**Appendix 4, "*Biological and Botanical Survey, 1216 Stevens Road, Eagle Point, Oregon, 97524***

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Department of Veteran Affairs
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**BIOLOGICAL & BOTANICAL RESOURCES EVALUATION AND WETLAND DETERMINATION FOR EAGLE POINT NATIONAL CEMETERY EXPANSION STUDY AREA LOCATED AT 1216 STEVENS ROAD, EAGLE POINT, OREGON. 0615-2010-1929.**

## INTRODUCTION

During the time period April 20- June 30, 2010, a Biological Resources and Wetland Evaluation was conducted on a fifteen acre parcel of land immediately adjacent and to the east of the Eagle Point National Cemetery, Eagle Point, Oregon. The site is located within Section 2, Township 36 South, Range 1 West, USGS 7 ½ minute Eagle Point Quadrangle (042.464577° N / -122.7832788° W) (see Figure 1, Enclosure B).

The reason for these investigations is the National Cemetery Administration's desire to acquire the fifteen acres of land and expand the National Cemetery for additional in ground burials. The conversion of the fifteen acres will require ground disturbing activity. The expansion will include the construction of above ground cremated remain niches (columbarium), additional casket (pre-placed crypt) gravesites, and associated roads and infrastructure.

Particular attention was focused upon the projects potential impact to special-status species and their habitats. Historically, the project area (Action Area) has been used primarily for a rural residence and sheep grazing. The site also contains a manufactured with a detached metal framed garage/workshop. A small, man-made stock pond has been constructed in uplands adjacent to the manufactured home along the eastern boundary of the property. The pond is used for the sheep herd and one llama. The site is best characterized as a non-native grassland containing remnants of an oak savanna.

Prior to the spring surveys in April, inquiries were made into the federal and state listed plant and wildlife species which may occur on or near the subject property. A list of the *Federally Listed, Proposed, Candidate Species and Species of Concern Under the Jurisdiction of the Fish and Wildlife Service Which May Occur Within Jackson County, Oregon,* was requested from the United States Fish & Wildlife Service. Additionally, the *Rare, Threatened and Endangered Species of Oregon*, Oregon Natural Heritage Information Center, March 2007, was reviewed. Those listed plants and wildlife with a potential to occur on or near the property are listed in Table 1.

Field studies were conducted on foot making observations and noting habitat conditions, surrounding land uses, and plant and wildlife species. In accordance with guidance set forth in the United States Army Corps of Engineers *1987 Wetlands Delineation Manual* a wetland determination was conducted. Field surveys were conducted to determine the presence of sensitive species, and/or suitable habitat for sensitive species. These surveys also included ocular reconnaissance of the entire study area and buffer zones for nesting (or burrowing) raptors.

## ACTION AREA AND EXISTING CONDITIONS

The subject fifteen acre property is located in the Siskiyou Ecological Province. The Siskiyou Ecological Province in Oregon encompasses a very small area in the southwest corner of Klamath County, most of Jackson County, the southern portion of Douglas County, all of Josephine County, and the mountainous eastern portion of Curry County. It extends about 100 air miles east to west and about 75 miles north to south in Oregon. Siskiyou Province covers about 3.7 million acres in Oregon and extends into California.

The subject property's location is approximately one air mile southeast from the city of Eagle Point, Oregon. The property's highest elevation is 1560 feet above sea level (southern boundary of property). The property is situated on topography that slopes gently towards the north/northeast, located at 1216 Stevens Road, Eagle Point, Oregon, and is presently used as a primary residence and pasture for raising sheep. The surface soils of the developed portion of the property (access driveway and vehicle turnaround area, grass lawn, above ground swimming pool, and manufactured home) are covered with a dense lawn, crushed granite (on the driveway, around the house and two-bay garage and shop), and decorative mulched wood. The developed portion of the property has been treated to a fire proofing effort by the property owner; a buffer of non-burnable materials surrounds the home and garage/shop buildings.

The pastured portion of the property is an open oak savanna (<20% canopy) with heavy clay soils that are covered with non-native grasses and forbs which dominate the landscape. Soils are 5% - 10% visible. The pastured portion of the property is undeveloped except for fencing, and does not appear to have been disturbed by past construction activities, grading or plowing. The oaks exhibited evidence of pruning and thinning. The overstory vegetation within the boundaries of the subject property includes only two varieties of oak, black oak (*Quercus kelloggii*) and white oak (*Quercus garryana*). The understory vegetation includes turkey mullen (*Eremocarpus setigerus*), coast tarweed (*Madia elegans*), common teasel (*Dipsacus fullonum*), squirreltail barly (*Elymus elymoides*), tuber oatgrass (*Arrhenatherum elatius*), downey brome (*Bromus tectorum*), rush (*Juncus ensifolius*), cheat grass (*Bromus secalinus*), hairy vetch (*Vicia villosa*), yarrow (*Achille millefolium*), yellow salsify (*Tragopogan dubius*), and a variety of other non-native grasses and forbs.

**Wildlife Communities:**

Oak savannas, pastureland and non-native grasslands generally provide little cover for wildlife. The pastureland is managed by rotating the grazing sheep between several fenced areas. Mowing is also used on an occasional basis for fire control. Grasses and forbs are never more than 12 to 18 inches before they are removed by grazing or mowing. Upland game birds could fly over the fence, forage and roost in the oaks; however, without much cover their presence is limited. Common bird, reptile and mammal species observed during the spring 2010 surveys include American crow (*Corvus brachyrhynchos*), Stellar's jay (*Cyanocitta stelleri*), wild turkey (*Meleagris gallopavo*), turkey vulture (*Cathartes aura*), western meadowlark (*Sturnella neglecta*), jackrabbit (*Lepus californicus*), pocket gophers (*Thomomys bottae*) and the western fence lizard (*Sceloporus occidentalis*). Larger mammals such as elk, black bears and mountain lions are most likely excluded by the fence.

**Special Status Species:**

The following discussion describes the plant and animal species that have been afforded special recognition by federal, state, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Listed and special-status species are defined as one of the following:

- Listed or proposed for listing under the state or federal Endangered Species Acts.
- Protected under other regulations (e.g., Migratory Bird Treaty Act).
- Receive consideration during environmental review under NEPA.

Special-status species were considered for this analysis based on field survey results, a review of the United States Fish & Wildlife Service's list of the *Federally Listed, Proposed, Candidate Species and Species of Concern Under the Jurisdiction of the Fish and Wildlife Service Which May Occur Within Jackson County, Oregon,* and the *Rare, Threatened and Endangered Species of Oregon*, Oregon Natural Heritage Information Center, March 2007. Except for common wildlife species reference above, over twenty hours of onsite surveys did not reveal the presence of special status wildlife or plant species or their specific micro-habitat (critical habitat).

**Sensitive Habitats:**

Sensitive habitats include those that are of special concern to resource agencies and those that are protected under state or federal Endangered Species Acts (Critical Habitats). Biologist Marcus H. Bole, M.S., and botanist Charlene J. Bole, M.S., from Marcus H. Bole & Associates conducted over twenty hours of field survey of the Action Area during the spring of 2010. The project area was systematically surveyed to ensure total search coverage, with special attention given to identifying those portions of the study area with the potential for supporting special-status species and sensitive habitats.



