United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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EA Number: CA-180-15-27

Proposed Action: Prescribed grazing of sheep to control yellow starthistle and medusahead at Cronan Ranch and Magnolia Ranch.

Location: BLM-administered land within portions of T 11 N, R 9 E, Sections 8-11, 16, 17, 21, El Dorado County.

1.0 **Purpose and Need for the Action**

1.1 **Background**

Invasive plants are defined as "non-native plants whose introduction does or is likely to cause economic or environmental harm or harm to human health," based on the definition provided in Executive Order 131121[1]. Invasive plants are compromising the ability to manage BLM lands for a healthy native ecosystem. Invasive plants can create a host of environmental and other effects, most of which are harmful to native ecosystem processes, including: displacement of native plants; reduction in functionality of habitat and forage for wildlife and livestock; increased potential for soil erosion and reduced water quality; alteration of physical and biological properties of soil; loss of long-term riparian area function; loss of habitat for culturally significant plants; high economic cost of controlling invasive plants; and increased cost of keeping systems and recreational sites free of invasive species.

The method for invasive species control that will be analyzed in this EA is grazing by sheep. The use of domestic livestock to control weeds requires "prescribed grazing" in which the kind of animals, and the amount and duration of grazing are designed to control a particular species while minimizing impacts to perennial native vegetation. In order for prescribed grazing to be effective, the right combination of animals, stocking rates, timing, and rest must be used. Grazing should occur when the target plant is palatable and viable seeds can be reduced.

1.2 **Need for Action**

This EA has been prepared to analyze and disclose the environmental consequences of implementing prescribed sheep grazing for weed control on BLM lands within the 1,342-acre

[1] EXECUTIVE ORDER 1311 INVASIVE SPECIES (1999) - directs federal agencies to prevent the introduction of invasive species and provide for their control, and to minimize the economic, ecological, and human health impacts that invasive species cause.

Cronan Ranch and 735-acre Magnolia Ranch BLM properties. The proposed action is needed to reduce the adverse impacts associated with a large infestation of noxious weeds in the project area – specifically, yellow starthistle (*Centaurea solstitialis*) and medusahead (*Taeniatherum caput-medusae*). Historic and current land use practices have created extensive infestations of these species throughout the project area.

The project area falls within the South Fork American River Special Recreation Management Area (SRMA). This SRMA receives a high amount of recreation due to the presence of the South Fork of the American River and a large trail network which encourage numerous recreational opportunities such as horseback riding, mountain biking, hiking, camping, fishing, kayaking and rafting. Vehicles, bicycles, horses, pets and recreationists have contributed to the spread of weeds throughout the project area.

Weed infestations have altered the appearance of Cronan Ranch and Magnolia Ranch and affects the use of trails and other areas. Because of its spiny nature, yellow starthistle deters the use of lands for recreation. Both medusahead and yellow starthistle form monocultures which crowd out native plants. Starthistle is also known to significantly alter water cycles and deplete soil moisture reserves in annual grasslands and foothill woodland ecosystems. Because these infestations use deep soil moisture reserves earlier than associated natives such as blue oak or purple needlegrass, native species can experience drought conditions even in years with normal rainfall (Benefield *et al*. 1998, Gerlach *et al*. 1998). The increasing expansion of invasive plants in the project area has led to a loss of habitat function and reduced the quality and quantity of forage for wildlife, impaired visual aesthetics, altered soil productivity, and increased the potential for soil erosion and adverse impacts on water quality.

Various forms of control for yellow starthistle have been implemented in the project area. In the spring of 2013 and 2014, herbicide application was used along trails and parking lot perimeters to create a buffer for recreationists from yellow starthistle. Herbicides have been very successful in treating starthistle but are labor intensive and expensive to apply to large areas of land. Mowing and/or weed whacking has been used along trails following herbicide application to keep vegetation that was not affectively treated with herbicides out of the trail corridor. Mowing/weed whacking is also used in place of herbicides in places that are inaccessible to herbicide application. These methods are also labor intensive across large tracts of weed-infested land.

Control of yellow starthistle with goat grazing was attempted years ago but this method was unsuccessful at significantly reducing weed densities. Goats primarily graze woody species and were not present throughout the season to control the yellow starthistle that grew back. Control of medusahead has not been attempted previously. Another EA (CA-180-12-13) analyzed potential methods of weed control at Cronan, including herbicides and prescribed fire. Prescribed fire has yet to be implemented because the timing of the treatment coincides with the season of highest fire danger. Use of fire is also limited because of the topography of the project area. Steep slopes and narrow ridges make prescribed fire difficult to use in some of the area. Because medusahead and yellow starthistle cover such a large section of the project area, prescribed grazing would be a more economical weed control method which would allow the BLM to treat a larger area with less labor and expense.

1.3 **Public Participation, Scoping and Issues**

Fred Hunt, Soil Technician for El Dorado County & Georgetown Divide Resource Conservation Districts, brought the idea of prescribed sheep grazing at Cronan to the BLM. He was working with a rancher and wanted us to consider using prescribed sheep grazing for weed control.

This EA will be made available for public review on BLM's NEPA webpage. The review period is 15 days. Additionally, local Native American tribes will be contacted to determine whether they have an interest in the proposed action.

1.4 **Conformance with Applicable Land Use Plans**

The Proposed Action is consistent with the Sierra Resource Management Plan Record of Decision (ROD), approved in February 2008. In Section 2.4 of the ROD for Vegetative Communities, it lists the following objectives: manage vegetation (including invasive species removal) to improve habitat conditions for particular wildlife species; and control invasive species and increase native plant species using early detection, rapid response, and prevention measures. Section 2.4 also lists the following management actions:

> Prevent, eliminate, and/or control undesired non-native vegetation or other invasive species using an Integrated Pest Management approach that combines biological, cultural, physical, and chemical tools to minimize economic, health, and environmental risks.
>
> Use prescribed fire, mechanical mastication, herbicides, manual removal, seeding, propagation, and planting or combinations of these methods to promote healthy, diverse vegetation communities.
>
> Implement and meet national BLM policies consistent with the Partners Against Weeds Initiative (DOI 1998) and Executive Order 13112.

The Proposed Action is also consistent with The South Fork American River Draft Management Plan (March 2003) which contains the following management guideline for noxious weed control:

> Each parcel along the South Fork American River shall have a Noxious Weed Control plan to expedite the BLM policy to eradicate populations of noxious weeds.

The Proposed Action is in conformance with The Cronan Ranch Management Plan (February 2007) which lists specific management actions for noxious weeds:

> All known populations of noxious weeds will be treated for eradication or reduced rates of spread. All methods of weed treatment may be considered including manual, mechanical, biological, and chemical methods.

