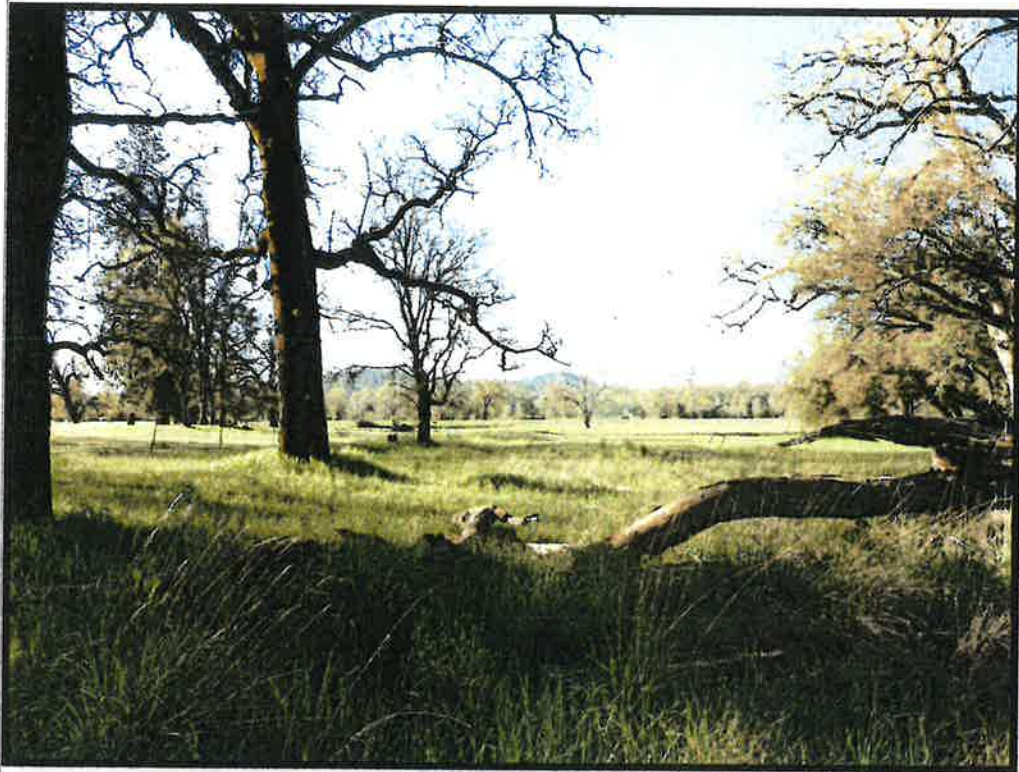


**BIOLOGICAL INVENTORY REPORT
AND
MANAGMENT PLAN FOR IMPACTS TO THE NON-DISTURBANCE BUFFER ZONES
SEASONAL AND A EPHEMBERAL STREAMS**

**CALDWELL PROPERT
MAY 2016**



PREPARED FOR:

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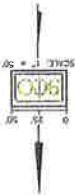
TENTATIVE PARCEL MAP

FOR MARDALYNE CALDWELL, TRUSTEE

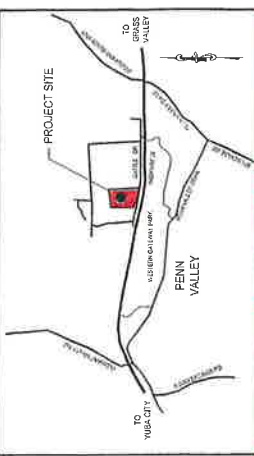
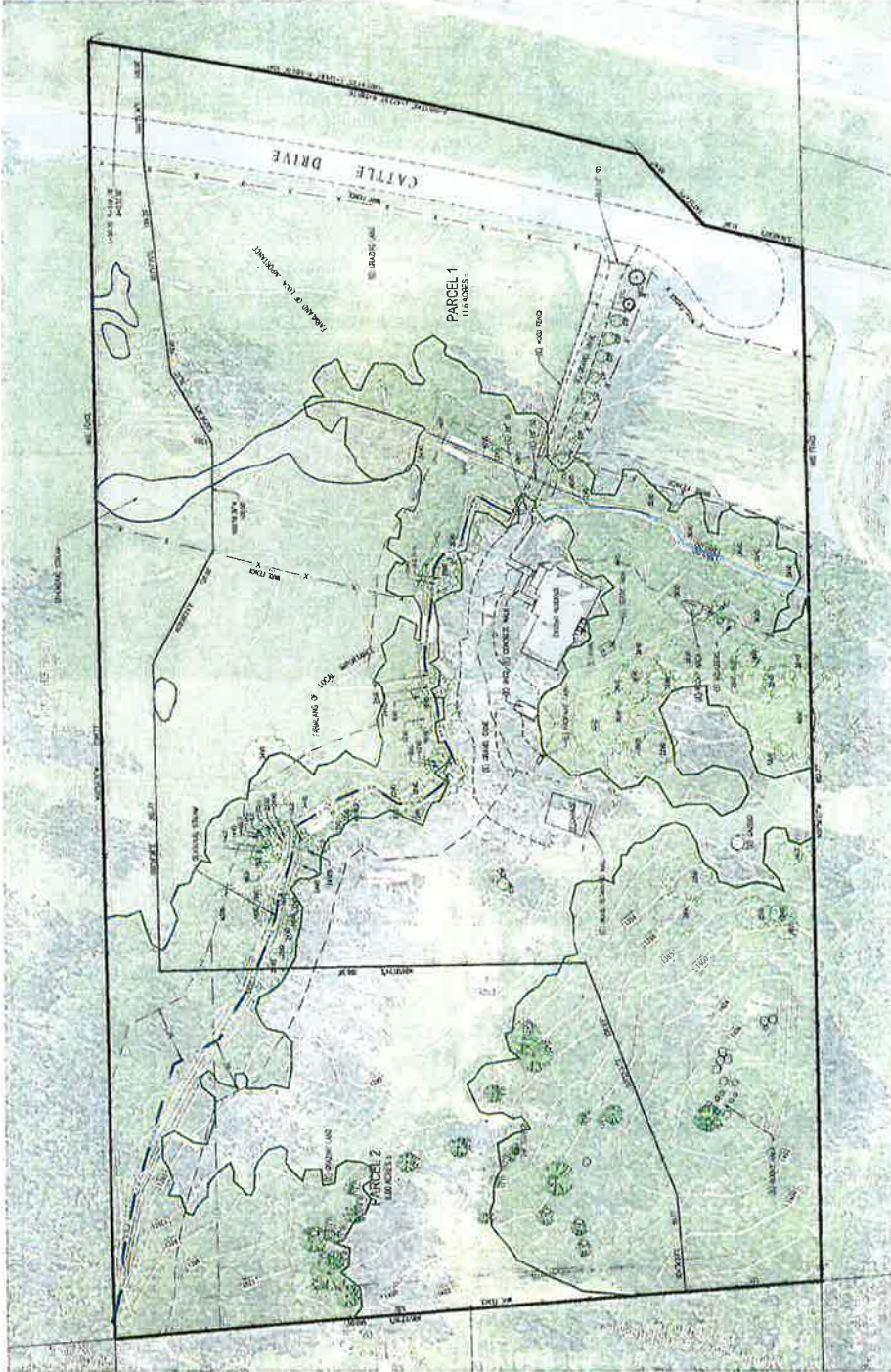
BEING PORTION OF THE NW 1/4 OF SECTION 34, TOWNSHIP 18 NORTH, RANGE 7 EAST, M.D.B. & M.
IN THE UNINCORPORATED COUNTY OF NEVADA.