**Determination of Waters of the United States**

The intent of this determination is to identify wetlands and "other waters of the United States" that are present within the Action Area that could fall under the regulatory jurisdiction of the U. S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act. The *1987 Corps of Engineers Wetlands Delineation Manual* identifies several methodologies and combinations of methodologies that can be utilized in making jurisdictional determinations. Marcus H. Bole & Associates has employed the Routine On-Site Determination methodology for this study. The Routine On-Site Determination method uses a three-parameter approach (vegetation, soils and hydrology) to identify and delineate the boundaries of jurisdictional wetlands. To be considered a wetland, all three positive wetland parameters must be present. These parameters include (1) a dominance of wetland vegetation, (2) a presence of hydric soils, and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. Further description of these parameters is provided below:

1) Vegetation. Wetland vegetation includes those plants that possess physiological traits that allow them to grow and persist in soils subject to inundation and anaerobic soil conditions. Plant species are classified according to their probability of being associated with wetlands. Obligate (OBL) wetland plant species almost always occur in wetlands (more than 99 percent of the time), facultative wetland (FACW) plant species occur in wetlands most of the time (67 to 99 percent), and facultative (FAC) plant species have about an equal chance (33 to 66 percent) of occurring in wetlands as in uplands. For this study, vegetation was considered to meet the vegetation criteria if more than 50% of the vegetative cover was FAC or wetter.

2) Hydric Soils. Hydric soils are saturated, flooded, or ponded in the upper stratum long enough during the growing season to develop anaerobic conditions and favor the growth of wetland plants. Hydric soils include gleyed soils (soils with gray colors), or usually display indicators such as low chroma values, redoximorphic features, iron, or manganese concretions, or a combination of these indicators. Low chroma values are generally defined as having a value of 2 or less using the Munsell Soil Notations (Munsell, 1994). For this study a soil was considered to meet the hydric soil criteria for color if it had a chroma value of one or a chroma of two with redoximorphic features, or if the soil exhibited iron or manganese concretions. Redoximorphic features (commonly referred to as mottles) are areas in the soils that have brighter (higher chroma) or grayer (lower chroma) colors than the soil matrix. Redoximorphic features are the result of the oxidation and reduction process that occurs under anaerobic conditions. Iron and manganese concretions form during the oxidation-reduction process, when iron and manganese in suspension are sometimes segregated as oxides into concretions or soft masses. These accumulations are usually black or dark brown. Concretions 2 mm in diameter occurring within 7.5 cm of the surface are evidence that the soil is saturated for long periods near the surface.

3) Hydrology. Wetlands by definition are seasonally inundated or saturated at or near the surface. In order for an area to have wetland hydrology, it has to be inundated or saturated for 5% of the growing season (approximately 12 days) (USDA, 1967). Indicators include

visual soil saturation, flooding, watermarks, drainage patterns, encrusted sediment and plant deposits, cryptogrammic lichens, and algal mats.

Wetland Biologist David H. Bole collected wetland delineation data in accordance with the 1987 Corps methodology. Representative data point sampling was conducted to evaluate the extent and type of potential jurisdictional wetlands and other "waters of the United States".

**Wetland Determination Results**

Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates found that the small man-made stock pond contained perennial and seasonal fresh water emergent vegetation. No other wetland features (vernal pools, seasonal swales, etc.) were revealed within the Action Area. The stock pond was artificially created in uplands and would be considered an isolated headwater not connect to or adjacent to waters of the United States. The stock pond would not normally be subject to federal jurisdiction.

## POTENTIAL PROJECT IMPACTS

The conversion of this property into cemetery land (columbarium, pre-placed crypts, roads and infrastructure) does not appear to have a significant biological or botanical impact. The following discussion addresses potential impacts to common and special-status plants and wildlife species.

**Special-Status Species:**

Special-status species were considered for this analysis based on field survey results and a review of the federal and state endangered species literature. Based on the specific habitat characteristics of subject property, no sensitive fish, reptile, amphibian or mammal species will be impacted by this project. Bird, invertebrate, and plant special status species that have the potential to be impacted by the project are listed in Table 1 below.

**TABLE 1**
**LISTED AND SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE ACTION AREA**

| Species | Federal (USFWS) | State (ODFW) | Habitat | Potential for Occurrence |
|---|---|---|---|---|
| ***Birds*** | | | | |
| Northern spotted owl (*Strix occidentalis caurina*) | T | LT | Prefer forests characterized by dense canopy closure of mature and old growth trees. | **None:** Onsite surveys did not reveal suitable habitat for this species. None observed during field surveys. This species may foraging onsite; however, there is no nesting habitat within or near the Action Area. |
| ***Invertebrates*** | | | | |
| Vernal pool fairy shrimp (*Branchinecta lynchi*) | T | - - | Vernal pools, seasonal wetlands. Known to Agate Desert, Jackson County. | **None:** Onsite surveys did not reveal the presence of vernal pools or other seasonal wetland capable of supporting this species. None observed onsite during surveys. |



| | | | | |
|---|---|---|---|---|
| ***Plants*** | | | | |
| Gentner's fritillary (*Fritillaria gentneri*) | E | LE | Grows in or on the edge of open woodlands at elevations from 180 to 1,360 meters. | **None:** Onsite surveys revealed marginal but suitable habitat for this species. Overgrazing by sheep and other human activities on site limit the potential for this species. None observed during onsite surveys in April – June time period. |
| Large-flowered woolly meadowfoam (*Limnanthes floccosa spp. grandiflora*) | E | LE | Occurs at the edge of vernal pools at elevations of 375 to 400 meters. Known to Agate Desert, Jackson County. | **None:** Onsite surveys did not reveal the presence of vernal pools or other seasonal wetland capable of supporting this species. None observed onsite during surveys. Overgrazing by sheep and other human activities on site limit the potential for this species. None observed during onsite surveys in April – June time period. |
| Cook's lomatium, (*Lomatium cookie*) | E | LE | Occurs in seasonally wet soils and vernal pools. Known to Agate Desert, Jackson County. | **None:** Onsite surveys did not reveal the presence of vernal pools or other seasonal wetland capable of supporting this species. None observed onsite during surveys. Overgrazing by sheep and other human activities on site limit the potential for this species. None observed during onsite surveys in April – June time period. |

Federal: **T** = Threatened **E** = Endangered **SOC** = Federal Species of Concern **Oregon Department of Fish and Wildlife (ODFW): LE** = Listed Endangered **LT** = Listed Threatened **CANDIDATE** = Candidate for listing **MBTA** = Federal Migratory Bird Treaty Act *Source:* Federal Listing for Jackson County, Oregon. Oregon Natural Heritage Rare Threaten and Endangered Species of Oregon, March 2007.

**NORTHERN SPOTTED OWL (*Strix occidentalis caurina)* – Threatened**

Owl nesting, roosting or foraging habitat (referred to as NRF) is identified as forest with older forest structure, multiple canopies, canopy closure of 60 percent or greater and having conifers at least 24 inches diameter. The oak savanna and grasslands within the subject Action Area do not provide suitable nesting habitat; however, roosting and foraging habitat is marginally present. Likewise, the Action Area provides only limited spotted owl dispersal habitat. Dispersal-only habitat provides some forage and roosting habitat and some protection from predators, but lacks the structure of suitable roosting/nesting habitat. Thomas and others (1990) describe dispersal habitat as stands averaging at least 11 inches diameter-at-breast-height (DBH) with a 40 percent canopy cover. Within the Action Area, canopy closure in small to medium diameter (10 -20 inch DBH) oaks is less than 20 percent. Primary constituent elements of spotted owl critical habitat are those physical and biological habitat features support nesting, roosting, foraging, and dispersal. The Action Area does not qualify as critical habitat for the northern spotted owl.