1.5 **Tiering to the Bureau-wide Programmatic Vegetation EIS**

This EA tiers to the *Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS) (BLM 2007a), which analyzed the impacts of using herbicides (chemical control methods) to treat invasive plants on public lands. In addition, this EA incorporates by reference the *Vegetation Treatments on BLM Lands in 17 Western States Programmatic Environmental Report* (PER) (BLM 2007b), which evaluated the general effects of non-herbicide treatments (i.e., biological, physical, cultural, and prescribed fire) on public lands. The PEIS identifies impacts to the natural and human environment associated with herbicide use and appropriate best management practices (BMPs), standard operating procedures (SOPs), mitigation measures, and conservation measures for avoiding or minimizing adverse impacts. The PER describes the environmental impacts of using non-chemical vegetation treatments on public lands.

The PEIS identifies priorities including protecting intact ecosystems; maintaining conditions that have led to healthy lands; and applying mitigation measures to minimize soil and vegetation disturbance and avoid introductions of invasive species. Vegetation treatment priorities identified in the PEIS (pg. 2-7) include:

- Use effective nonchemical methods of vegetation control where feasible.
- Use herbicides only after considering the effectiveness of all potential methods.

Several management objectives in the PEIS (pg. 2-7) are considered when determining appropriate treatment of an infestation:

- Containment to prevent weed spread from moving beyond the current infestation perimeter;
- Control to reduce the extent and density of a target weed;
- Eradication to completely eliminate the weed species including reproductive propagules (this is usually only possible with small infestations).

1.6 **Relationship to Statutes, Regulations, and Plans**

The Mother Lode Field Office has prepared this IWM strategy in compliance with Department of Interior (DOI) and BLM policy and manual direction, including **DOI Manual 517 (*Integrated Pest Management*)** and **BLM Manual Section 9015 (*Integrated Weed Management*)**.

Several Federal laws, regulations, and policies guide BLM management activities on public lands. The ***Federal Land Policy and Management Act of 1976* (FLPMA)** directs the BLM to manage public lands "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources, and archeological values." The ***Carlson-Foley Act of 1968*** and the ***Plant Protection Act of 2000*** authorize and direct the BLM to manage noxious weeds and to coordinate with other Federal and state agencies in activities to eradicate, suppress, control, prevent, or retard the spread of any noxious weeds on Federal lands.

The ***Federal Noxious Weed Act of 1974*** established and funded an undesirable plant management program, implemented cooperative agreements with state agencies, and established integrated management systems to control undesirable plant species. The ***Noxious Weed Control Act of 2004*** established a program to provide assistance through states to eligible weed

management entities to control or eradicate harmful and non-native weeds on public and private lands. **Executive Order 13112*, Invasive Species***, directs Federal agencies to prevent the introduction of invasive species and provide for their control, and to minimize the economic, ecological, and human health impacts that invasive species cause (BLM 2007a).

The BLM has also produced national-level strategies for invasive species prevention and management. These include ***Partners Against Weeds*** (BLM 1996), which outlines the actions BLM will take to develop and implement a comprehensive integrated weed management program; and ***Pulling Together: National Strategy for Invasive Plant Management*** (BLM 1998), which illustrates the goals and objectives of a National invasive plant management plan (prevention, control, and eradication). The Federal Interagency Committee for the Management of Noxious and Exotic Weeds is leading a national effort to develop and implement a ***National Early Detection and Rapid Response System for Invasive Plants in the United States*** (FICMNEW 2003). The primary long-term goals of the proposed system are to detect, report, and identify suspected new species of invasive plants in the United States.

The EPA regulates pesticides (including herbicides) under the ***Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1972*** as amended in 1988. This Act establishes procedures for the registration, classification, and regulation of all pesticides. Before any herbicide may be sold legally, it must be registered by the EPA. The EPA may classify a pesticide for general use if it determines that it is not likely to cause unreasonable adverse effects to applicators or the environment. A pesticide that is classified for restricted use must be applied by a certified applicator and in accordance with other restrictions.

2.0 Proposed Action and Alternatives

2.1 Proposed Action

The Proposed Action is to implement prescribed sheep grazing for weed control at Cronan Ranch and Magnolia Ranch. Properly managed livestock grazing can help to remove litter, recycle nutrients, stimulate tillering of perennial grasses, and reduce seedbanks of invasive plants (DiTomaso and Smith 2012). Grazing would ideally involve anywhere from 300 to 500 sheep and could occur during the months of March through September depending on the rainfall and subsequent vegetative growth for that year. Sheep would be removed at an optimal RDM (Residual Dry Matter) level, before overgrazing occurs. The timing, duration and stocking rates are subject to change based on observed responses of the habitat to the grazing regimes. Grazing would take place in the open grasslands and blue oak savannah where large infestations of weeds occur. Forested areas would not be grazed.

A shepherd and sheep dogs would be on site to manage the flock, directing them to different grazing areas and maintaining the flock within that area before moving to the next area. This would help ensure uniform grazing throughout the project area and ensure that the prescribed grazing is adhered to. Without herding, sheep may congregate in one area and ignore another area. This could lead to overgrazing in one area and not enough grazing in another.

The amount of time the sheep will stay in any particular area will depend on the amount of meduahead/yellow starthistle. Some areas may require only a few hours' worth of grazing while

others may require several days' worth. Effectively grazing several days' worth of herbaceous vegetation may require the use of temporary electric fencing. The herder would install temporary poly-wire electric fencing that would contain the sheep in one area for an extended time. The electric fencing also could be used to keep sheep out of certain areas as directed. The fencing provides a very mild shock that does not harm animals or people.

The shepherd would live on-site in a self-contained mobile housing unit. The unit would be placed just off the trail near areas where the sheep were grazing. The State of California Employment Development Department would inspect the mobile housing unit every six months to ensure its safety and habitability. A BLM representative would be on site at least once a week, likely more, to monitor the grazing situation. The rancher would be onsite once a week or every other week to provide provisions to the shepherd and discuss the grazing strategy for the upcoming week.

The herder would be responsible for hauling water to the sheep in a company water truck. The water would be drawn from either a spring located at Cronan Ranch or the river depending on the location of the sheep. A hose would be temporarily installed at the spring and would transport water down the hill to the main Cronan road to make it easier for the water truck to fill up with water. The hose would be hidden in vegetation as much as possible.