SCALE 1"=50'

APRIL 2016



- NOTES:**
1. CONTIGUOUS INTERVALS 2.0'
 2. THE BASIS OF BEARING IS IDENTICAL TO THAT PARCEL MAP FILED AT PAGE 10 RECORDS OF THE CLERK OF COUNTY RECORDS, CLERK'S OFFICE, COUNTY OF NEVADA.
 3. THIS PARCEL MAP IS BASED ON SURVEY INFORMATION PROVIDED BY A PREVIOUS FIELD SURVEY AND SUPPLEMENTED WITH ADDITIONAL TOPOGRAPHIC FIELD DATA COLLECTED BY SCD FOR THIS TENTATIVE MAP.



Vicinity Map

Owner Data

OWNER APPLICANT:
MARDALYNE CALDWELL TRUSTEE
10000 WOOD VALLEY RD
PENNSICUTY, CA 95558

MAP PREPARED BY:
SCD PLANNING, ENGINEERING & SURVEYING, INC.
10000 WOOD VALLEY RD
PENNSICUTY, CA 95558
CONTACT: MARDALYNE CALDWELL
PHONE: 530-835-1000

SITE ADDRESS:
1780 CATTLE DRIVE NORTH AND REISBY, CA

ASSESSORS PARCEL NO.:
011000

OVERALL ACREAGE:
7.8 ACRES

GENERAL PLAN DESIGNATION:
RUR

ZONING DESIGNATION:
RUR

Legend

UNIMPROVED LOT
IMPROVED LOT

UNIMPROVED LOT: LOT AREA 0.00 AC, TOTAL LOT AREA 0.00 AC, TOTAL LOT AREA 0.00 AC

IMPROVED LOT: LOT AREA 0.00 AC, TOTAL LOT AREA 0.00 AC, TOTAL LOT AREA 0.00 AC

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Utility Provider

WATER - PRIVATE WELLS
SEWER - SEWER SERVICE
ELECTRICAL - PG & E
GAS - PROPANE
TELEPHONE - ATT



FIGURE 1. TENTATIVE PARCEL MAP

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INTRODUCTION

This Report includes a biological inventory for the proposed 2-way parcel split to subdivide the 15.05 acre Caldwell property. The project location is at 17860 Cattle Drive, Penn Valley, CA within the unincorporated area of Nevada County. It is currently developed with a residential home and several other structures including a detached garage, shed, etc.

The Tentative Parcel Map (Figure 1.) divides the parcel into Parcel 1, containing the residence on 10.05 acres, and Parcel 2, an undeveloped parcel on 5.0 acres. The proposed division locates Parcel 2 in the north area of the site with the remainder as Parcel 1. Access to Parcel 2 will necessitate a 12' wide driveway from Cattle Drive to a building site. The future driveway will be located within the flagpole portion of Parcel 2 along the eastern property boundary and will encroach into the non-disturbance buffer zone of designated wetland/riparian areas, cross an ephemeral stream and seasonal stream, and encroach near a Landmark Oak and through a Landmark Oak Grove. A Management Plan has been prepared and is included as a separate document with this report to address the encroachment of the future driveway.

The biological inventory includes a description of the plants and wildlife found within the project area and a discussion of the landmark oak grove(s), oaks, wetlands and other important biological resources that occur within the property boundaries. The construction of the driveway will encroach upon the aquatic resources on site, the protected root zone of one landmark oak, and within the landmark oak grove in the north section of the existing parcel. Within this report are Best Management Practices to ensure protection of the oak and landmark oak grove. Refer to Figure 2. for the Biological Constraints Map.

This analysis of resources and impacts is based on the Tentative Parcel Map prepared by SCO Planning & Engineering, Inc. dated February 2016. This report fulfills the requirements of the policies and ordinances for biological resource protection contained in the relevant Nevada County ordinances. The Nevada County Land Use and Development Code, Chapter II; Zoning Regulations, Section L-II 4.3. 17C.3 [Ordinance No. 2033] requires a Management Plan be prepared for projects in non-disturbance buffers, within 50 feet from the high water mark of intermittent watercourses; 17C.4 requires inclusion of areas that are within 100 feet of wetlands and riparian areas. (Nevada County 2000. Land Use and Development Code, Chapter II: Zoning Regulations. Effective July 27, 2000).

Project Location

The project site is located in Penn Valley, California, approximately 0.40 land miles from the intersection of Highway 20 and Cattle Drive in southwestern Nevada. It occurs on the Rough and Ready USGS quadrangle, located within the NW $\frac{1}{4}$ of Section 34, Township 16 North, Range 7 East M.D.M. Adjacent land uses are low density rural residential. Location address is 17860 Cattle Drive, Penn Valley, CA; APN 51-110-04.

Project Description

This project proposes to split a ± 15.05 acre parcel into roughly two parcels; the proposed parcel #1 will be 10.05 acres and parcel #2 will be 5.00 acres. Future access to Parcel 2 will be via Cattle Drive along the eastern property boundary and requires a Management Plan (included herein as a separate document) to mitigate potential impacts to aquatic features, landmark oaks and landmark oak groves.

METHODS

Pre-field Survey

The purpose of the pre-field investigation was to review existing information and to prepare a list of special status species with potential to occur in the vicinity of the project area. Sources of information included are as follows:

- *California Natural Diversity Data Base (CNDDDB, March 2016).*
- *California Native Plant Society Inventory of Rare and Endangered Plants of California (CNPS 2003).*
- *Federal Endangered and Threatened Species that occur in or may be affected by Projects in the Rough and Ready USFS 7.5 minute Quadrangle, disseminated by U.S. Fish and Wildlife Service (USFWS)- IPaC Trust Resources Report for March 4, 2016.*
- *The Jepson Manual Vascular Plants of California, Thoroughly Revised and Expanded. University of California Press, January 2012.*
- *California Wildlife Habitat Relationships System (California Department of Fish and Game version 8.0).*
- *Nevada County Natural Resources Report: A Scientific Assessment of Watersheds and Ecosystems (Beedy and Brussard 2002).*
- *Nevada County Zoning Regulations Chapter II of the Land Use and Development Code. Adopted 10-23-07.*

FIELD SURVEYS

Plants

Special-status plant species surveys were performed in March 2016. Surveys were conducted in a manner to identify any rare or endangered species that may be present. Survey protocols that were followed include Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities, Department of Fish and Game, December 9, 1983 (Revised May 8, 2000) and Guidelines for Conduction and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants, USFWS, January 2000.