**VERNAL POOL FAIRY SHRIMP (*Branchinecta lynchi*) - Threatened**

The vernal pool fairy shrimp *(Branchinecta lynchi)* is a member of the aquatic crustacean order *Anostraca*, in the *Branchinectidae* family. The species are endemic to vernal pools, an ephemeral freshwater habitat. The fairy shrimp are ecologically dependent on seasonal fluctuations in their habitat, such as absence or presence of water during specific times of the year, duration of inundation, and other environmental factors that include specific salinity, conductivity, dissolved solids, and pH levels. They are sporadic in their distribution, often inhabiting only one or a few pools in otherwise more widespread vernal pool complexes. Although the species has been collected from large vernal pools it tends to occur

in smaller, frequently measuring less than 0.05 acres (less than 200 square meters) and shallower (mean of 5 cm) pools (Helm 1998). Genetic characteristics, as well as ecological conditions, indicate that populations are defined by pool complexes rather than by individual vernal pools. At the time they were listed, there were 32 known populations of the vernal pool fairy shrimp, all within California. They were subsequently discovered in vernal pools of the Agate Desert landform in southern Oregon.

The FWS listed the fairy shrimp as a threatened species primarily due to the present or threatened destruction, modification, or curtailment of their habitat or range. They determined that "the habitat of these animals is imperiled by a variety of human-caused activities, primarily urban development, water supply/flood control activities, and conversion of land to agricultural use. Habitat loss occurs from direct destruction and modification of pools due to filling, grading, discing, leveling, and other activities, as well as modification of surrounding uplands that alters vernal pool watersheds."

The FWS designated critical habitat for the fairy shrimp in August 2003. Vernal pools are seasonal wetlands that form only in regions where specialized soil and climatic conditions exist. During fall and winter rains typical of Mediterranean climates, water collects in shallow depressions in areas where downward percolation of water is prevented by the presence of an impervious hardpan or clay pan layer (duripan) below the soil surface (Keeley and Zedler 1998). Later in the spring when rains decrease and the weather warms, the water evaporates and the pools generally disappear by May. These shallow depressions then remain relatively dry until late fall and early winter with the advent of greater precipitation and cooler temperatures. Vernal pools thus provide unusual habitat conditions to which certain plants and animals have specifically adapted.

Fairy shrimp inhabit vernal pools with clear to tea-colored water, most commonly in grass- or mud-bottomed swales, or basalt flow depression pools in unplowed grasslands. This species has a sporadic distribution within vernal pool complexes, wherein the majority of pools in a given complex typically are not inhabited by the species. Eggs are dispersed by either hitching a ride on the legs or feet of wading birds, or on other animals passing through the pool, or by animals that ingest the eggs. Fairy shrimp typically are found at low population densities. Although they can mature quickly, allowing populations to persist in short-lived shallow pools, they also can persist later into the spring where pools are longer lasting.

When the pools refill in the same or subsequent seasons some, but not all, of the cysts may hatch. Branchiopods respond to inherent variability in climatic conditions by producing eggs with different diapause characteristics in each clutch. Some hatch after drying and getting wet again; while others may go through several wet/dry cycles before they hatch. The cyst bank in the soil may also be comprised of individuals from several years of breeding. The species typically produces only one clutch of eggs each year and then dies. Vernal pool fairy shrimp have been collected from early December to early May.

Within the Action Area, no signs of vernal swales, vernal pools or other seasonal wetlands were revealed that would support vernal pool fairy shrimp. Surveys were conducted during



the time of year when rainfall was present and ponding or pooling would have been readily evident.

**GENTNER'S FRITILLARY** (*Fritillaria gentneri*) **– Endangered**

Helen Gilkey described *Fritillaria gentneri* in 1951 (Gilkey, H., 1951). It is commonly referred to as "Gentner's fritillary" and is a member of the lily family. Its discovery is attributed to Katherine Gentner who noticed it in a vase of wildflowers on her family's kitchen table in 1941 in Jacksonville, Oregon.

Gentner's fritillary is a perennial herb arising from a fleshy bulb that has a wide axis and is flattened vertically in older specimens, with several large scales surrounded by numerous small rice-grained bulblets. Non-flowering plants vastly outnumber flowering plants in natural populations, and are recognizable only by their single ovate to lanceolate basal leaf that is indistinguishable from several other common related fritillaries. The species has dull to bright, red- to maroon-colored flowers mottled or streaked with yellow. The flowers are solitary, or in bracted racemes, 1 - 5 (rarely more) on long slender pedicels. The 25-40 mm bell-shaped perianth has segments that bend more or less outward, but are not strongly recurved; the nectary glands extend about ½ its length. The style is divided about ½ its length, with widely spreading branches. The whorled, lanceolate to linear leaves on the flowering stalks, are 70-150 mm in length.

In 1980, it was identified as a Candidate species for federal listing as a Category 2 species. The BLM and Oregon Natural Heritage have tracked this species since the early 1980's. The Oregon Natural Heritage program classifies this species as a G1 category species, which identifies it as a species that is threatened with extinction throughout its range. It is on the State of Oregon's State Endangered Plant list. It was listed as federally endangered on December 10, 1999 (Federal Register, 1999). Critical habitat was not designated. A Recovery Plan for Genter's fritillary was published by the FWS on July 21, 2003.

This rare lily is endemic to the Rogue River basin in Jackson and Josephine County, and in the upper drainages of the Klamath basin in the Cascade-Siskiyou National Monument, Jackson County, Oregon. It was recently documented about 2 miles south of the Monument, in Siskiyou Co., California on BLM lands.

Within the Rogue basin, populations have been documented as far west as Pickett Creek near Merlin, north of Sexton Mountain, around the city of Grants Pass, and north of Murphy. A large number of populations occur in the Middle and Little Applegate drainage, around Jacksonville, and in the Gold Hill and Sam's Valley area. It is also documented to the northeast in Big Butte Creek, and another pocket of occurrences is in the Colestine valley and south of Soda Mountain in the Cascade Siskiyou National Monument (Klamath subbasin). Most of the known occurrences on private lands occur in close proximity to the cities of Jacksonville and Grants Pass.

Gentner's fritillary is known from a wide variety of habitats and soil types across its range. The draft recovery plan (USDI Fish and Wildlife Service 2002b) identifies over 25 soil

types and about 16 different plant communities that this species can occupy. Because of the extreme variation in habitats, the attempt to develop habitat prediction models has not proved useful. This species prefers situations where it can receive at least partial light (Brock and Callagan 2002). It is rarely found under a dense conifer canopy, although a few "riparian" populations (riparian ecotones) have a high cover of mixed conifer and deciduous trees. It has been found growing on the edges of grasslands and chaparral, and in open mixed evergreen forest and woodland openings. It is most often found in forest ecotones or transitional areas, especially along ridgelines or aspect changes. It appears to have a moisture requirement in that it has not been found in fully exposed rocky, skeletal soil types (e.g. open grasslands), but prefers a level of soil moisture that is also capable of supporting trees and shrubs. At a coarse scale, this species can be found in:

- ecotones between forested sites and more open habitat (oak woodlands/grassland/chaparral)
- open-canopied woodlands and mixed evergreen forests (madrone and Douglas-fir)
- permanent openings in forest and woodlands
- riparian zone edges with canopy gaps and/or deciduous tree canopies.

No estimates of suitable habitat within its range have been done for this species.

It is often with or in close proximity to both scarlet fritillary (*Fritillaria recurva)*, and at times, checker lily (*F. affinis* [syn. *F. lanceolata*]). Gentner's fritillary can be easily confused with scarlet fritillary. Where they all occur together, checker lily tends toward the moister, and shady habitats, scarlet fritillary toward the drier, more exposed habitats, and Gentner's fritillary occurs fully within the amplitude of the other two species (Brock and Callagan 2002).

The elevations of known occurrences range from 600 feet (near the Rogue River) to over 4,500 feet near Soda Mountain, and it can occur on nearly all aspects if the right habitat conditions are present. It does not appear to be an early colonizer of recently disturbed habitat, nor successional" species found in "old growth," closed canopy forests. Its relationship with disturbance is not clear, although it exists in communities that had fairly frequent fire return intervals historically. Anecdotal evidence suggests that it is adapted to fire, especially later in the summer when it has gone dormant and exists as an underground bulb.