When medusahead is grazed at the proper timing, livestock can dramatically reduce seed production by foraging on the top portion of the plant, eventually reducing the medusahead seedbank (DiTomaso and Smith 2012). Studies have shown that the optimal timing is in late spring after medusahead stems begin to elongate and before the seed milk stage (DiTomaso et al. 2008). The proper intensity of grazing treatments is also critical to successful control of medusahead. The most effective results occur when grazing is high intensity and short duration (DiTomaso and Smith 2012). High density, short duration, mid-spring grazing in late April to early May provided excellent control of medusahead on California grassland in the Central Valley (DiTomaso et al. 2008). Medusahead must be prevented from producing new seed for two to three years in order to deplete the soil seedbank.

Grazing is also effective in reducing yellow starthistle seed production. Sheep, goats, or cattle eat yellow starthistle before spines form on the plant. Intensive grazing in late May and June using large numbers of animals for short duration can reduce plant height, canopy size, and seed production (DiTomaso 2007). Overgrazing would be avoided because grazing more than half the grass forage would reduce the grasses' recovery rate and ability to shade out yellow starthistle. Two or three treatments per year may be needed when grazed in the rosette or bolting stage.

The management objective for the Proposed Action would be to increase native plant species diversity while also reducing the extent and density of invasive weed populations. Because management of invasive weeds is not a one-time thing, follow-up treatments in successive years are also covered under this EA. Three or more years of intensive grazing management may be necessary to significantly reduce the medusahead and yellow starthistle populations (DiTomaso 2006). This EA would be effective for up to ten years of prescribed grazing if that amount of time is needed to reduce populations of invasive weeds.

Grazing success would be measured using photopoints as well as through installation of five to ten grazing exclosures. The exclosures would prevent grazing inside of them and would allow the BLM to compare changes in grazed vegetation with ungrazed vegetation over time. Percent cover of weeds and native species would be recorded before grazing begins and would be recorded annually during the first three years following grazing implementation to determine effectiveness. After the first three years, monitoring would occur every other year if grazing is still occurring. Adaptive management would be used to adjust timing, herd rates and other variables to provide for the most effective treatments.

2.2 Project Design Features

- Blue elderberry shrubs (*Sambucus nigra* ssp. *cerulea*), which provide habitat for the Federally threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), are present in the project area. A measure of protection would be to train the rancher, herder(s) and BLM staff to recognize blue elderberry, so that elderberry shrubs can be avoided by actions such as herding of sheep away from the elderberry shrubs.

- Pre-treatment surveys were conducted prior to the previous EA (CA-180-12-13) within each treatment unit, and each blue elderberry shrub, or group of shrubs, with one or more stems measuring one inch in diameter or greater at ground level within the treatment area will be flagged prior to implementation of the proposed action. A pre-treatment survey involved a careful count of all stems greater than one inch in diameter at ground level. The stem count followed the guidelines in Table 1, Page 12 of U.S. Fish and Wildlife Service 1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999). Specifically, stems were categorized as 1-3 inches, 3-5 inches and greater than 5 inches, in riparian or non-riparian habitat, and whether they had beetle exit holes or not.

- All woody species, including shrubs and trees will be avoided to the extent possible. The rancher and herder(s) will be directed to avoid grazing of woody species. There are young oak and other native shrubs and trees in the project area that are integral to the ecosystem.

- Riparian areas such as Hastings Creek, Greenwood Creek and the South Fork of the American River would be avoided by sheep, using electric fencing as necessary to decrease the risk of erosion and sedimentation into the waterways.

- Sensitive cultural resources identified by the BLM archaeologist will be avoided. Sheep will not be watered on the identified sites. Sheep will not be discouraged from bedding on the identified sites. The rancher and herder(s) will not place the mobile housing unit on the identified sites, or drive the water truck or any other vehicles on the identified sites.

2.3 No Action

Under the No Action Alternative, the BLM would continue its current approach to weed management in the project area as approved by EA #CA-180-12-13. Weed treatments would

include Integrated Pest Management (IPM) techniques such as herbicide application, mowing and use of hand-held brush cutters along trails and parking areas, prescribed fire, and manual treatments for small weed infestations. Because of the person-power required for mowing and physical control methods, the expense of treating large areas with herbicides, and the limited use of prescribed fire, the total area treated annually for invasive weeds under this alternative would be economically and topographically limited and much fewer acres would be treated per year than under the Proposed Action.

2.4 Alternatives Considered but Eliminated from Detailed Analysis

Other alternatives for weed control at Cronan Ranch were analyzed previously in EA #CA-180-12-13. There are no new alternatives to analyze.

3.0 Affected Environment

Cultural Resources

Cultural resources are an important factor to consider in analyzing the potential impacts of the proposed action and other alternatives. A cultural resource study, completed in 2001 by BLM archaeologists, identified numerous prehistoric- and historic-era cultural resources within the South Fork American Planning Area, including the Greenwood Creek parcel. As part of this study, the results of previous field inventories within the Planning Area were reviewed and additional reconnaissance level inventories were conducted by BLM archaeologists. An inventory was conducted for portions of the Cronan Ranch parcel in 2004 by BLM archaeologists. This inventory was prompted because this parcel was a new acquisition. Prehistoric and historic-era cultural resources were identified. Since the early 2000s, other cultural resource studies have been conducted by BLM archaeologists within the Cronan Ranch and Greenwood Creek parcels for various projects (related to recreation, planning, etc.). These studies have virtually all been conducted to help BLM comply with Section 106 of the National Historic Preservation Act. They have involved field inventories and Native American consultations and have led to the identification of additional cultural resources. To date, no traditional cultural places have been identified. At this time, the project area has been extensively inventoried, though it has not been entirely inventoried at the intensive level and additional inventory may be productive.

Hydrology

The South Fork American River is a major waterway in El Dorado County, flowing from the crest of the Sierra Nevada Mountains down the western slope where it joins the North Fork of the American River in Folsom Lake. The lower American River then travels down to the Sacramento Valley and into the Sacramento River and eventually flows into the San Francisco Bay. Rainfall within the project area differs greatly. At Folsom Dam, average rainfall ranges from 32.5 inches per year, while at Placerville, only 14 miles away, average rainfall ranges around 53.6 inches per year.

The importance of water quality is evident in the American River Watershed. El Dorado County relies on the water for agricultural and municipal purposes as does the metropolitan area of Sacramento. The South Fork American River is the most popular river for commercial white water rafting in the Western United Sates. Annually, between 100 to 140 thousand visitors float the river on either privately-owned boats, or through the services of commercial outfitters. The main water source in the project area is the South Fork American which has been greatly altered since the 1850's, and has not had a natural unimpaired flow since before the Gold Rush. Water impoundments managed by PG&E, SMUD, and EID all effect the natural flow of the river. Water quality in the project area appears to be influenced by a wide variety of factors relating to man's influence on the environment. A major source of water quality degradation is related to the coliform (fecal) group of bacteria. This may come from animal waste, defective septic tank leach fields, and other undocumented sources. The primary sources of contamination appear to be located upstream of the planning area, according to the County River Management Plan.