The surveys were conducted using systematic field techniques in all habitats of the site to ensure a reasonably thorough coverage of potential impact areas. A meandering pattern was walked through each habitat to ensure that all areas were viewed. All plants at the site were identified to the level necessary to ascertain whether they were special status species. Plant surveys were and will be conducted according to the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities, CDFW, with an early Spring survey done in March and then a late Spring survey sometime in May 2016, depending on the weather, to ensure that any protected species will be identified.

NOTE: This report will be submitted prior to the second late Spring survey. Once that is completed, a completed plant list and any additional findings will be included as an addendum to this report.

Wildlife

A wildlife habitat assessment was performed in coordination with the March plant surveys. Surveys were conducted to determine if habitats supported special-status animal species and raptor nest searches were performed during these surveys. Protocol level surveys for potentially occurring special-status animals were not conducted. The determination of presence for animal species possibly occurring was based on habitat assessments, literature review, and queries through CNDDDB and USFWS.

EXISTING CONDITIONS

Environmental Setting

The study area is situated in a valley, known as Penn Valley, that is a relatively level plain in the Sierra Nevada foothills. The site contains open annual grasslands with a few individual oaks and mostly a contiguous landmark oak grove consisting of several species of oaks, named in order of greatest relative numbers: Valley Oak (*Quercus lobata*), Blue Oak (*Q. douglasii*), and Interior Live Oak (*Q. wislizenii*).

According to the USGS Topographic Map for the Rough and Ready quadrangle there is a channelized seasonal stream, marked as a dashed blue line, that enters from northeast of the property and meanders through the mid-section of the site, exiting on the southwest side of the property. The bed of this channel had no more than 2 inches of running water during the March surveys.

There is also a smaller, ephemeral stream with a less defined embankment with associated wetlands, sometimes referred to as a swale. This feature can be observed entering the property from as far as the eye can see from the east, entering the site from its mid-east section and again meandering through the east quadrant for approximately 250 feet. It

becomes channelized as it enters the oaks and merges with the seasonal stream at the driveway crossing. This merged stream then continues off-site to the west. There are 3-other small isolated wetlands adjacent to the east side of the property. During the March surveys, no water was present within any of these features.

Proposed Parcel 1

This is a developed property with a residence and other related structures. The land surrounding the home has been landscaped with shrubs and trees commonly found in landscaped gardens, with a small vineyard. Many of the oaks have been incorporated into the landscape. There are also several open areas of grassland, including an area in the southeast quadrant that is earmarked as "Farmland of Local Importance." In addition, there is a small business for staging and cutting logs for firewood, located partially on both proposed parcels. No on-site trees are removed for this purpose, but wood is brought to the site, processed for firewood and then transported off-site.

Proposed Parcel 2

This parcel is primarily an undisturbed site, within the Landmark Oak woodlands that dominate the 5-acre site, and with open areas of grasslands within the middle of the oaks. The proposed MUSDA site is located in the east side of the proposed parcel within the smaller stature oaks trees within the Landmark Oak Grove. There appears to be sufficient room to place the leach lines outside and away from the oaks to maintain a healthy woodland.

Watershed

The property is within the Squirrel Creek watershed (Beedy and Brussard 2002) at elevations ranging an average of 1,440 feet above mean sea level (MSL). The watershed is comprised of approximately 6,700 acres and the majority of the large-patch ecosystems are oak-foothill pine ((3,014 acres), annual grassland (2,014 acres), Ponderosa Pine (633 acres), foothill hardwood (608 acres), foothill riparian (254 acres), and vineyards (185) (Beedy and Brussard 2002).

Plant Communities

Where possible the vegetation has been classified according to the California Natural Diversity Data Base's Descriptions of the Terrestrial Natural Communities of California (Holland, 1986). The California Natural Diversity Database (CNDDDB) is a computerized inventory of the locations of populations of rare and threatened plants, animals and natural communities in California. These elements of natural diversity are monitored by CNDDDB to assure that California's rich biological heritage is adequately represented in their inventory. A list of wildlife observed during the surveys is included in Appendix A. and Appendix B. Property Photographs, Photoplates 1 and 2.

Foothill Hardwood Woodlands

The oak woodlands are a prominent feature not only on this site but throughout Penn Valley. There is a mixture on the property of older, large trees, some identified as Landmark Oaks (greater than 36 inch diameter at breast height), and with many younger, smaller diameter oak trees. The dominant hardwood is the Valley Oak with some Interior Live Oak and Blue Oak. Most of the larger oaks are an average of 60 feet in height, and form an understory of shade where mostly grasses, native and non-native, can be seen.

Although Valley Oak trees are abundant throughout the Caldwell property, as well as Penn Valley, this species rarely occurs as monospecific stands. It is usually found as a component of other hardwood woodlands, as described in this report. These oaks are endemic to California and are found in the interior valleys and foothills. Typically, they the largest diameter of oaks.

Though endemic to California, they have a very restricted distribution in Nevada County. Approximately 1,804 acres of valley oak woodland were mapped in Nevada County (Beedy & Brussard 2002). This habitat type occurs between 338 and 2,300 feet elevation in the foothill zone. Approximately 94 percent of the 1,804 acres documented in Nevada County are in private ownership. Valley oak woodlands were formerly extensive in the Sacramento-San Joaquin valleys. However, most historical stands have been cleared for agriculture, flood control, and urban expansion (Holland 1986). In the foothills, valley oaks generally occur as stringers along low gradient reaches of foothill streams or in valley bottomlands. Foothill riparian woodlands provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for a high diversity of wildlife species (Beedy & Brussard 2002).

Landmark Oak Trees and Groves

There are 21 Landmark Oaks (LMOs) on site. All are Valley Oak, and they are interspersed with the smaller diameter trees within the grove. These oaks have been measured and are recorded on the Biological Resources Map. The largest is a 60 inch Valley Oak tree found on the western boundary line of the proposed Parcel 1. There are 19 LMOs that occur on the developed Parcel 1, and 2 that occur on Parcel 2, both of which are outside of the proposed driveway and/or MUSDA sites. All LMOs appear to be in relatively in good health, and most are interspersed with smaller trees which mostly occur outside of their expansive drip-lines.

Although none of the oak trees are slated for removal or any adverse impacts by the future 12 foot wide driveway and MUSDA location, if any trees should be removed, then mitigation will be required and recommended steps will be included in this report under Impacts and Mitigation to best avoid injury to the oak trees.

It should be noted that the property owner has cared well for the oaks on site, including those in the existing MUSDA area for Parcel 1.

Natural Resource Values Of Oak Woodlands

This portion of the report is included as a reminder of the importance of the oaks in Nevada County and to provide a brief explanation of why they are protected and why landowners are encouraged to preserve them, especially in their natural state.