Most occurrences of this species contain few flowering plants. When Gentner's fritillary does not flower, it is indistinguishable in its vegetative state from the common scarlet fritillary that can grow with it. Plants with the potential to bloom may be grazed (mostly by deer) prior to monitoring, and can be impossible to locate or tell apart from non-flowering scarlet fritillary. Plants can remain dormant for several years and never come above ground (Federal Register, 1999). Gentner's fritillary bulbs can be shallow (an inch or two) or deeper (up to 8 inches), depending on the soil type and depth (Meinke 2000). Gentner's fritillary is most likely pollinated by hummingbirds (McFarlane 1980), and by andrinid and halictid bees (Donham 2002). Several researchers (Donham 2002, Amsberry and Meinke 2002, Kaye 2003) have documented hummingbirds visiting Gentner's fritillary. Foraging areas of



a hummingbird are reported to be about 2.5 miles, which is likely the breeding distance for Gentner's fritillary (A. Robinson 2000b).

Reproduction is mostly asexual. Small plants often arise from near the base of larger flowering plants, presumably from under ground "clonal" bulblets coming off the "mother" bulbs. Amsberrry and Meinke (2002) documented between 10 – 200 rice-grain bulblets attached to mature mother bulbs on 25 excavated plants.

The frequency of the number of plants that set fruit is very low and variable (Knight 1991); a high number of fruits that do develop abort, and even fewer numbers of fruits contain viable seed (Guerrant 1991). Both Gentner's fritillary and the common scarlet fritillary have low pollen germination rates, less than 20 percent (Amsberry and Meinke 2002). Recent reproductive studies have produced viable seed by successful hand pollination, and germination studies are in progress (Amsberry and Meinke 2002). Fruit set for *Gentneri* x *Gentneri* crosses on 132 plants was 2.3 percent (three plants). Gentner's fritillary is a long-lived species, it is likely that successful sexual reproduction is episodic and only occurs given certain climate conditions.

Vegetative leaves appear in late February and early March (Gamon 1984; Knight 1991). Blooms have been documented from early April through late May, and as late as June 15th, depending on precipitation, temperature, and herbivory. The blooms can persist into June, often wilting on the stems. The search window is generally April 1 (lower elevations) through June 15 (higher elevations) (Gamon 1984). Fruits are identifiable (if present) into early July, and can be differentiated from the common scarlet fritillary (Gilkey 1951).

Individual plants do not always come up every year, nor in the exact same spot, making the tracking of individual plants difficult. At two sites on federal lands, on-going demographic monitoring is tracking individual plant changes through time (Brock and Callagan 2002; Kaye 2002), and annual revisits and census counts have been done since 1999 at 42 BLM sites. Accurate counts of the true number of plants in a population are difficult to obtain. The draft recovery plan lists a mean ratio of seven vegetative plants for every flowering plant for all 42 BLM sites, although demographic plot data from the Jacksonville woodlands cites an average of 14 vegetative plants for every flowering plant (Brock and Callagan 2002). Individual plants have been documented as dormant for several years (Brock and Callagan 2002), but the length of time one can be dormant and start growing again is unknown. The relationship between the numbers of mature, blooming plants and the true population size (all dormant, vegetative, and blooming plants) is not known. In any given year, in a population of at least eight plants, it appears that at least one plant, on average, will bloom.

Of the 42 BLM sites monitored for four years, 20 of the 42 occurrences monitored from 1999 – 2002 have had at least one year that produced no flowering plants at all. This appears to be an indication of very small populations. On 42 BLM sites monitored for 4 years, the four-year average population size is 16 flowering plants, with a range from 0 to 306 plants. However, the median population size is one plant. The total counts at the 42 sites over 4 years have varied from 381 flowering plants in 1999 to 925 in 2002. True population sizes (distinct individuals) are not known for any Gentner's fritillary sites, but assuming a one to

seven ratio between flowering and vegetative plants, the estimated four-year average population is about 5,312 plants (all life stages) at the 42 monitored sites. There are 125 known occurrences for the plant on federal and non-federal lands. There are 77 sites (62 percent) on federal lands (75 BLM & 2 Forest Service), 16 sites (13 percent) on State, County, or City owned public lands, and 32 sites (25 percent) on private lands (USDI Fish and Wildlife Service 2002). About 2000 flowering plants are documented, and it is estimated that about 14,000 vegetative plants exist. Three populations on private lands are believed to be extirpated.

Gentner's fritillary and scarlet fritillary are browsed by deer and livestock. Data from monitored populations have shown deer grazed 57 percent of the flowering plants in a single year. Evidence of insect herbivory has also been documented (Brock and Callagan 2002). Grazing by cattle, donkeys, and horses has been documented on non-federal lands in a pasture setting.

Because of small population sizes, and widely scattered populations, the FWS believes that for some of the sub-populations of Gentner's fritillary, long-term viability is in question. As a result, the recovery plan calls for intensive augmentation of populations with nursery grown plants. Currently the existing trend for the species is downward.

Within the Action Area the open grasslands and oak savanna habitats do not appear to support the moisture requirements for this species. Overgrazing by the resident sheep herd is also a limiting factor in the establishment of this species. Onsite surveys within the blooming cycle for this species did not reveal its presence. It is highly unlikely that Genter's fritillary is associated with this fifteen acre property.

**LARGE-FLOWERED WOOLY MEADOWFOAM** (*Limnanthes floccosa* spp. *grandiflora*) – **Endangered**

Large flowered woolly meadowfoam (*Limnanthes floccosa* spp. *grandiflora*) is a delicate annual in the meadowfoam, or false mermaid, family (*Limnanthaceae*). The plant grows 5 to 15 centimeters (cm) (2 to 6 in) tall, with 5 cm (2 in) leaves divided into 5 to 9 segments. The stems and leaves are sparsely covered with short, fuzzy hairs. The flowers, and especially the calyx (outer whorl of floral parts), are densely covered with wooly hairs. Each of the 5 yellowish to white petals is relatively long compared to other meadowfoams, 6 to 13 mm (0.2 to 0.5 in.), and has 2 rows of hairs near its base.

This plant had been a candidate for listing since 1980 (45 FR 82480). In May of 2000 it was proposed for listing (Federal Register 65:30941-30951, May 15, 2000), and the comment period was re-opened in January of 2002. It was listed as federally endangered in November of 2002 (Federal Register 67:68004-68015, November 7, 2002) in the same listing package as Cook's lomatium. Critical habitat was not designated.

The current range of the species basically extends along the floor of the Rogue River from south of Shady cove, down river to Gold hill, along the historical floodplain of the Rogue River. Like Cook's lomatium in the Agate desert, it is associated with vernal pools in swale



and mound topography, except that large-flowered wooly meadowfoam grows on the wetter inner fringes of vernal pools and is not known from wet meadows. This species is now only known from the Agate desert, located on the valley floor of the Rogue River just north of Medford, Oregon in an area of rapidly expanding development. Populations have not been found on federal lands within its range, even though suitable habitat exists (most suitable habitat has been surveyed). One area with vernal pools on federal lands (the Table Rocks ACEC) has been extensively surveyed and does not have this species, even though it's within a few miles of existing occurrences. Mapped habitat for these species in the Agate Desert totals some (198 ac) for large-flowered wooly meadowfoam (ONHP Database 1998). However, due to recent alteration and destruction of vernal pools in the Agate Desert (ONHP Database 1998), habitat currently occupied by these plants is considerably less, an estimated 116 acres (ONHP Database 1998). No estimates of suitable habitat on federal lands in its range have been done.