Invasive Species

Of the vegetation communities within the project area, some are more likely than others to contain infestations of noxious weeds and other invasive plants. Blue oak savannah and open grasslands have been have been seriously degraded by widespread infestations of yellow starthistle and medusahead and other invasive annual weeds.

Medusahead

Medusahead is a nonnative, cool-season annual grass. Plants produce tillers, but very few leaves. Medusahead has a distinctive flowerhead with two types of awns: both are flat, but the longer of the two contains barbs that point upward. Medusahead-dominated stands usually have more than 100 plants/ft^2 and the seedbank is short-lived. Plants produce up to 6,000 seeds/ft^2 of soil, propagating dense stands in succeeding years. Animals, wind, and water disperse the seed, and spread is rapid. A long, rough awn aids in animal dispersal of seed. Seeds may germinate in fall, winter, or spring; fall germination is most common. Seedlings from all seasons produce seeds by early summer. The introduction and subsequent rapid spread of medusahead has caused serious management concern because of its rapid migration, vigorous competitive nature, and low forage value. Medusahead invasion has shifted the balance from a shrub/perennial grass ecosystem to an annual grass-dominated ecosystem (CDFA 2012).

Yellow Starthistle

Yellow starthistle is a long-lived winter annual with a deep, vigorous taproot, and bright, thistle-like yellow flowers with sharp spines surrounding the base. Seed output can be as high as 30,000 seeds per square meter, with about 95% of the seed being viable soon after dispersal. Most seeds germinate within a year of dispersal, but some can remain viable in the soil for more than three years. Yellow starthistle seeds germinate from fall through spring. After germinating, the plant initially allocates most of its resources to root growth. By late spring, roots can extend over 3 feet into the soil profile, although the portion above ground is a relatively small basal rosette. This allows yellow starthistle to out-compete shallow-rooted annual species during the drier summer months when moisture availability is limited near the soil surface. It also helps explain why yellow starthistle survives well into the summer, long after other annual species have dried up, and why it can re-grow after top removal from mowing or grazing (CDFA 2012).

Soils

Most of the parent materials for the residual soils on the parcels along the South Fork American River are either common granitic or metasedimentary or metavolcanic rock types, common in the Sierra Nevada foothills. In the canyon bottoms and riparian areas especially, are sediments of mixed origin.

Recreation

The project area falls within the South Fork American River SRMA. SRMAs are identified to address areas where recreation is the management focus. The South Fork American River SRMA receives a high amount of recreation due to the presence of the South Fork American River and a large trail network which encourage numerous recreational opportunities such as horseback riding, mountain biking, hiking, camping, fishing, kayaking, rafting, and gold panning. Prospecting – the recreational search for gold – has a special significance along the South Fork American because of the river's role in the California Gold Rush. Much of this activity takes place in the river itself, but several tributaries were also historically good sources of placer gold.

In more recent times, the South Fork American River has become one of the most heavily used rivers in America for white water rafting and kayaking. About 30 years ago, commercial white water rafting began to increase in popularity along the South Fork. It continued to increase until the mid-1990's when it peaked, and then dropped off slightly. The South Fork offers outstanding opportunities for white water recreation because of its proximity to major population centers, and year-round flows. It has become one of the nation's most popular rivers for a number of reasons, including short shuttles between access points, several trip options, high spring flows, and dependable boating flows during the summer months when other rivers have dropped too low.

Vegetation

The plant communities in the vicinity of the South Fork American River have been classified as part of the Foothill Pine Belt, which encompasses a wide variety of plant habitats (i.e., montane hardwood-conifer, blue oak-foothill pine, mixed chaparral, riverine, and valley foothill riparian). Dominant habitats in the project area include open grassland, oak savannah, and mixed conifer forest on the north-facing slopes. The area's natural vegetation has been greatly altered since the time of the Gold Rush. Presently, a large portion of the open grassland and blue oak woodlands have been degraded by invasive plant communities.

The vegetation in the project area can be divided into four main regions and plant communities. On the uplands there are forest stands on the north and northeast facing slopes of both Clark Mountain and the hill west of Hastings Creek. On the south facing slopes of the hills north of the South Fork American River there is oak woodland and chaparral. Grasslands dominate the relatively flat to rolling portions of the parcel south of Highway 49. Along Greenwood Creek, Hastings Creek and the South Fork American River there are well developed riparian areas.

South facing hill slopes north of the American River are dominated by interior live oak, with black oak, California buckeye, toyon, buckbrush, white leaf manzanita, keckiella, California

coffeeberry, poison oak and pipe vine. The north facing slope of Clark Mountain supports a forest stand dominated by ponderosa pine and black oak. Gray pine and incense cedar become prominent on the lower slopes. Douglas fir is a minor component. Similar vegetation is found on north facing slopes west of Hastings Creek.

The riparian area along the South Fork American River is broad and diverse. Among the prominent species are sand bar willow, arroyo willow, shining willow, valley oak, Oregon ash, white alder, Fremont cottonwood, button willow, coyote brush, mock orange, California wild grape, deer grass and scotch broom.

Grasslands are composed largely of non-native annual species. Especially in the grassland area, invasive plants are becoming monocultures, displacing both native species and other non-native species. The grassland associated invasive species of the most concern are yellow starthistle and medusahead.

White alder, black cottonwood, willow and bigleaf maple are found along the shores of the river. The natural regeneration of the riparian forest appears to be facilitated by the accretion of sediments along the riverbanks, creating more hospitable conditions for plant growth than previously possible when the area was reduced to bare rock and gravel as a result of mining. Rockiness of the site adjacent to the river has produced a narrow, more open strip of riparian forest consisting of deciduous species and intermixed with trees and shrubs more characteristic of drier upland habitats. On cool north-facing slopes along the river canyon, madrone, ponderosa pine, Douglas fir, and incense cedar are also found.

On the slopes and benches above the immediate course of the river the site is mostly covered in interior live oak woodland with a diverse complement of woody species. Interior live, blue, black and valley oak, gray and ponderosa pine are the primary tree species. Interspersed in the oak woodland are patches of chaparral with chamise, white leaf manzanita, toyon, coyote brush, buck brush, and silver lupine.