Oaks provide habitat to more different animals than any other ecosystem in the state. Acorns, leaves, wood and sap are sustenance for a myriad of insects, birds, and mammals. Many other species, including amphibians, reptiles and birds, do not directly feed on oaks but prey heavily on the insects that do. Oaks also contain nooks, crannies, perches and passages that are homes, breeding grounds and resting areas for many animal species. Small mammals such as mice, voles, gophers, and moles rely upon oaks, and even though these mammals often kill young oaks by eating their bark, roots or leaves, they can also assist oaks by spreading the spores of certain beneficial fungi into areas where young trees are growing, aiding the trees' survival. Notably, over 130 species of cynipid wasps form galls on various parts of oak trees. They lay their eggs on a portion of the oak, and in response the oak tree forms a gall, a kind of growth that surrounds the larvae to protect the rest of the tree. In most cases galls do no harm to the oak tree, but provide another example of the diversity of life that depends on oaks.

In addition to these creature benefits, oaks produce oxygen, like all trees, and through their normal respiration, reduce air pollutants such as nitrogen oxides, sulfur dioxides, carbon monoxides, carbon dioxide, ozone as well as small particulate matter. Other benefits include shade, wind control, improved air quality, oxygen production and carbon dioxide reduction, reduced water runoff and erosion and improved water quality, noise abatement, glare reduction, animal habitat, visual enhancement, and reduced cooling and heating expenses. Research has also shown that trees have social benefits. Because people find oaks and other trees attractive, they associate positive perceptions about a place with the presence of trees. Studies have shown that looking at trees reduces stress in individuals, so much so that hospital patients who have a view of trees and natural areas have significantly shorter stays, require less pain medicine and have fewer postoperative complications.

Annual Grasslands/Pasturelands

Non-native grasses occur throughout the project site. They are not isolated to one specific plant community. Non-native grasses' phenology is such that they are able to out compete most native grasses and forbs. They were mostly prevalent in the upland reaches of the meadow and within wetland areas on site, probably due to full-sun exposure.

Typical grasses and forbs observed during the early Spring survey are included here, and a more thorough list will be included after the late Spring survey. Species observed were hedgehog dogtail grass (*Cynosurus eichinatus*), rip-gut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*) and several species of fileree (*Erodium spp.*).

Rock Outcrops

Numerous rock outcrops are scattered throughout the oak woodlands at the project site, particularly in the vicinity of a small knoll on the Parcel 2 site. Rock outcrops are important microhabitats for plants and animals. The crevices and surfaces provide basking sites and cover for wildlife such as western rattlesnakes (*Crotalus viridus*) and western fence lizards (*Sceloporus occidentalis*). Bats such as big brown bats (*Eptesicus fuscus*), pallid bat (*Antrozous pallida*), little brown myotis (*Myotis ludifugus*), Yuma myotis (*Myotis yumanensis*), and Mexican free-tailed bats (*Tadarida brasiliensis*) may also use rock crevices as roost sites. The rock/soil interface is often of higher moisture content and more friable than adjacent soils, and attracts burrowers such as ground squirrels (*Spermophilus beecheyi*) and pocket gophers (*Thomomys bottae*), which in turn attract predators such as gray fox and coyote.

AQUATIC RESOURCES

Seasonal Stream

According to the topographic map on the Nevada County "My Neighborhood" maps, this parcel has a channelized seasonal stream, marked as a dashed blue line, that enters from northeast of the property and meanders through the mid-section, exiting on the southwest side of the property. However, the USGS map for the Rough and Ready quadrangle dated 1995 does not show a seasonal stream feature on this parcel site. During the March surveys, the bed of this channel had no more than 2 inches of running water and there was no wetland/riparian plant life associated with the embankment.

Seasonal streams have flowing water periods during the wet season (winter-spring) but are normally dry during the hot summer months. This category of streams does not have continuous flowing water year-round, and these are not "relatively permanent waters." There was no wetland/riparian vegetation found along this stream in the March surveys, so it is assumed that water is only present during storm events.

Ephemeral Stream with Associated Wetlands

The wetlands on site is a seasonally wet grassland associated with the ephemeral stream that has a less defined embankment than seasonal streams; sometimes this aquatic feature is referred to as a swale. This feature can be observed entering the property from the east, and again, meanders through the east quadrant for approximately 250 feet, becoming channelized as it enters the oaks and merging with the seasonal stream at the driveway crossing.

The stream is known as "ephemeral" because it has flowing water only during, and for a short duration after, precipitation events in a typical year. The stream bed is located above the water table year-round and ground water is not a source of water for the stream. (Federal

Wetland/Waters Regulatory Policy, Wetland Training Institute, 2006 edition). There are 3 other small isolated wetlands adjacent to the east side of the property. During the March surveys no water was present within these features. Species composition is dominated by a mix of native and non-native grasses and grass-like plants. Dominant species include the native species Baltic rush (*Juncus balticus*), Popcorn flower (*Plagiobothrys nothofulvus*), Five Spot (*Nemophila maculata*), and the non-native species bulbous bluegrass (*Poa bulbosa*) and velvet grass (*Holcus lanatus*).

SPECIAL STATUS SPECIES

Special-status species were considered for this analysis based on field survey results, a review of the California Natural Diversity Database (CNDDDB), CNPS literature, database information provided by the U. S. Fish and Wildlife Service (USFWS) (Rough and Ready 7 ½ Minute Quad database last updated 04/16), and the Nevada County General Plan for Wildlife and Vegetation. The lists generated for the Rough and Ready quad can be found in Appendix C for Plants and Appendix D for Wildlife. No special status species were observed during the early Spring survey.

Critical Deer Habitat

GIS information highlighting all major deer migration corridors, critical range, and critical fawning areas in Nevada County (Appendix E) indicates that the project area does not contain any known major deer migration corridors, known deer holding areas, nor critical deer fawning area(s).

REGULATORY CONTEXT

Nevada County

Nevada County Land Use and Development Code, Chapter II; Zoning Regulations, Section L-II 4.3. 17C.3 [Ordinance No. 2033] requires a Management Plan be prepared for projects in non-disturbance buffers, including areas that are:

- Within 100' of wetlands and riparian areas, and from the high water mark of perennial streams and watercourses;
- Within 50' from the high water mark of seasonal watercourses;
- Within 100' of the canal water surface on the uphill side of a canal; within 20' of the water surface on the downhill side of a canal.

Nevada County Land Use and Development Code, Chapter II Zoning Regulations, Section L-II 4.3. 15C.2 & 3: Projects shall be approved only when they do not remove or disturb

- Landmark oak trees (*Quercus* sp. greater than 36" DBH), or
- Landmark oak groves (groves 33% or greater canopy cover);

If this standard effectively precludes development of the project or a revised project, or adversely affects another environmentally-sensitive resource, a Management Plan shall be prepared to evaluate the impact of the project on defined trees and groves and recommend project modifications that avoid or minimize impacts. Emphasis shall be placed on protecting groups of trees rather than individuals.