In the Agate Desert, large-flowered wooly meadowfoam flowering and fruiting time occurs in early spring, from March to mid-April (Kendig 1998). In its habitat large-flowered wooly meadowfoam is sympatric or closely related with *L. floccosa* ssp. *floccosa*, however, sub-species "*floccosa*" grows on the slightly drier, outer fringes of the pools, whereas *L. f. grandiflora* grows on the relatively wetter, inner fringe of the pools (Kalin-Arroyo 1973). Only 10 occurrences of large-flowered woolly meadowfoam on non-federal lands in the Agate Desert are known. The numbers of plants are unknown, but probably are less than a 100,000 in this small area. Because of the existing threats to habitat, and the small amount of occupied habitat, the current trend for the species is downward.

Within the Action Area the open grasslands and oak savanna habitats do not support vernal pools, vernal swales or other seasonal wetland habitats that would support this species. Overgrazing by the resident sheep herd is also a limiting factor in the establishment of this species. Onsite surveys within the blooming cycle for this species did not reveal its presence. It is highly unlikely that large-flowered wooly meadowfoam is associated with this fifteen acre property.

**COOK'S LOMATIUM** (*Lomatium cookii*) – **Endangered**

A perennial forb in the carrot family (*Apiaceae*), Cook's lomatium grows 1.5 to 5 decimeters (dm) (6 to 20 in) tall, from a slender, twisted taproot. Leaves are smooth, finely dissected, and strictly basal (growing directly above the taproot on the ground, not along the stems). One to four groups of clustered, pale yellow flowers produce boat-shaped fruits 8 to 13 mm (0.3 to 0.5 in.) long with thickened margins. The taproot can often branch at ground level to produce multiple stems. The branching taproot distinguishes Cook's lomatium from Bradshaw's lomatium (*L. bradshawii*) that is indigenous to wet prairies from southern Willamette Valley, Oregon to southwest Washington, and foothill lomatium (*L. humile*) that is found in vernal pools in northern California (Kagan 1986). Recent genetic research has shown Cook's lomatium to be most closely related to Bradshaw's lomatium.

Cook's lomatium was listed as a candidate for listing in 1990 and the State of Oregon listed it as State Endangered in 1995. In May 2000, it was proposed for listing (Federal Register

65:30941-30951, May 15, 2000), and the comment period was re-opened in January of 2002. It was listed as federally endangered in November of 2002 (Federal Register 67:68004-68015, November 7, 2002). Critical habitat was not designated.

The distribution of the plant is disjunct; it was originally discovered in 1981 in the Agate Desert, Jackson County, Oregon, on the edge of vernal pools, and subsequently described by J. Kagan in 1986. At this site just north of the Medford airport, 13 occurrences exist within the historical flood plain of the Rogue River on non-federal land. Additional populations were found in 1988 about 40-air miles to the southwest in the Illinois River valley in seasonally wet grassy meadows. Twenty-five occurrences are now known in the areas of Reeves creek, Fry Gulch, Indian Hill, Rough and Ready Creek, Woodcock Creek, and in the French Flat Area of Critical Environmental Concern (ACEC) in the Illinois River valley, mostly on federal lands. No populations have ever been found between these populations along the Rogue River or in alluvial areas along the lower Applegate River. Most of the habitat between these populations are on non-federal lands, and which have been heavily modified by development. Little likelihood exists that undiscovered populations occur between the Agate Desert and the Illinois valley occurrences.

The habitats of the species are different between the Agate desert and Illinois valley sites. In the Agate desert, its habitat is along the margins and bottoms of vernal pools. These pools, within swale and mound topography, form during the winter rains in shallow clayey-gravelly soils over an impervious hardpan. The Illinois valley habitats are mostly alluvial silts and clays within serpentine soils. The soils consist of flood plain bench deposits that also have a clay hardpan 60 90 cm below the soil surface. This creates seasonally wet areas similar to vernal pools in the Agate desert, but lacks the swale and mound topography (*i.e.*, no pools). The Illinois valley sites are alluvial in nature within serpentine substrates and are within the serpentine valley bottom communities. The meadows are dominated by California oat-grass and occur within Oregon white oak – ponderosa pine/Jeffery pine savanna. An open shrub layer comprised of wedge-leaf ceanothus and white-leaf manzanita is interspersed with native and introduced grasses and herbs. No estimates of suitable habitat for Cook's lomatium have been done for the Illinois valley.

Flowering stems emerge from a rosette of leaves in late February, with flowers appearing in midmarch and blooming until mid-May. As with many Lomatium species, the earliest flowers are usually staminate, while the later umbels have both staminate and hermaphroditic flowers. Plants that produce only one umbel produce few, if any, seeds (Kaye and Kirkland, 1994). The pollinators of the plants are likely andrenid bees (Kaye 2002), and a small unidentified black moth has been documented visiting umbels (Kagan 1986).

Annual monitoring of three populations (Indian Hill, Rough and Ready and French flat ACEC) on BLM lands since 1994 has revealed large variations in population densities and reproduction, with numbers fluctuating year to year seemingly in response to undefined environmental changes. At these three sites (French Flat ACEC is the largest) the 2003 population numbers are: 198,293 plants at French flat, 1,148 plants at Rough and Ready, and 7,084 plants at Indian Hill (Kaye 2002). Most of the other populations in the valley are



small, with less than 50 plants. The total population in the Illinois valley is not known, but is estimated to be less than 250,000 plants on 150 acres of occupied habitat (USDI Bureau of Land Management 2002). Because of the small occupied acreage, scattered distribution, and threats to its habitat (development and off-highway vehicle impacts in occupied habitat) the trend for populations in the Illinois valley is downward.

Within the Action Area the open grasslands and oak savanna habitats do not support vernal pools, vernal swales or other seasonal wetland habitats that would support this species. Overgrazing by the resident sheep herd is also a limiting factor in the establishment of this species. Onsite surveys within the blooming cycle for this species did not reveal its presence. It is highly unlikely that Cook's lomatium is associated with this fifteen acre property.

**FINDINGS AND CONCLUSIONS**

**Findings:**

Known potential biological constraints for the project site include:

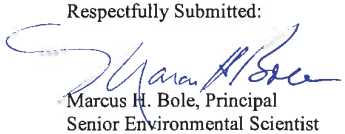
1) Impacts to the man-made stock pond should not require federal or state wetland impact permits; however, prior to impacting this man-made resource a wetland delineation should be conducted and proper notification made to the regulatory agencies. If a permit is deemed necessary, the impacts and mitigation would require coordination with the United States Army Corps of Engineers.

**Conclusions:**

In view of the negative findings during onsite biological and botanical surveys, the proposed conversion of the subject property from pastureland into cemetery gravesites is considered as having no adverse effect to listed plant or wildlife species or their critical habitat.

This concludes our biological evaluation and wetland determination of the fifteen acre Action Area located at 1216 Stevens Road, Eagle Point, Oregon. If you have any questions concerning our findings or recommendations please feel free to contact me directly at: Marcus H. Bole & Associates, Attn: Marcus Bole, 104 Brock Drive, Wheatland, CA 95692, phone 530-633-0117, fax 530-633-0119, email: mbole@aol.com.

Respectfully Submitted:



Marcus H. Bole, Principal
Senior Environmental Scientist
Senior Wildlife Biologist

## LITERATURE CITED OR REVIEWED


Amsberry, K, and R. J. Meinke. 2002. Reproductive ecology of *Fritillaria gentneri*. Unpublished report prepared for the US Fish and Wildlife Service and the Medford Bureau of Land Management, Medford, Oregon. 40 pp.

Brock, R., and R. Callagan. 2002. Siskiyou Biosurvey LLC. Site Review of *Fritillaria gentneri* on Bureau of Land Management lands. 2002 monitoring report. Internal Report. Medford District, Bureau of Land Management, Medford, Oregon.