There are no rare plants known to occur in the project area. Surveys for these species were conducted by the previous BLM botanist in the mid 2000's prior to approval of the Cronan Ranch Management Plan. The current BLM botanist has also walked a large majority of the project area over the past three years and has never found any rare plants in the area.

Visual Resources

All lands within the project area are classified as VRM Class II. Class II requires that changes to the characteristic landscape may be seen, but should not attract the attention of the casual observer.

Wildlife

Wildlife within the project area is typical of wildlife throughout the lower foothills of the Sierra Nevada. Because of the mix of habitat types, the area supports significantly diverse wildlife populations. Over 200 species of birds may occur seasonally, or as residents, including wintering

bald eagles. At least 94 species of mammals are residents, including mountain lions, bobcats, foxes, coyotes, deer, and ring-tail cats. The river itself supports rainbow and brown trout, and a variety of native fishes. The planning area contains numerous habitats including riparian, riverine, blue oak-foothill pine, mixed chaparral/chamise, montane hardwood-conifer, montane hardwood-oak and annual grasslands.

Special Status Wildlife Species:

Several sensitive species are also found in or may pass through the planning area such as:

U.S. Fish and Wildlife Service (USFWS) *Species of Concern*: Western Pond Turtle, Bald Eagle, Foothill Yellow Legged Frog
BLM *Sensitive Species:* Western Mastiff Bat, Townsend's Big Eared Bat, and Foothill Yellow Legged Frog
CDFG *Species of Special Concern*: Foothill Yellow Legged Frog

Valley elderberry longhorn beetle (VELB) is listed as threatened under the Federal Endangered Species Act. The beetle has only been found in association with its host plant, elderberry, which is a common component of the remaining riparian forests and adjacent upland habitats of California's Central Valley and associated foothills up to 3,000 feet. *Sambucus* can occur in several plant communities: riparian forest, savanna or grassland, oak woodland, and mixed chaparral-foothill woodland. There are known occurrences of elderberry shrubs within the project area. The VELB is more frequently encountered in riparian forest margin and elderberry savanna than other situations. Elderberry shrubs/trees with many exit holes are most often found in large, mature plants; young stands are seldom infested. The VELB seems to prefer stems for larval development and pupation which are larger than an inch or two in diameter. The beetle is most likely to occur in situations where plants are not isolated from one another.

Adults feed on the foliage and perhaps flowers, and are present from March through early June. During this period the beetles mate, and the females lay eggs on living elderberry plants. The female places the eggs singly or in small groups in bark crevices or at the junctions of stem/trunk or leaf petiole/stem. Presumably the eggs hatch shortly after they are laid. Larvae bore into the pith of larger stems and roots. When larvae are ready to pupate, they work their way up from the roots through the pith of the elderberry, open an emergence hole through the bark and return to the pith for pupation. The entire life cycle encompasses two years; however, the duration of each life stage is unknown. Adult emergence occurs at about the same time the elderberry flowers.

4.0 Environmental Effects

4.1 Impacts of the Proposed Action

Cultural Resources

The proposed action has been analyzed by the BLM archaeologist to determine whether it would affect significant cultural resources, in accordance with Section 106 of the National Historic Preservation Act. Negative effects to sensitive archaeological sites (those with archaeological deposits) typically occur when the ground is subject to disturbance, leading to the displacement

of artifacts and features, and thus diminishing the scientific research value of the site. Congregation of sheep in a very small area, such as at a watering station, can cause ground disturbance, as the high intensity of sheep use ("hoof traffic") quickly removes vegetation, allowing sheep to displace artifacts and features. If soils are moist (from rain, etc.) at the location, this can exacerbate ground disturbance and negative effects to archaeological deposits. Watering the sheep would involve the use of a watering truck which could also cause ground disturbance if soil moisture is high and under other conditions. The watering station and watering truck would not be placed on a sensitive site. Likewise, the mobile housing unit would not be placed on a sensitive site. Placement of electric fences would involve driving stakes into the ground which would result in negligible ground disturbance, though it is preferable to not place the fences in a sensitive site. The best method to reduce or eliminate impacts will be to avoid cultural resources that could potentially be negatively affected by the proposed treatments. Sensitive cultural resources in the project area will be identified by the BLM archaeologist and avoided by the rancher and herder(s). Therefore, there would be no negative effects to cultural resources potentially eligible for inclusion on the National Register of Historic Places.

Hydrology

Hooved animals can increase surface runoff by reducing vegetation cover through herbivory and trampling and by compacting the soil and disturbing the soil surface. However, impacts to water quality from grazing would be minor and short-term whereas invasive plants can create long-term conditions that modify water quantity and quality. Directly or indirectly, invasive plants can affect streambank stability and sediment input and the turbidity, temperature, dissolved oxygen, and pH of the stream. Water uptake by some invasive plants such as yellow starthistle can also reduce water quantity. Reducing the number of acres degraded by weed infestations would reduce sedimentation in water bodies, improve nutrient cycling, and help return the landscape to normal fire cycles (BLM 2007a).

Invasive Species

In general, vegetation treatments have the potential to affect most plant species in much the same way: all are intended to cause mortality or injury to target plants, which may vary in intensity and extent. Weed management through grazing offers an effective and often resource-efficient means of treating and managing undesirable vegetation across a larger landscape area. Short-term loss of vegetation in these areas would occur until more desirable species filled in the bare areas. Eradicating and/or controlling weed infestations benefits native plant communities by decreasing the growth, seed production, and vigor of undesirable species, thereby releasing native species from much of this competition.

Recreation

Weed treatments using grazing would have some short-term negative impacts but more substantial long-term positive impacts. In general, direct impacts to recreational users and opportunities would result primarily from temporary closures of areas being treated. These closures would be implemented for safety reasons. The guard dogs associated with the sheep could be aggressive if humans or other dogs approached the herd. Electric fences would be used in high use areas to minimize the risk of negative interactions with the public. A sheep herder

will be onsite at all times to control the dogs and thus minimize negative encounters with the public. The Proposed Action would result in long-term benefits to recreationists due to the large area of invasive weeds treated with grazing. This would result in more habitat improvement and improved recreation access which should outweigh the short-term negative impacts.

Soils

Biological control of vegetation using sheep would result in some effects to soils. Their hooves can cause shearing and compaction of soil which could reduce water infiltration and soil productivity by eliminating pore spaces used for water storage and air exchange (BLM 2007b). The effects would be dependent on the intensity and duration of the treatment and would typically last until a vegetation layer is restored at a treatment site. The sheep could additionally alter nutrient cycling processes in soils by depositing organic nitrogen in urine and feces. The BLM would closely monitor the duration and grazing intensity to keep soil disturbance to a minimum. A shepherd and sheep dog(s) would direct a flock to different grazing areas and maintain the flock within that area before moving to the next area. This would help ensure uniform grazing of the target weeds. Without herding, sheep may congregate in one area which could lead to overgrazing. A shepherd would minimize soil disturbance by employing appropriate livestock dispersion techniques, including fencing to prevent damage to riparian and other sensitive areas.

