

Operations Plan

Cultivation and Operations Plan

Maple Creek Ranch Corporation

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A. PROJECT DESCRIPTION

A.1. Project Location

Maple Creek Ranch Corporation, hereafter referred to as MCR, is the owner of property located within the County of Humboldt near the community of Maple Creek with **APN's 313-145-006, with APPS# 12154** hereafter referred to as **(Site)**. Based on County of Humboldt Geographical Information System (GIS), the parcel is a total of **(420)** acres.

A.2. Land Use and Zoning

The current zoning for the site is **(AE/TPZ)**. Based on the current zoning and the general plan description the sites would be eligible for commercial cannabis cultivation and ancillary support facilities for processing.

A.2.(a) Zoning

On parcels 320 acres or larger in size, in the eligible zoning districts described in 55.4.8.2.1, one additional cultivation area permit of up to one acre each for each one hundred acre increment (e.g. 3 for a 320 acre parcel, 6 for a 600 acre parcel, etc.), up to a maximum of 12 permits, may be issued with a Use Permit, subject to the limitations contained in section 55.4.8.10. No more than 20% of the area of Prime Agricultural soils on the parcel may be utilized for commercial medical marijuana cultivation activities.

A.3. Project Objectives

MCR is proposing 4 Conditional Use Permits (CUP's) for a new cannabis cultivation project in the amount of 4 Acres or 174,240 SF of outdoor cultivation, and 1 Zoning Clearance Certificate (ZCC) for an additional 27,000 SF RRR of outdoor cultivation from APN- 315-011-009/APPS#- 15197 as defined in Humboldt County's Commercial Medical Marijuana Land Use Ordinance (CMMLUO). MCR is also proposing development of a new ancillary support facility (processing/drying) in the amount of 4,800 SF for drying and processing of harvested product, and 6,600 SF of greenhouse nursery. The facilities are to be constructed in accordance with the requirements as spelled out in the CMMLUO and the current adopted building code.

- Obtain 1 Conditional Use Permit (CUP) to allow for new outdoor cannabis cultivation of 43,560 SF/ 1 Acre in accordance with CMMLUO section(s) 55.4.5 - 55.4.14.
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- Obtain 1 Zoning Clearance Certificate (ZCC) to allow for an RRR of outdoor cannabis cultivation of 27,000 SF from APN-315-011-009/APPS#- 15197, in accordance with the CMMLUO.
- Obtain necessary approval to allow for cannabis cultivation ancillary support facility for drying and processing of 4,800 SF in accordance with CMMLUO section(s) 55.4.5 - 55.4.14.
- Obtain necessary approval for 6,600 SF of support nursery facilities
- Obtain necessary approval for 25k MQ Whisper watt diesel generator and 500-gallon diesel storage
- Obtain necessary approval for 200,000-gallon rainwater catchment storage tank
- Necessary approvals for installation of a new well

MCR is proposing to obtain the necessary approvals for MCR's cultivation areas and ancillary facility for the processing of commercial cannabis.

B. PROJECT CONSTRUCTION

B.1. Project Construction

MCR has completed a site plan to outline a strategy for development of the cannabis cultivation sites and ancillary support facilities in accordance with environmental safety and local and state regulations regarding cannabis cultivation.

MCR has contracted with various professional consultants to develop a strategy for development. This strategy outlines procedures for development and provides adequate **setbacks of the cultivation areas in accordance with the standards of the CMMLUO as well as a plan to maintain roads utilized for access of the cultivation area and ancillary support facilities needed for the success of the project in accordance with the Performance Standards- Road Systems in section 55.4.12.1.8.** The strategy outlines measures to maintain roadways with the installation of water bars and run-off outlets (i.e. culverts). The professional consultants involved in this process are licensed engineering firms as well as licensed professional foresters, and water professionals to consult with on the construction of the project to ensure the environmental and building code requirements outlined by local and state regulatory agencies are adhered to.

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The outdoor cultivation areas totaling 174,240 SF or 4 acres, will be constructed to utilize existing open areas and not infringe upon forested areas. The cultivation area will be developed utilizing native soils and planting directly in the ground. Organic fertilizers and amendments will be purchased from a local provider and irrigation and fertigation systems will be utilized to ensure water and fertilizers will be applied at agronomic rates. Water meters will be installed, and usage will be logged and submitted annually to regulatory agencies.

B.2. Energy Source

MCR is proposing to implement diesel generator powered electrical systems to provide for the sites electrical usage. **The supplied power source will be provided by a 25kw Whisper Watt diesel generator with 500 gallons of diesel storage and backup power source will be supplied by solar power supply installed on the roof of the proposed drying/processing facility.**

The generator will be installed in an enclosed generator shed located near the proposed processing facility and depicted in the site plan. The shed will be constructed to attenuate the noise produced by the generator to adhere to the noise requirements for nearby sensitive habitat of Northern Spotted Owl. The shed installed on a concrete slab and will be insulated with soundproofing materials to accomplish this task. Soundproofing materials used to meet the noise attenuation requirements will include but not be limited to, fiber sound board, foam insulation, foam paneling, etc.