IMPACTS

Significance Criteria

The criteria for determining significance of impacts discussed below are based on the recently amended CEQA environmental checklist. Impacts to biological resources were considered potentially significant if the project would:

- Have a substantial adverse effect, either directly through habitat modifications, on any species identified as candidate, sensitive, or special status-species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFG or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined above (including, but not limited to, marshes, vernal pools, coastal wetlands) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Impacts to a Landmark Oak and Landmark Oak Grove

The most efficient and practical route for a 12 foot wide driveway to access Parcel 2 and MUSDA site will ultimately require construction through the dripline of one-landmark oak, landmark oak grove, and aquatic features which are addressed in the management plan. The dripline of one landmark Valley Oak, ± 42 inch diameter at breast height, is located within the anticipated future driveway alignment, adjacent to the east property boundary. The driveway design is such that only 15% of the oak's protected root zone and at a depth no greater than 4 inch grade will be impacted. It is not anticipated that this "low-level" impact will cause significant harm to this oak.

The future driveway alignment is anticipated to bisect the east portion of a landmark oak grove and could result in construction within the limits of some landmark oak trees. In accordance with Nevada County Zoning Ordinance requirements, if it is impossible for the project design to avoid landmark oak groves or trees, or if avoidance would make it impossible to achieve a more important environmental protection goal or requirement, then the project may be approved and constructed if a Management Plan is prepared, approved and implemented (attached herein as a separate document).

Prior to future construction of the driveway and MUSDA, a certified arborist or qualified biologist shall review the plans to determine if impacts to individual oaks or the landmark oak grove will be significant. After construction is completed, an inspection will be performed by an arborist/biologist of the preserved trees, including trees subject to encroachment within the drip line, for construction-related damage or other associated impacts, and appropriate remedial steps, if any are required, will be recommended.

MITIGATION MEASURES

The following information provides an assessment of potential impacts if the parcels were developed. Mitigation measures are also discussed to avoid impacts to landmark oak and landmark oak groves, wetlands, riparian habitat, special status species, and other sensitive resources on the property.

Proposed Project

At this time, the applicant has not proposed any specific development on the property other than a MUSDA site for the proposed Parcel 2. If only minor encroachments occur within the oak woodlands, then mitigation would not be necessary. However, a Management Plan is included with this report as a separate document in anticipation of a future driveway access to Parcel 2 that will encroach into the non-disturbance buffer of an ephemeral stream and seasonal stream and bisect a Landmark Oak Grove.

Streams

As stated above, the future 12-foot driveway to access the proposed Parcel 2 will require crossing an ephemeral stream and a seasonal stream. These two crossings are within the non-disturbance buffer of each stream, and for this reason a Management Plan will be included with this report as a separate document to fulfill the Nevada County requirements for projects that impact the non-disturbance buffers.

Potential Impacts to Nesting Birds

If future development plans involve tree removal for creation of building pads or septic areas, nesting migratory birds could be harmed if tree cutting occurred during the nesting

season (March 1 to August 1). CDFW codes protect migratory birds from harassment or harm, and also protect their eggs and nestlings. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered a "taking" by CDFW. The federal Migratory Bird Treaty Act (16 U.S.C. Section 703, Supp. I 1989) prohibits killing, possessing or trading in migratory birds. Removing trees outside of the nesting season (August through January) will avoid this potential impact to nesting. Alternatively, if tree removal will occur during the nesting season, pre-construction surveys should be conducted by a qualified biologist to verify that trees slated for removal do not support nesting birds.

Potential Impacts to Oak Woodlands

The landmark oaks and landmark oak woodlands/groves on the project site are currently unfragmented and relatively undisturbed, and provide high quality wildlife habitat. If future projects on this property result in removal of a substantial number of oak trees which results in fragmentation of the woodland, the result could have significant impacts to this sensitive community. To avoid or minimize impacts to oak woodland, or to compensate for lost oak woodland, an Oak Woodland Habitat Management Plan should be prepared if future development will affect the oak woodland or landmark oaks on the project site. It is not anticipated a 12-foot wide driveway to access Parcel 2 will result in the removal of a substantial number of oak trees.

BEST MANAGEMENT PRACTICES FOR OAK TREE PROTECTION

The following are general guidelines or best management practices for tree protection during construction activities, taken from some of the oak reference sources noted below.

- Landmark Oak groves and any other oaks adjacent to the driveway/MUSDA construction areas should be protected with high-visibility fencing placed at least one foot outside the dripline prior to commencement of construction.
- If possible, do not disturb the Protected Root Zone (PRZ) of trees to be preserved. The PRZ is defined by its "critical root radius." It is more accurate than the dripline for determining the PRZ of trees growing in forests or that have narrow growth habits. To calculate critical root radius, measure the tree's diameter at breast height (dbh) which is 4.5 feet above the ground. Measure in inches. For each inch, allow for 1 to 1.5 feet of critical root radius.
- Install high visibility fencing around the PRZ of any tree or cluster of trees with overlapping canopy that are identified on an approved grading plan as needing protection.
- The fencing should be four-feet high and bright orange with steel t-posts spaced 8 feet apart.
- Where possible, do not grade, cut, fill or trench within the PRZ.
- Do not store oil, gasoline, chemicals, other construction materials, or equipment within the PRZ.

- Do not store soil within the PRZ.
- Do not allow concrete, plaster, or paint washout within the PRZ.
- Do not irrigate within the PRZ or allow irrigation to filter into the PRZ.
- Plant only drought tolerant species within the PRZ.

The following are general guidelines for protecting oak trees in gardens and yards.

- Avoid summer irrigation.
- Disturb the zone within six feet of the trunk as little as possible. The base of the tree should be kept dry.
- Limit plantings beneath oak trees to drought-tolerant species that do not require summer irrigation.
- Landscape beneath oak trees with non-living plant materials such as wood chips.