Vegetation

The sheep would likely affect non-target vegetation through browse and trampling. Domestic animals selectively feed on palatable species which would change species composition over time. Elimination or reduction of non-native species would benefit native plant communities by removing competition from weeds. This would provide more resources (e.g., water, light, and nutrients) to native plants, allowing them to reestablish sites previously dominated by weeds.

Medusahead and yellow starthistle would be grazed while still young and palatable. Fencing would likely be used to contain the sheep in areas with monocultures of weeds. This would increase the effectiveness of the weed control and reduce impacts to native species. The BLM would closely monitor and manage the grazing to avoid effects to native plant communities on treatment sites and maximize the treatment of weeds.

Visual Resources

The use of sheep grazing for weed control would cause minimal effects to visual resources. The sight of domestic animals for public users could be unfavorable. Trampling and consumption of vegetation would temporarily alter the grasslands appearance. However, areas that are dominated by invasive species are usually less visually aesthetic and deemed to be impacted by humans and hence not “natural.” In general, grazing would have short-term negative effects and long-term positive effects on visual resources. Negative impacts to visual resources would begin to disappear as more desirable vegetation replaced the removal of invasive species.

Wildlife

The ecological effects of weed invasions on wildlife habitat have been studied. Invasive plants displace native vegetation and unlike the native vegetation they displace, invasive species typically have little value for native wildlife. Because of the spines that yellow starthistle and other thistles produce, they can discourage access by wildlife even into areas that would otherwise provide forage or other resources. Medusahead provides limited forage to wildlife species due to its high silica content.

Prescribed grazing could have some short-term negative impacts but would result in substantial long-term positive impacts for wildlife. Impacts from grazing could include displacement and habitat modification. The presence of sheep and sheep dogs could cause wildlife to move elsewhere to avoid interactions. Sheep would be grazing vegetation that may provide cover or food for certain wildlife species. Grazing could change the composition and distribution of vegetation but could also improve the palatability and nutritional value of forbs, grasses, and some shrubs.

Implementing the Proposed Action would give BLM the best ability to restore native plant communities and their function for the benefit of all wildlife. The negative impact of loss of vegetation cover following treatment in areas of dense weeds would be temporary and more than offset by the long-term benefit of enhanced plant species diversity and forage quality.

Special Status Wildlife Species:

Sheep are known to prefer herbaceous vegetation over woody species. If elderberry shrubs are inadvertently grazed, sheep are extremely unlikely to graze on the larger (1 plus inch) stems, which are the stems where VELB, if present, would preside. In addition, VELB exit holes were not present on any of the stems. The possibility of inadvertent grazing of the host plants will be further reduced by the proper control of sheep as specified in the Project Design Features. Potential project effects would be avoided, mitigated or reduced to non-measurable by implementation of the Project Design Features listed in Section 2.2; therefore, the BLM has determined that the proposed action would have No Effect to the valley elderberry longhorn beetle.

4.2 Impacts of the No Action Alternative

Cultural Resources

Grazing would not occur under the No Action Alternative. The small amount of soil disturbance from electric fence placement would not impact cultural resources. While native plants identified as being important in traditional subsistence, religious, or other cultural practices could benefit from prescribed grazing and subsequent weed reduction, the spread of invasive species may or may not increase erosion on cultural sites depending upon the nature of the invasive species. If weed encroachment causes soil erosion, artifacts may be exposed and collected or displaced; losing their context. The direct loss of cultural resources due to erosion and exposure as well as

replacement of native species would occur over the long term. As weeds spread, native plants available for use by Native American groups would be reduced.

Hydrology and Water Quality

Under the No Action Alternative there would be no impacts such as potential surface runoff by reducing vegetation cover through grazing and trampling and by compacting the soil and disturbing the soil surface. However, invasive plants would continue to create conditions that modify water quantity and quality. Directly or indirectly, invasive plants can affect streambank stability and sediment input and the turbidity, temperature, dissolved oxygen, and pH of the stream.

Invasive Species

Under the No Action Alternative, much less acres would be treated annually than under the Proposed Action because of the increased labor, time, and cost associated with physical and chemical control options; therefore, invasive species would spread at a faster rate.

Soils

This alternative would not have impacts from grazing to soils such as shearing and compaction of soil which could reduce water infiltration and soil productivity. The sheep would not potentially alter nutrient cycling processes in soils by depositing organic nitrogen in urine and feces. While some short-term reduction in potential erosion of treated areas would accompany the smaller amount of weed treatments, over the long term soils would suffer due to decreased soil quality and decreased ability of plant roots to hold soil in place in areas dominated by invasive species.

Recreation

By not implementing grazing for weed management, the short-term conflicts with visitors resulting from temporary closures of areas to reduce grazing conflicts would not be an issue. Potential negative interactions between recreationists and grazing sheep or the sheep dogs would not occur. However, over the long term, weed infestations would continue to expand and recreationists would be impacted by the decline in the quality of the recreational opportunity, both aesthetically and physically, i.e., from restricted access due to spiny weeds like yellow starthistle.

Vegetation

Under the No Action Alternative, sheep would not impact non-target vegetation through browse and trampling. However, native plant communities would not benefit from the elimination or reduction of non-native species competition through grazing. Weeds would continue to outcompete native species and spread at a faster rate; adversely affecting native plant populations.

Visual Resources

Because no grazing would take place under this alternative, visual resources would not be temporarily altered by trampling and consumption of vegetation and public users would not see domestic animals. However, areas that are dominated by invasive species are usually less visually aesthetic and weeds would continue to spread across these areas in the future.

Wildlife

Wildlife would not be impacted by sheep grazing or sheep dogs under this alternative. However, invasive plants are of limited utility to wildlife and degrade wildlife habitat. The No Action Alternative would allow more habitat to become infested with weed species, degrading the habitat even further.

4.2 Cumulative Impacts

Lands along the South Fork of the American River, from Chili Bar to Salmon Falls (including the project area), will continue to be a popular and heavily used area for recreation over the next 25 years and likely well beyond. Recreationists and other user groups have contributed, and will continue to contribute to, weed infestations on BLM and other lands within the South Fork corridor by acting inadvertently as vectors for weed introduction and spread. If weeds are not effectively controlled, native plant communities will continue to be degraded and will negatively impact recreational experiences, visual resources, and the ecology of the river corridor. The Proposed Action would have the most beneficial effect on native plant communities and recreation over the long term by reducing the spread of weeds the most through the ability to use prescribed sheep grazing as a control method to treat large infestations of yellow starthistle and medusahead.