Donham, K. 2002. Report on pollination of *Fritillaria gentneri*. Unpublished Bureau of Land Management report, Bureau of Land Management, Medford Oregon.

Eriksen, C.H., and D. Belk. 1999. Fairy shrimps of California's puddles, pools, and playas. Mad River Press. Eureka, Califonia.

Gilkey, H. 1951. Oregon State College, Corvallis Oregon. "A new Fritillaria for Oregon." Madrono. 11 (2):137-141.

Guerrant, E.O. 1991. An electrophoretic investigation into the status of *Fritillaria gentneri (Liliaceae)*: Is it a 'Good' Species or Not? Oregon State Department of Agriculture. Internal report. Medford District, Bureau of Land Management. Medford, Oregon.

Kagan, J. 1986. A new species of Lomatium (*Apiaceae*), from southwest Oregon. Madrono 33 (1): 71-75.

Kalin-Arroyo, M.T. 1973. A taximetric study of the infraspecific variation in autogamous *Limnanthes floccosa (Limnanthaceae)*. Brittonia 25: 177-191.

Kaye, T. 2002. *Lomatium cookii*, Population monitoring in the Illinois Valley, Josephine County, Oregon. Annual progress report prepared for the Medford Bureau of Land Management on long term monitoring. Bureau of Land Management, Medford, Oregon.

Kaye, T. and M. Kirkland. 1994. Population biology of *Lomatium bradshawii*. Unpublished report for the Eugene Bureau of Land Management and the Oregon Department of Agriculture, Eugene, Oregon.

Knight, L. 1991. Baseline monitoring of *Fritillaria gentneri*. Unpublished report prepared for the Medford District, Bureau of Land Management. Medford, Oregon.

McFarland, R. 1980. Department of Botany, California Academy of Science. Documented telephone conversation with Wayne Rolle, Botanist US Forest Service.
Medford, Bureau of Land Management. 2001. Location and population records in the Medford rare plant database. Bureau of Land Management, Medford, Oregon.

Meinke, R. 2001. Botanist, Oregon Department of Agriculture. Personal conversation with





Mark Mousseaux on pollination studies, bulb depth, and general information for *Fritillaria gentneri*.

ONHP. 1998. Oregon Natural Heritage Program, rare plant database. Large-flowered wooly meadowfoam site data. Portland, Oregon.

ONHP. 2002. Oregon Natural Heritage Program, rare plant database, *Arabis macdonaldiana* site data. Portland, Oregon.

Robinson, A. 2002. Botanist, US Fish and Wildlife Service, Portland Oregon. Personal conversation with Mark Mousseaux on foraging distance for hummingbirds as it relates to breeding population size for Gentner's fritillary. Bureau of Land Management, Medford, Oregon.

Thomas, J.W., E.D., Forsman, J.B. Lint, E.C. Meslow, B.R. Noon, and J. Verner. April 1990. A conservation strategy for the northern spotted owl: A report of the Interagency Scientific Committee to address the conservation of the northern spotted owl. USDA Forest Service, USDI Bureau of Land Management. Portland, Oregon. 427 pp.

USDI Bureau of Land Management. 2002. Western Oregon districts transportation management plan. Portland, Oregon.

USDI Bureau of Land Management, 2003. Rogue River/South Coast Biological Assessment, FY 04 – 08 for Activities that may affect listed species in the Rogue River/South Coast Province for Medford District Rogue River and Siskiyou National Forests, Biological Opinion (FWS) -14-03-F-511.

Final Rule. 50 CFR Part 17, Federal Register, Vol. 65, No. 16: 3875-3890. Jan. 25, 2000

USDI Fish and Wildlife Service. 2002b. Draft recovery plan for *Fritillaria gentneri*. Portland,
Oregon. 63 pp.


**LIST OF ENCLOSURES**

**ENCLOSURE A: SITE PHOTOS**

**ENCLOSURE B: SITE MAPS AND AERIAL PHOTOS**

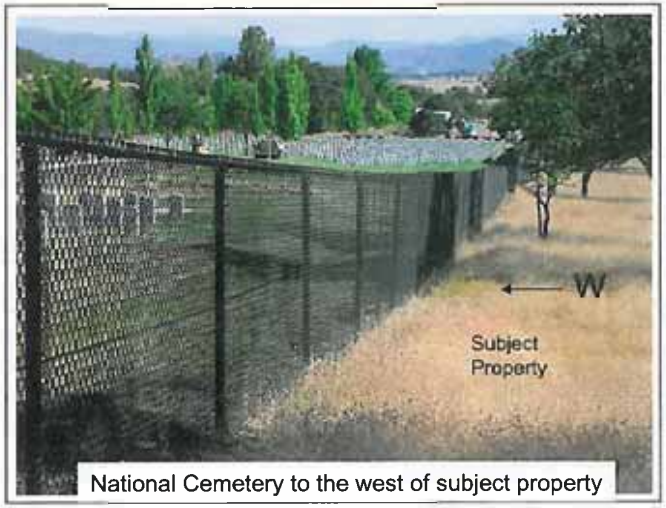
**ENCLOSURE C: UNITED STATES FISH & WILDLIFE SERVICE *FEDERAL AND THREATENED SPECIES LIST***

## ENCLOSURE A: SITE PHOTOS

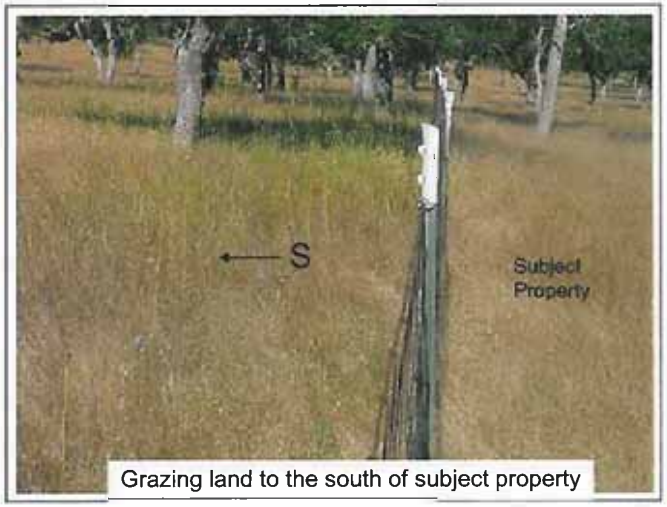


MARCUS H. BOLE & ASSOCIATES
104 Brock Drive, Wheatland, CA 95692
(530) 633-0117, email: mbole@aol.com

SITE: 1216 Stevens Road, Eagle Pt. OR.
ITEM: Heavily grazed pasture land
DATE: 6/15/2010 PLATE: 1