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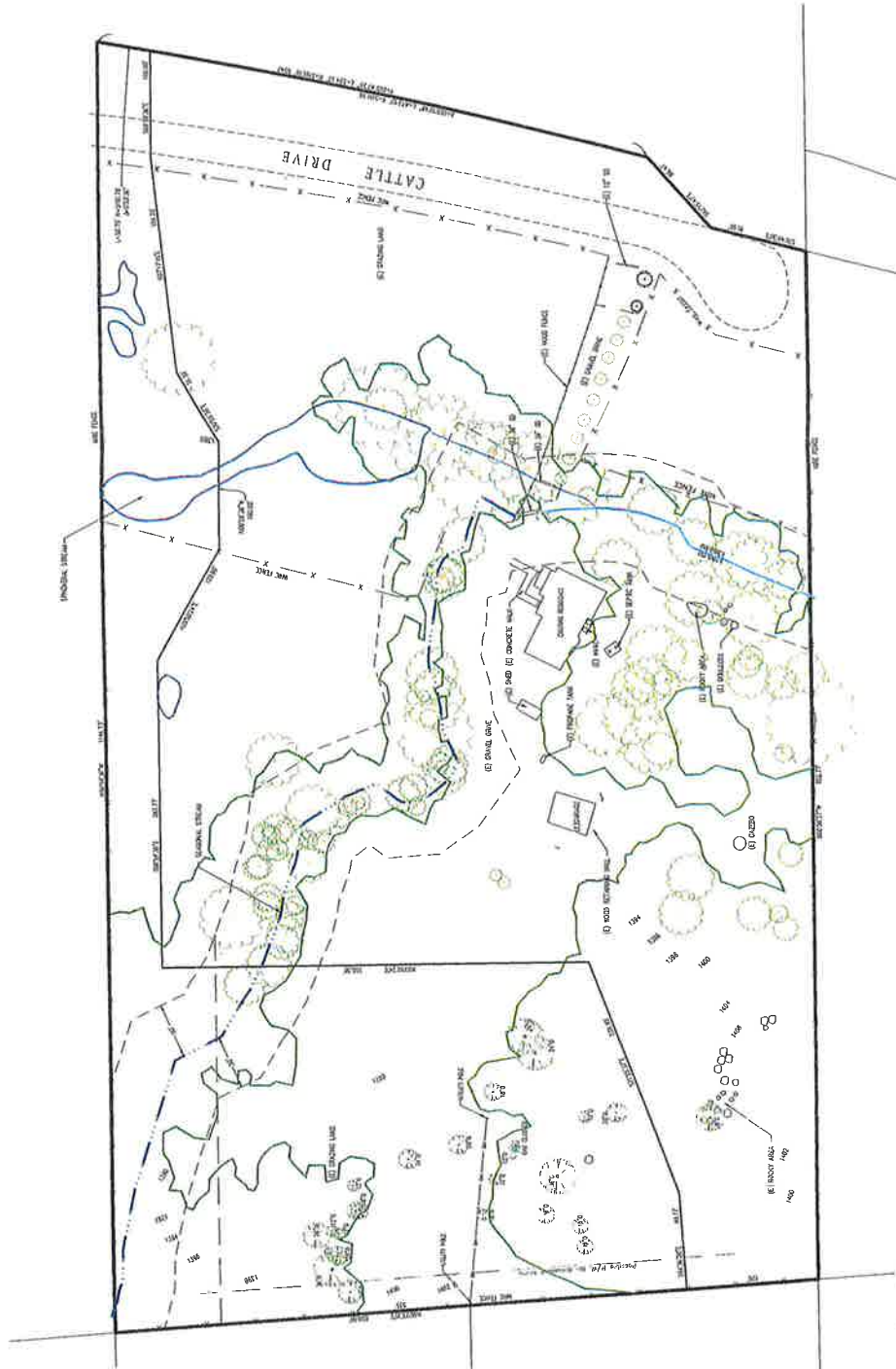
Oak References:

Information on building around oaks and oaks in the home garden can be found in the Integrated Hardwood Range Management Program's (IHRMP) leaflet, Living Among the Oaks. Additional information on disturbance around oaks and protecting trees from construction impacts can be found in the UC Cooperative Extension's (UCCE) handout, Disturbance Around Oaks (Frost, 2001) and the California Department of Forestry's (CDF) Tree Notes, Protecting Trees from Construction Impacts (Sanborn, 1989). Information on the care of oak trees is also available through the California Oak Foundation at: <http://new.californiaoaks.org/> (last visited May 7, 2016).

BIOLOGICAL CONSTRAINTS MAP
FOR
MARDALYNNNE CALDWELL, TRUSTEE

APRIL 2016

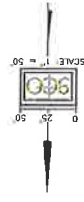
SCALE: 1" = 50'



| FIELD NOTES | |
|-------------|---|
| | ALL DATA IS BASED ON THE LATEST AVAILABLE AERIAL PHOTOGRAPHIC DATA AND FIELD SURVEY DATA. THE DATA IS SUBJECT TO CHANGE AND SHOULD BE VERIFIED BY THE CLIENT BEFORE ANY CONSTRUCTION. |
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NOTES:

1. CONTOUR INTERVAL: 2.0'
2. THE DATA IS BASED ON THE LATEST AVAILABLE AERIAL PHOTOGRAPHIC DATA AND FIELD SURVEY DATA. THE DATA IS SUBJECT TO CHANGE AND SHOULD BE VERIFIED BY THE CLIENT BEFORE ANY CONSTRUCTION.
3. ADDITIONAL TOPOGRAPHIC FIELD DATA COLLECTED BY SCD FOR THIS TENTATIVE MAP.



SCD
ENGINEERING
SURVEYING

FIGURE 2. BIOLOGICAL CONSTRAINTS MAP

Appendix A. Wildlife Observed – Caldwell Property

March 2016

Birds Observed

| Common Name | Scientific Name |
|----------------------|--------------------------------|
| Canada goose | <i>Branta canadensis</i> |
| Turkey vulture | <i>Cathartes aura</i> |
| Red-shoulder hawk | <i>Buteo lineatus</i> |
| Acorn woodpecker | <i>Melanerpes formicivorus</i> |
| Western scrub-jay | <i>Aphelocoma californica</i> |
| Common raven | <i>Corvus corax</i> |
| Oak titmouse | <i>Baeolophus inornatus</i> |
| Bushtit | <i>Psaltriparus minimus</i> |
| European starling | <i>Sturnus vulgaris</i> |
| California towhee | <i>Pipilo crissalis</i> |
| Red-winged blackbird | <i>Agelaius phoeniceus</i> |

Reference Source: 2016 The American Ornithologists' Union.

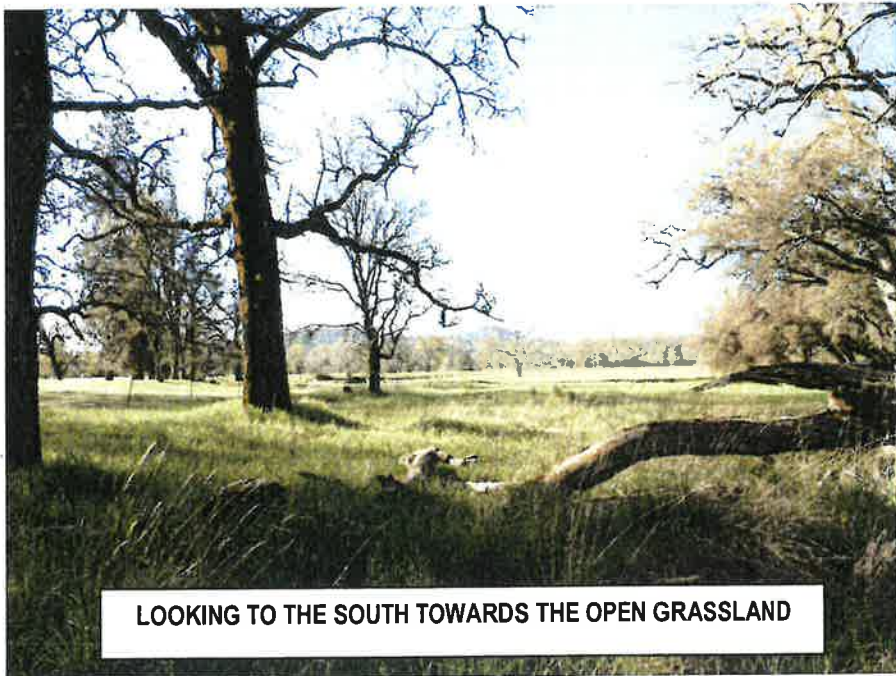
Wildlife Observed

| Common Name | Scientific Name |
|---------------------------------|---------------------------|
| Pacific chorus tree frog | <i>Pseudacris regilla</i> |
| Botta's pocket gopher (burrows) | <i>Thomomys bottae</i> |