5.0 Agencies and Persons Consulted

- Jack Hamby – CA BLM State Office Rangeland Management Specialist and Noxious and Invasive Weed Coordinator
- Fred Hunt – Soil Technician, El Dorado County & Georgetown Divide Resource Conservation Districts
- LeeAnne Mila – El Dorado County Department of Agriculture
- Dominique Minaberrigarai - Diamond Sheep Company

5.1 BLM Interdisciplinary Team

Reviewers:

/s/ James Barnes *3/2/15*

Cultural Resources Specialist

/s/ Jeff Horn *1/30/15*

Outdoor Recreation Planner/VRM Specialist

/s/ Beth Brenneman *3/3/15*

NEPA Coordinator/Botanist

/s/ Peggy Cranston *1/30/15*

Wildlife Biologist

5.2 Availability of Document and Comment Procedures

This EA, posted on Mother Lode Field Office's website (www.blm.gov/ca/motherlode) under Information, NEPA (or available upon request), will be available for a 15-day public review period. Comments should be sent to the Beth Brenneman at Bureau of Land Management, Mother Lode Field Office, 5152 Hillsdale Circle, El Dorado Hills, CA 95762 or emailed to bbrennem@blm.gov.

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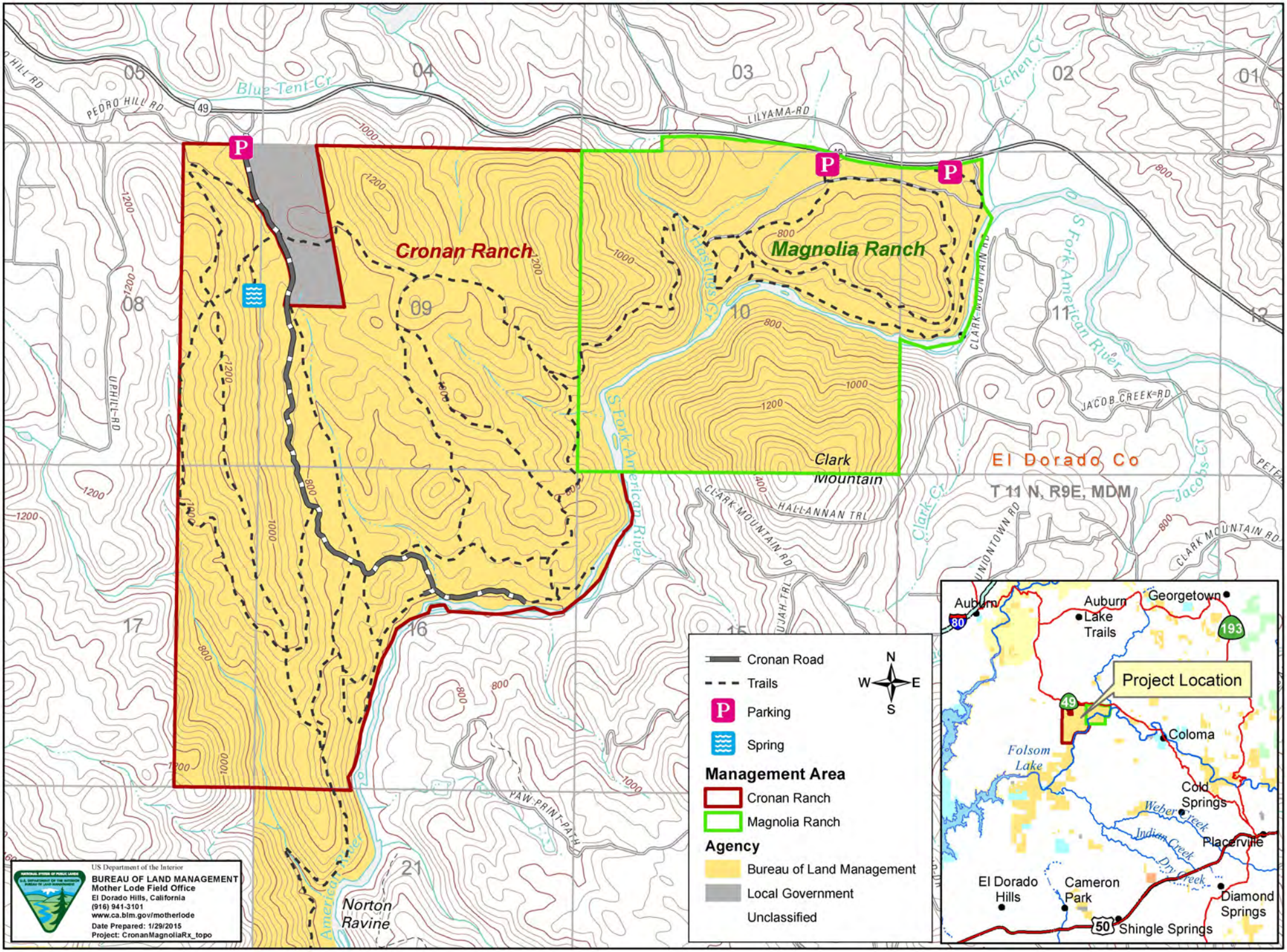
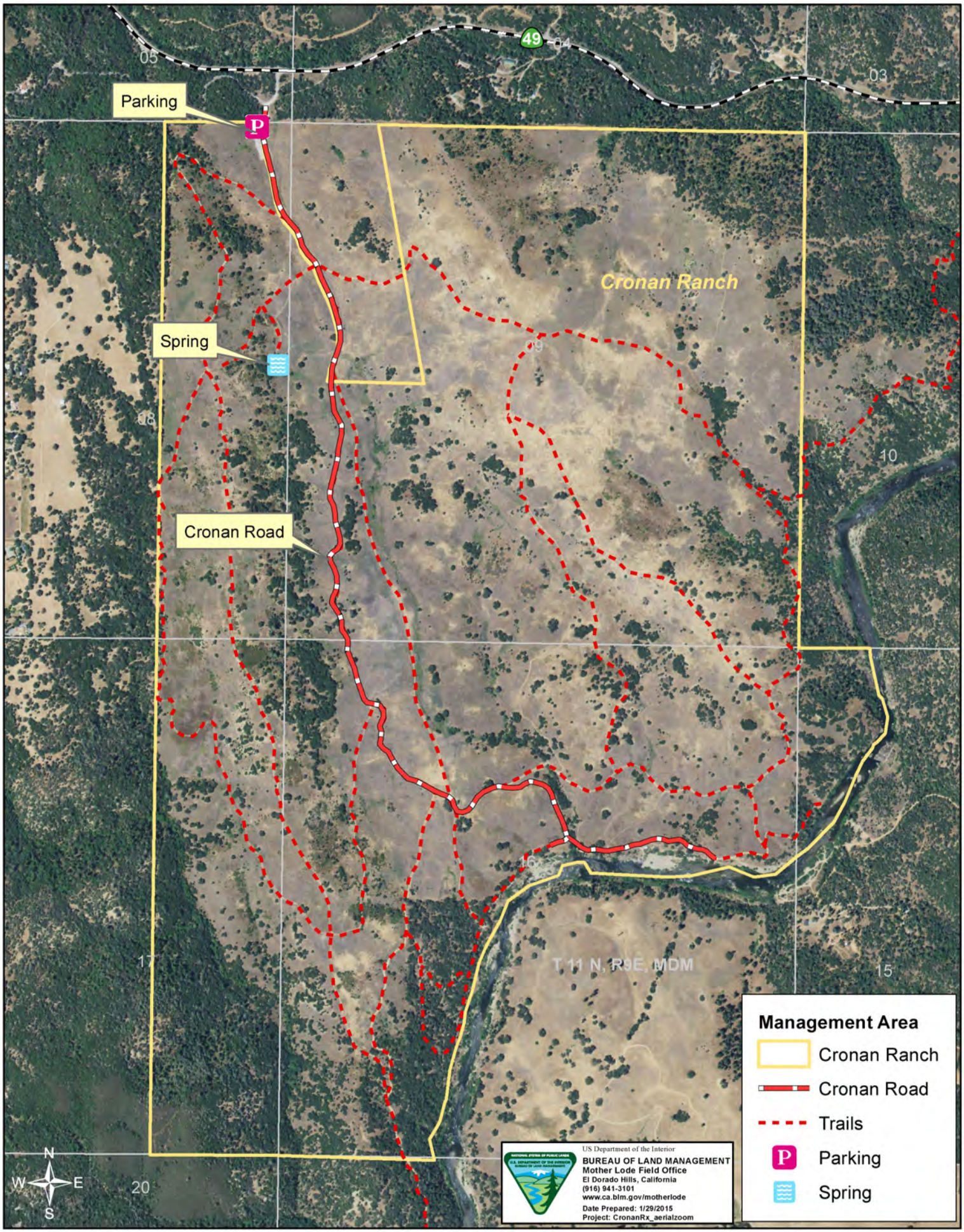
Cronan & Magnolia Ranch Weed Reduction