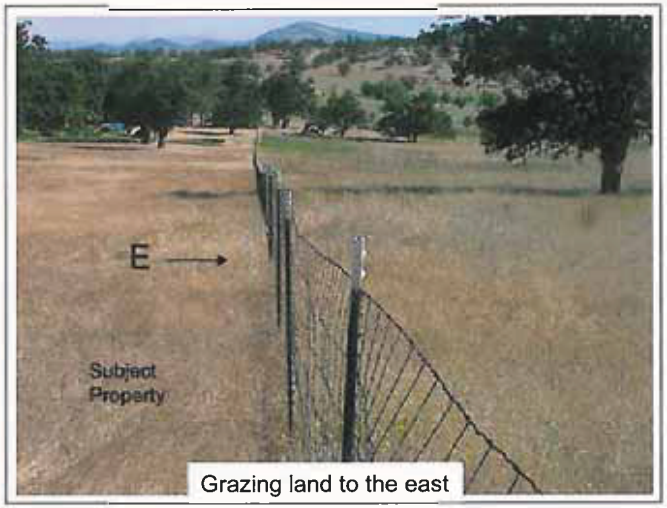



National Cemetery to the west of subject property

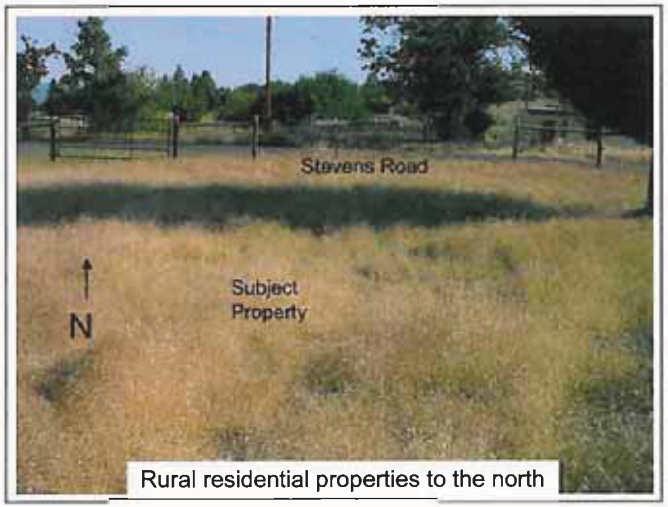



Grazing land to the south of subject property

| | |
|---|---|
| MARCUS H. BOLE & ASSOCIATES<br>104 Brock Drive, Wheatland, CA 95692<br>(530) 633-0117, email: mbole@aol.com | SITE: 1216 Stevens Road, Eagle Pt. OR.<br>ITEM: Adjacent Properties<br>DATE: 6/15/2010 PLATE: 2 |




Grazing land to the east




Rural residential properties to the north

| | |
|---|---|
| MARCUS H. BOLE & ASSOCIATES<br>104 Brock Drive, Wheatland, CA 95692<br>(530) 633-0117, email: mbole@aol.com | SITE: 1216 Stevens Road, Eagle Pt. OR.<br>ITEM: Adjacent Properties<br>DATE: 6/15/2010 PLATE: 3 |

## ENCLOSURE B: SITE MAPS AND AERIAL PHOTOS

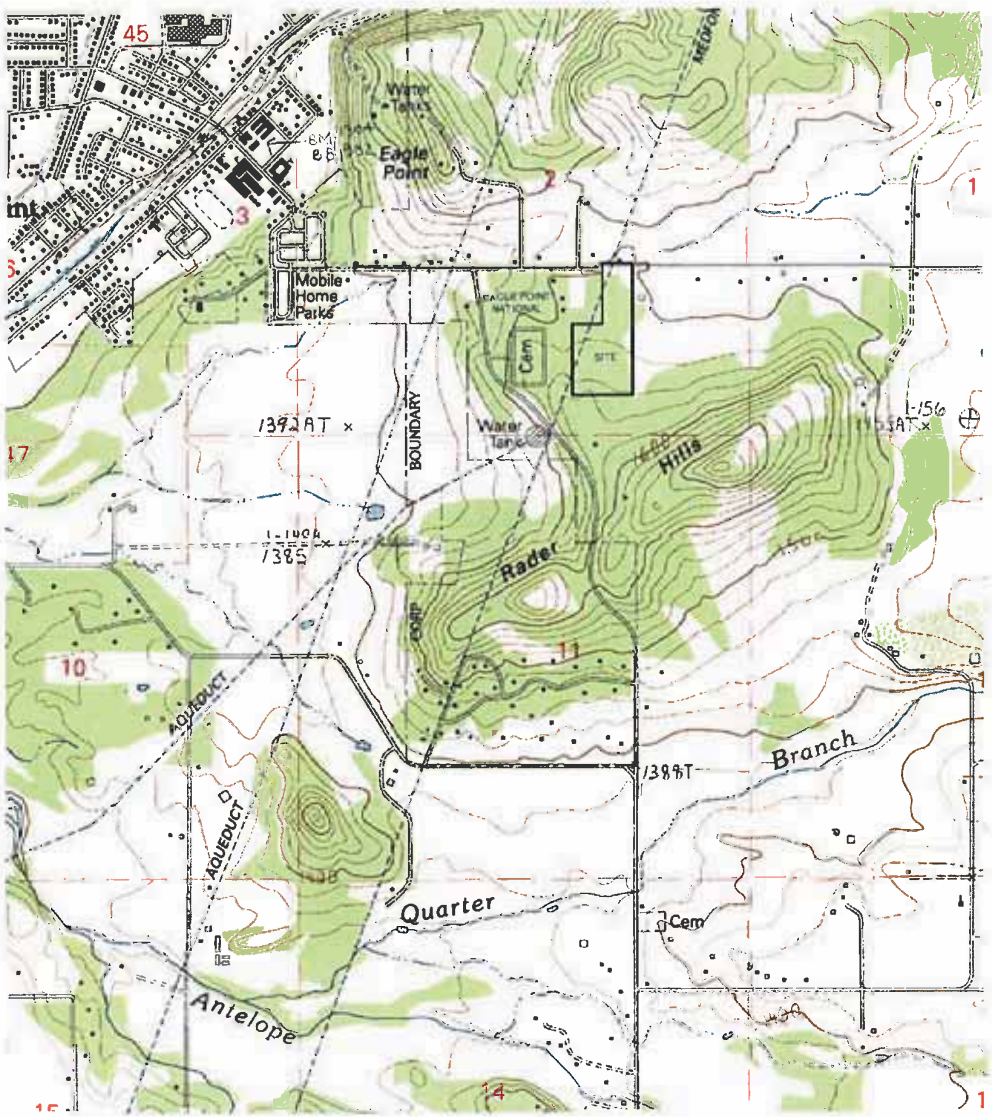



**Figure 1:** Vicinity Map. Project (Action Area) located at 1216 Stevens Road, Eagle Point, OR. Section 2, T. 36S, R. 1W, USGS Map Eagle Point Quadrangle. 042.464577° N / -122.7832788° W. Subject Property is a 15 acre parcel currently being used as a rural residence and sheep pasture. The parcel is directly east of, and adjoins, the Eagle Point National Cemetery. To the south and east of the subject parcel is open land (grazing), and to the north is rural residential properties.


**Figure 2:** Aerial Map. Project (Action Area) located at 1216 Stevens Road, Eagle Point, OR. Section 2, T. 36S, R. 1W, USGS Map Eagle Point Quadrangle. 042.464577° N / -122.7832788° W. Subject Property is a 15 acre parcel currently being used as a rural residence and sheep pasture. The parcel is directly east of, and adjoins, the Eagle Point National Cemetery. To the south and east of the subject parcel is open land (grazing), and to the north is rural residential properties.