APPENDIX B . ON-SITE PHOTOGRAPHS



LOOKING NORTHEAST FROM THE SEASONAL STREAM



LOOKING TO THE SOUTH TOWARDS THE OPEN GRASSLAND

Costella Environmental Consulting
Tina Costella, M.S.
P.O. Box 215
Nevada City, CA 95959
tcostella@metrailer.com
Phone: (530) 265-6969

CALDWELL PROPERTY
Photo Plate 1
Photos taken by T.Costella
March 2016

APPENDIX B. ON-SITE PHOTOGRAPHS



EXISTING MUSDA SITE - PARCEL 1



PROPOSED MUSDA SITE - PARCEL 2

Costella Environmental Consulting
Tina Costella, M.S.
P.O. Box 215
Nevada City, CA 95959
tcostella@metrailer.com
Phone: (530) 265-6969

CALDWELL PROPERTY
Photo Plate 2
Photos taken by T. Costella
March 2016

**APPENDIX C. SPECIAL STATUS PLANTS
CALDWELL PROPERTY - ROUGH & READY QUAD**

| SCIENTIFIC/ COMMON NAME | COMMUNITIES | BLOOMING | FEDERAL STATE CNPS | POTENTIAL TO OCCUR WITHIN PROJECT SITE |
|---|---|---------------------|--------------------------|---|
| <i>Calystegia stebbinsii</i> Stebbins' morning-glory | Chaparral, cismontane woodland. Micro: on red clay soils of the Pine Hill formation; gabbro or serpentine; open areas. | April – July | FE CE 1B.1 | No Potential: No specialized soils occur on site. |
| <i>Clarkia biloba</i> ssp. <i>brandegeae</i> Brandegee's clarkia | Chaparral, cismontane woodland. Micro: often in roadcuts. | May – July | None None 1B.2 | Not found during the Spring surveys which were timed when this species would be readily observed. |
| <i>Fremontodendron decumbens</i> Pine Hill flannelbush | Chaparral, cismontane woodland. Micro: rocky ridges; gabbro or serpentine endemic; often among rocks and boulders. | April – July | FR SE 1B.2 | No Potential: No specialized soils occur on site. |
| <i>Monardella follettii</i> Follett's monardella | Lower montane coniferous forest. Micro: open rocky serpentine slopes. | June - September | None None 1B.2 | No Potential: No specialized soils occur on site. |
| <i>Rhynchospora capitellata</i> Brownish beaked-rush | Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest. Micro: mesic sites. | July – August | None None 2.2 | Not found during the Spring surveys which were timed when this species would be readily observed. |
| <i>Sidalcea stipularis</i> Scadden Flat checkerbloom | Marshes and swamps. Micro: wet montane marshes fed by springs. | July - August | FE None 1B.1 | Not found during the Spring surveys which were timed when this species would be readily observed. |

***STATUS**

California Native Plant Society Rare and Endangered Plant Lists

| | |
|---|---|
| <p>1A. Presumed Extinct in California</p> <p>1B. Rare or Endangered in California and elsewhere</p> <p>1B.1 - Seriously Threatened in California</p> <p>1B.2 - Fairly Threatened in California</p> <p>1B.3 - Not Very Threatened in California</p> <p>2. Rare or Endangered in California, more common elsewhere</p> <p>2.1 - Seriously Threatened in California</p> <p>2.2 - Fairly Threatened in California</p> <p>2.3 - Not Very Threatened in California</p> <p>Federal Endangered (FE) Any species which is in danger of extinction throughout all or a significant portion of its range.</p> | <p>3. Need More Information (threat ranks not always present)</p> <p>3.1 - Seriously Threatened in California</p> <p>3.2 - Fairly Threatened in California</p> <p>3.3 - Not Very Threatened in California</p> <p>4. Plants of Limited Distribution (threat ranks not always present)</p> <p>4.2 - Moderate Degree of Threats</p> <p>4.3 - Low Degree of Threats or Unknown Threats</p> <p>State Endangered (CE) A native species or subspecies of a bird, mammal, fish, amphibian, reptile or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.</p> |
|---|---|

**APPENDIX D. SPECIAL STATUS ANIMAL SPECIES
CALDWELL PROPERTY - ROUGH & READY QUAD**

| SCIENTIFIC NAME/ COMMON NAME | STATUS* Federal State CDFW | HABITAT TYPES | POTENTIAL TO OCCUR WITHIN PROJECT SITE |
|---|-------------------------------------|--|---|
| <i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle | FT -- -- | Associated with its host plant the blue elderberry shrub (<i>Sambucus mexicana</i>). | No host plants observed on site. |
| <i>Emys(=Clemmys) marmorata marmorata</i> Northwestern pond turtle | -- -- SC | Associated with permanent or nearly permanent water in a wide variety of habitats. Micro: requires basking sites, nests sites may be found up to 0.5 km from water. | No permanent water source on site. |
| <i>Hypomesus transpacificus</i> Delta smelt | FT ST -- | Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Micro: seldom found in salinities > 10PPT. Most often at salinities < 2PPT. | No perennial stream source on site with connectivity to the Sacramento/San Joaquin Delta. |
| <i>Laterallus jamaicensis cotumiculus</i> California Black Rail | -- ST -- | Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Micro: Needs water depths of about one inch that does not fluctuate during the year and dense vegetation for nesting habitat. | No specific water source or vegetation for nesting/foraging habitat on site. |
| Central Valley steelhead and critical habitat | FT -- -- | Populations in the Sacramento and San Joaquin Rivers and their tributaries. | No perennial stream source on site with connectivity to the Sacramento/San Joaquin Delta. |
| <i>Oncorhynchus tshawytscha</i> Central Valley spring- run Chinook salmon and critical habitat | FT -- -- | Adult numbers dependent on pool depth and volume, amount of cover, and proximity to gravel. Water temperatures > 27° C lethal to adults. Micro: federal listing refers to populations spawning in the Sacramento River and tributaries. | No perennial stream source on site with connectivity to the Sacramento/San Joaquin Delta. |
| <i>Oncorhynchus tshawytscha</i> Winter-run Chinook salmon, Sacramento River and critical habitat | FE -- -- | Sacramento River below Keswick Dam. Spawning in Sacramento River but not in tributaries. Micro: requires, cold water over gravel bed with water temperatures between 6 and 14° C for spawning. | No perennial stream source on site with connectivity to the Sacramento/San Joaquin Delta. |
| <i>Phrynosoma coronatum</i> (<i>frontale</i> population) Coast (California) horned lizard | FT -- SC | Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Micro: open areas for sunning, bushes for cover, patches of loose soil for burial and abundant supply of ants and other insects. | No specialized habitat of sandy washes occurring on site. |
| <i>Rana aurora draytonii</i> California red-legged frog | FT -- SC | Lowlands and foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation. Micro: requires 11-20 weeks of permanent water for larval development, must have access to estivation habitat. | No habitat on site with perennial waters and/or riparian vegetation or other dense, shrubby vegetation. |
| <i>Rana boylei</i> Foothill yellow-legged frog | -- -- SC | Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Micro: needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. | No perennial streams/ponds occur on site. |

