grassland and promote rapid use by antelope. Private property only. 		
LANDOWNER INCENTIVE PROGRAM FUNDING	\$ 20,000.00	
<ul style="list-style-type: none"> • Provide funding to hire chainsaw crews to cut junipers and lop slash to maximum height of 18” above ground level to enhance grassland and promote rapid use by antelope. Private property only. 		
SUBTOTAL	\$ 63,300.00	\$ 15,000.00
Project Total = \$ 78,300.00		

Cost Share Discussion:

The K4 Ranch incurs a substantial annual expense to operate and maintain numerous water resources on the Ranch. In addition to supplying reliable water, the K4 has spent a considerable amount of time and money on juniper eradication efforts, over the years, to improve grassland habitat. There is no doubt that these actions have benefited pronghorn antelope, elk, mule deer and numerous other wildlife species for decades. Though the assets involved are geared toward the benefit of cattle, they are also critical elements of infrastructure in the support of wildlife resources on the Ranch. Though no effort was made to utilize that expense in this document, the Department recognizes that there is considerable cost share available in these areas as well. There is abundant potential for the Department to partner with the K4 Ranch on grassland improvement projects in the future. These opportunities to further conservation efforts and increase capacity on the ranch may include utilizing the potential cost share mentioned above.

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:

(Detailed project components and costs are available above in the Budget analysis.)

ARIZONA GAME AND FISH DEPARTMENT

- Provide funding through HPC and secure contract hand-cutting crew.
- Provide technical support to secure LIP funding.
- Provide labor during pretreatment (ID, design, marking, mapping, implementation).
- Provide technical support during project to ensure objectives are met.
- Provide field support when needed during the project.

UNITED STATES FISH & WILDLIFE SERVICE

- Provide funding to hire chainsaw crews

JOHNNY KIECKHEFER, OWNER, K4 RANCH

- Provide assistance during pretreatment
- Provide logistical assistance during hand-cutting work portion of project.
- Submit application to Arizona State Land Department to place improvement upon state land.
- Allow habitat manipulation on private property.

ARIZONA STATE LAND DEPARTMENT

- Provide support for project preparation and implementation.
- Provide permit to place improvement upon state land.

BAR TRIANGLE RANCH

- Provide assistance during pretreatment
- Submit application to Arizona State Land Department to place improvement upon state land.

BARNEY YORK RANCH

- Provide assistance during pretreatment.
- Allow habitat manipulation on private property.

PROJECT MONITORING PLAN:

Monitoring of ongoing juniper cutting will be conducted by Arizona Game and Fish Department Wildlife Managers. The treatment area would be photographed extensively before treatment and after treatment.

PROJECT MAINTENANCE:

There are no short-term maintenance requirements.

PROJECT COMPLETION REPORT TO BE FILED BY:

Darren G. Tucker, Wildlife Manager, Prescott

WATER DEVELOPMENT PROJECTS (see attached worksheet):

Not Applicable

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

**ARIZONA GAME AND FISH DEPARTMENT
TREE SHEARING WORKSHEET**

PROJECT NAME: Mud Tank Wash Grassland Enhancement Project

- 1) **What is the estimated acreage of the project?** Project area is roughly 2,171 acres; approximately 1,000 acres will be treated using hand crews with chain saws.
- 2) **How are the trees going to be cleared? (agra axe, chain saw, push):** Hand crews using chain saws
- 3) **What is the estimated number of trees per acre?** 10-30
- 4) **Describe trees to be cleared (species, estimated diameter, single stem, multi-stem):** No alligator junipers are located in the project area. All shaggy bark junipers will be cut with the exception of large single trunk trees with dbh of at least 14 inches. A majority of the trees are less than six feet in height and single stem.
- 5) **Describe terrain (slope, soil type, rocks, etc.)** The project area is mostly flat, with clay type soil.
- 6) **Please list any special land management status for the project site (i.e. Wilderness, National Park, National Monument, etc). If private land, list landowner.** K4 Ranch (Johnny Kieckhefer) and Barney York Ranch (Mark Kenson)
- 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
The private property owners are partners with this project.

Is the site relatively accessible for tree shearing equipment? Not Applicable

Please describe any restrictions to public access: Access to private property is by permission only