## ENCLOSURE C: UNITED STATES FISH & WILDLIFE SERVICE *FEDERAL AND THREATENED SPECIES LIST*

**FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES AND SPECIES OF CONCERN UNDER THE JURISDICTION OF THE FISH AND WILDLIFE SERVICE WHICH MAY OCCUR WITHIN JACKSON COUNTY, OREGON**

## LISTED SPECIES

### Birds

| | | |
|---|---|---|
| Northern spotted owl | *Strix occidentalis caurina* | CH T |

### Invertebrates

***Crustaceans:***

| | | |
|---|---|---|
| Vernal pool fairy shrimp | *Branchinecta lynchi* | CH T |

### Plants

| | | |
|---|---|---|
| Gentner's fritillary | *Fritillaria gentneri* | E |
| Large-flowered woolly meadowfoam | *Limnanthes floccosa ssp. grandiflora* | CH E |
| Cook's lomatium | *Lomatium cookii* | CH E |
| Kincaid's lupine | *Lupinus sulphureus ssp. kincaidii* | CH T |

## PROPOSED SPECIES

### None

| | |
|---|---|
| No Proposed Endangered Species | PE |
| No Proposed Threatened Species | PT |

## CANDIDATE SPECIES

### Mammals

***Terrestrial:***

| | |
|---|---|
| Fisher | *Martes pennanti* |

### Invertebrates

***Insects:***

| | |
|---|---|
| Mardon skipper | *Polites mardon* |

### Plants

| | |
|---|---|
| Siskiyou mariposa lily | *Calochortus persistens* |

## SPECIES OF CONCERN

### Mammals

| | |
|---|---|
| Pallid bat | *Antrozous pallidus pacificus* |
| Red tree vole | *Arborimus longicaudus* |
| Townsend's western big-eared bat | *Corynorhinus townsendii townsendii* |
| California wolverine | *Gulo gulo luteus* |
| Silver-haired bat | *Lasionycteris noctivagans* |
| Long-eared myotis bat | *Myotis evotis* |
| Fringed myotis bat | *Myotis thysanodes* |
| Long-legged myotis bat | *Myotis volans* |



**FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES AND SPECIES OF CONCERN UNDER THE JURISDICTION OF THE FISH AND WILDLIFE SERVICE WHICH MAY OCCUR WITHIN JACKSON COUNTY, OREGON**

| | |
|---|---|
| Yuma myotis bat | *Myotis yumanensis* |

### Birds

| | |
|---|---|
| Northern goshawk | *Accipiter gentilis* |
| Tricolored blackbird | *Agelaius tricolor* |
| Western burrowing owl | *Athene cunicularia hypugaea* |
| Olive-sided flycatcher | *Contopus cooperi* |
| Yellow-breasted chat | *Icteria virens* |
| Acorn woodpecker | *Melanerpes formicivorus* |
| Lewis' woodpecker | *Melanerpes lewis* |
| Mountain quail | *Oreortyx pictus* |
| Band-tailed pigeon | *Patagioenas fasciata* |
| White-headed woodpecker | *Picoides albolarvatus* |
| Oregon vesper sparrow | *Pooecetes gramineus affinis* |
| Purple martin | *Progne subis* |

### Reptiles and Amphibians

| | |
|---|---|
| Northern Pacific pond turtle | *Actinemys marmorata marmorata* |
| Coastal tailed frog | *Ascaphus truei* |
| Common kingsnake | *Lampropeltis getula* |
| California mountain kingsnake | *Lampropeltis zonata* |
| Del Norte salamander | *Plethodon elongatus* |
| Siskiyou Mountains salamander | *Plethodon stormi* |
| Northern red-legged frog | *Rana aurora aurora* |
| Foothill yellow-legged frog | *Rana boylii* |
| Cascades frog | *Rana cascadae* |

### Fish

| | |
|---|---|
| Jenny Creek sucker | *Catostomus rimiculus ssp.* |
| Pacific lamprey | *Lampetra tridentata* |
| Coastal cutthroat trout | *Oncorhynchus clarki ssp* |

### Invertebrates

***Insects:***

| | |
|---|---|
| Denning's agapetus caddisfly | *Agapetus denningi* |
| Franklin's bumblebee | *Bombus franklini* |
| Siskiyou chloealtis grasshopper | *Chloaeltis aspasma* |
| Green Springs Mountain farulan caddisfly | *Farula davisi* |
| Sagehen Creek goeracean caddisfly | *Goeracea oregona* |
| Schuh's homoplectran caddisfly | *Homoplectra schuhi* |
| Siskiyou carabid beetle | *Nebria gebleri siskiyouensis* |

### Plants

| | |
|---|---|
| Rogue canyon rock cress | *Arabis modesta* |
| Crater Lake rock-cress | *Arabis suffrutescens var. horizontalis* |
| Greene's mariposa lily | *Calochortus greenei* |
| Broad-fruit mariposa lily | *Calochortus nitidus* |
| Umpqua mariposa-lily | *Calochortus umpquaensis* |
| Howell's camassia | *Camassia howellii* |
| Baker's cypress | *Cupressa bakeri* |
| Clustered lady's-slipper | *Cypripedium fasciculatum* |
| Siskiyou willow-herb | *Epilobium siskiyouense* |

| | |
|---|---|
| Wayside aster | *Eucephalus vialis* |
| Henderson's horkelia | *Horkelia hendersonii* |
| Bellinger's meadowfoam | *Limnanthes floccosa ssp. bellingerana* |
| Dwarf woolly meadowfoam | *Limnanthes floccosa ssp. pumila* |
| Mt. Ashland lupine | *Lupinus aridus ssp. ashlandensis* |
| White meconella | *Meconella oregana* |
| Detling's microseris | *Microseris laciniata ssp. detlingii* |
| Red-root yampah | *Perideridia erythrorhiza* |
| Coral seeded allocarya | *Plagiobothrys figuratus var. corallicarpus* |
| Howell's tauschia | *Tauschia howellii* |
| Small-flowered deathcamas | *Zigadenus fontanus* |

## DELISTED SPECIES

### Birds

| | |
|---|---|
| American Peregrine falcon | *Falco peregrinus anatum* |
| Bald eagle | *Haliaeetus leucocephalus* |

**Definitions:**

Listed Species: An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future.

Proposed Species: Taxa for which the Fish and Wildlife Service or National Marine Fisheries Service has published a proposal to list as endangered or threatened in the Federal Register.

Candidate Species: Taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

Species of Concern: Taxa whose conservation status is of concern to the U.S. Fish and Wildlife Service (many previously known as Category 2 candidates), but for which further information is still needed. Such species receive no legal protection and use of the term does not necessarily imply that a species will eventually be proposed for listing.

Delisted Species: A species that has been removed from the Federal list of endangered and threatened wildlife and plants.

**Key:**

| | |
|---|---|
| E | Endangered |
| T | Threatened |
| CH | Critical Habitat has been designated for this species |
| PE | Proposed Endangered |
| PT | Proposed Threatened |
| PCH | Critical Habitat has been proposed for this species |

**Notes:**



FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES
AND SPECIES OF CONCERN
UNDER THE JURISDICTION OF THE FISH AND WILDLIFE SERVICE
WHICH MAY OCCUR WITHIN JACKSON COUNTY, OREGON

**Marine & Anadromous Species:** Please consult the National Marine Fisheries Service (NMFS) (http://www.nmfs.noaa.gov/pr/species/) for marine and anadromous species. The National Marine Fisheries Service (NMFS) manages mostly marine and anadromous species, while the U.S. Fish and Wildlife Service manages the remainder of the listed species, mostly terrestrial and freshwater species.

**Marine Turtle Conservation and Management**: All six species of sea turtles occurring in the U.S. are protected under the Endangered Species Act of 1973. In 1977, NOAA Fisheries and the U.S. Fish and Wildlife Service signed a Memorandum of Understanding to jointly administer the Endangered Species Act with respect to marine turtles. NOAA Fisheries has the lead responsibility for the conservation and recovery of sea turtles in the marine environment and the U.S. Fish and Wildlife Service has the lead for the conservation and recovery of sea turtles on nesting beaches. For more information, see the NOAA Fisheries webpage on sea turtles http://www.nmfs.noaa.gov/pr/species/turtles/.

**Gray Wolf**: On February 27, 2008, the Service published a final rule that established a distinct population segment and delisted the gray wolf (*Canis lupus*) in the northern Rocky Mountains (which includes a portion of Eastern Oregon, east of the centerline of Highway 395 and Highway 78 north of Burns Junction and that portion of Oregon east of the centerline of Highway 95 south of Burns Junction). Any wolves found west of this line in Oregon are still listed as endangered [see 73 FR 10514]. Gray wolves in Oregon are still State-listed as endangered, regardless of location