| Federal Status Definitions | State Status Definitions |
|---|--|
| <p>Endangered (FE) Any species which is in danger of extinction throughout all or a significant portion of its range.</p> <p>Threatened (FT) Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.</p> <p>Candidate (FC) Taxa for which the Service currently has sufficient information on biological vulnerability and threats on hand to support the issuance of a proposed rule to list but issuance of the proposed rule is precluded. Only those species for which there is enough information to support a listing proposal will be called "candidates." These were formerly known as "Category 2 Candidates." There are species for which the Service does not have enough scientific information to support a listing proposal. Both Category 2 and Category 3 no longer exist. The former Category 3 was a mix of non-candidate species either thought to be extinct (3A), taxonomically invalid (3B), or too widespread to be considered at risk (3C).</p> <p>Species of Concern (C1) (FSC) Former Category 1 Candidate now considered a "Species of Concern." Taxa which should be given consideration during planning for projects.</p> <p>Species of Concern (C2) (FSC) Former Category 2 Candidate now considered a "Species of Concern." Taxa which should be given consideration during planning for projects.</p> <p>Proposed (FP) Taxa for which a general notice has been published in a local newspaper and a proposed rule for listing has been published in the Federal Reserve.</p> | <p>Endangered (CE) A native species or subspecies of a bird, mammal, fish, amphibian, reptile or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.</p> <p>Threatened (CT) A native species or subspecies of a bird, mammal, fish, amphibian, reptile or plant that, although, not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter (Chapter 1.4 of the California Fish and Game Code).</p> <p>Rare (CR) A species, or subspecies or variety is rare when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens.</p> <p>Candidate (CC) A native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list.</p> <p>Species of Special Concern (SSC) Native species or subspecies that have become vulnerable to extinction because of declining population levels, limited ranges, or rarity. The goal is to prevent these animals from becoming endangered by addressing the issues of concern early enough to secure long term viability for these species. Bird Species of Special Concern appear in Remsen, 1978.</p> <p>CP = CDFG "fully protected" species (Sec. 4700, Chapt. 6, Sec 5050, Chapt. 2; Div. 5, Chapt. 1 Sec. 5515).</p> |

Mardie Caldwell Property

IPaC Trust Resources Report

Generated March 04, 2016 10:15 AM MST. IPaC v3 0 0

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



U.S. Fish & Wildlife Service

IPaC Trust Resources Report



NAME

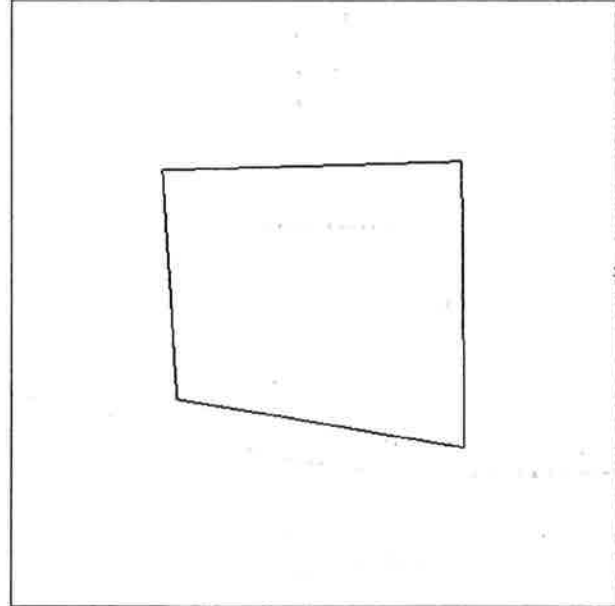
Mardie Caldwell Property

LOCATION

Nevada County, California

DESCRIPTION

BIOLOGICAL INVENTORY FOR THE
2-WAY PROPERTY
PARCEL SPLIT - 15.0 Acres
17860 Cattle Drive, Penn Valley, CA
Surveys: Spring 2016



IPAC LINK

[http://ecos.fws.gov/ipac/project/
WLM6H-PABNR-FRJCX-7VJDS-X2BS2E](http://ecos.fws.gov/ipac/project/WLM6H-PABNR-FRJCX-7VJDS-X2BS2E)

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Critical Habitats

There are no critical habitats in this location

| | |
|--|------------------------------|
| Calliope Hummingbird <i>Stellula calliope</i> | Bird of conservation concern |
| Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0K3 | |
| Costa's Hummingbird <i>Calypte costae</i> | Bird of conservation concern |
| Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JE | |
| Flammulated Owl <i>Otus flammeolus</i> | Bird of conservation concern |
| Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0DK | |
| Fox Sparrow <i>Passerella iliaca</i> | Bird of conservation concern |
| Year-round | |
| Green-tailed Towhee <i>Pipilo chlorurus</i> | Bird of conservation concern |
| Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IO | |
| Lewis's Woodpecker <i>Melanerpes lewis</i> | Bird of conservation concern |
| Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ | |
| Loggerhead Shrike <i>Lanius ludovicianus</i> | Bird of conservation concern |
| Year-round https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY | |
| Long-billed Curlew <i>Numenius americanus</i> | Bird of conservation concern |
| Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S | |
| Nuttall's Woodpecker <i>Picoides nuttallii</i> | Bird of conservation concern |
| Year-round https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HT | |
| Oak Titmouse <i>Baeolophus inornatus</i> | Bird of conservation concern |
| Year-round https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ | |
| Olive-sided Flycatcher <i>Contopus cooperi</i> | Bird of conservation concern |
| Season: Breeding https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN | |
| Peregrine Falcon <i>Falco peregrinus</i> | Bird of conservation concern |
| Season: Wintering https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU | |
| Rufous-crowned Sparrow <i>Aimophila ruficeps</i> | Bird of conservation concern |
| Year-round https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MX | |

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Appendix E . Migratory Deer Ranges Caldwell Property