Cronan Ranch Weed Reduction



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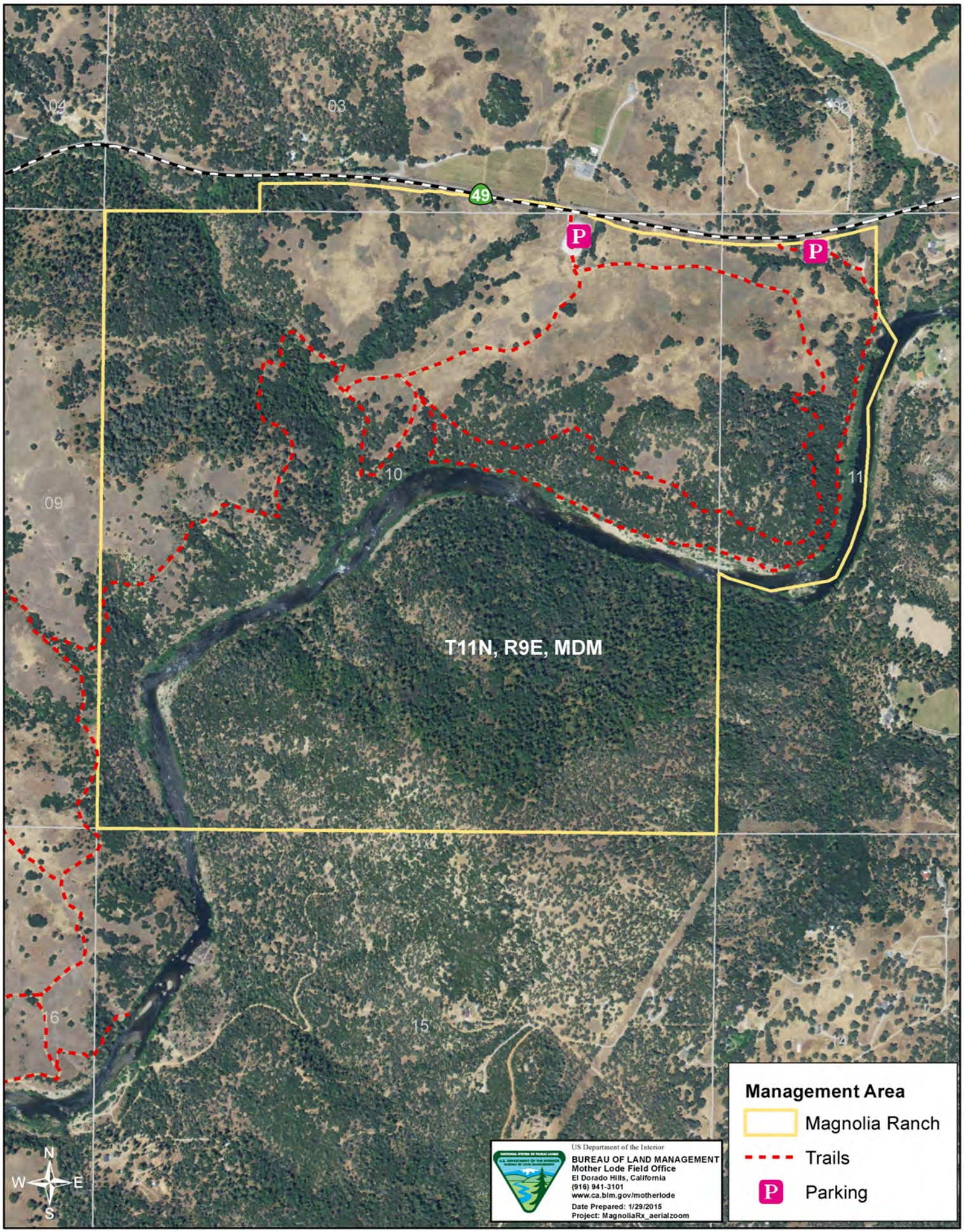
Magnolia Ranch Weed Reduction



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