Diesel storage for the generator will be stored in above ground 500-gallon diesel metal storage tank near the processing facility with required setbacks from buildings adhered to, barriers will be installed around the perimeter of the tank to prevent vehicles or equipment from damaging the tank. The tank will be on a raised stand and sitting inside of a secondary containment basin. The secondary containment basin will be rated at 125% of the fuel tank storage to capture and contain all fuel in the unlikely event of a fuel tank failure or accident. The tank, stand, and secondary containment basin will be installed on a slab and under the cover of a roof.

Electrical equipment to be utilized will be installed by a licensed electrician in accordance with current adopted National Electrical Code Standards. Power requirements will be established based on the equipment utilized and will include but not be limited to, irrigation pumps, security systems, egress lighting, support and nursery facilities, dehumidifiers, nursery greenhouse lighting etc.

Solar is proposed as a backup power source for a number of reasons and include but are not limited to, planned power outages, fuel availability, generator failure or maintenance, weather, etc.

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All electrical equipment, nursery greenhouse lighting, processing and support facilities will have the capability of being operable on generator supplied power and/or solar supplied power.

B.3. Water Source

MCR is proposing to install a well near the cultivation area to supply the main portion of the projects water needs. Until approvals are issued the well will not be constructed, and in the unlikely event that the proposed new well is found to be hydrologically connected, then water will be trucked from an approved well on a neighboring parcel under the Maple Creek Ranch ownership. The neighboring parcel is **APN: 313-146-010**

MCR has contracted with **Pacific Watershed Associates (PWA)** to file water compliance components for the project including if needed, a **Notification of Lake or Streambed Alteration (LSA 1602)** with the California Department of Fish and Wildlife for surface water diversion. MCR will also enroll in **NCRWQCB Cannabis Cultivation Waste Discharge Regulatory Order (Order No. R1-2015-0023)** upon project approval. MCR will implement a **Water Resource Protection Plan (WRPP)** consistent with regulatory requirements. If needed MCR will file for a **Small Use Irrigation Registration (SUIR)**.

In addition to the installation of the proposed well, MCR plans to utilize **rainwater catchment and install a 200,000-gallon storage tank and is seeking conditional permitting to do so. Additionally, MCR plans to develop a smaller 50,000 gallons tank farm near the cultivation site. These tanks will be 5,000-gallons each and constructed of hard plastic and will serve primarily as fertigation and irrigation supply reservoirs. MCR will designate one of the 5,000-gallon tanks for fire suppression usage only.**

B.4. Soils Management Plan

MCR plans to utilize the native soils located within the project location and implement standard cultivation techniques as pertains to the utilization of the existing soils. Minimal excavation, grading and tillage of the proposed cultivation site will be conducted upon approval to maximize the sites potential. All soils originating from the excavation and grading process will be evenly distributed throughout the proposed cultivation area as to alleviate the need to remove and or dispose of the soils during the earth working process. During the initial development process amendments will be purchased from local providers and applied to the cultivation area at agronomic rates to condition the native soils and promote healthy crop growth. Periodically additional amendments will be brought in on an as needed basis. The amendments and frequency of application will be cataloged and recorded manually onsite and transposed digitally at the end of the growing cycle. Any disposal of onsite soils will be taken to an approved waste management facility within the County of Humboldt.

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1. Transportation/Disposal Off-Site

In the unlikely event of disposal, excavated soil will be loaded directly onto trucks for off hauling to an approved waste management facility within the County of Humboldt. The soil transport vehicles will be equipped with plastic sheeting and will be loaded using a standard front-end loader. After the soil is loaded into the transport trucks, the soil will be covered with secured tarps according to all applicable Department of Transportation regulations to prevent soil from spilling during transport to the waste management facility. Prior to departure, the operations manager will ensure that loose soil debris is removed from trucks via dry brushing the tires and truck body.

If excavated impacted soil is stockpiled on-site prior to off-hauling, it will be placed on a flat, rocked surface and covered with plastic. The sheeting shall be held down with rock-filled bags cross-tied into a weighted net.

2. Winterization

During the off season, the proposed cultivation area will be planted with cover crops and areas of high risk for run-off will be lined with hay berms and or covered with hay to help minimize the impacts to the surrounding environment and watershed.

B.5. Environmental Protection

Fertilizer and pesticide runoff are a threat to our watersheds and our way of life, procedures will be implemented to minimize these effects on the watershed and environment. Hay waddles will be utilized to control runoff that may pose the threat of discharging into the watershed. Monitoring points will be established based on the contours and slope of the developed site. Water currently being used is metered and recorded and submitted annually to regulatory agencies.

The cultivation areas to be developed will be lightly graded to provide a workable surface for agricultural crop production. The grading work is to be conducted by a licensed contractor in accordance with approved grading or earthwork plans. MCR will work with a licensed engineer to develop grading plans. Site and road development will implement best practices to minimize erosion and runoff, such as out sloping of the roads, installation of water bars, culverts, and rock to maintain the integrity of the site.

Environmental review of the site has been conducted in accordance with County and State requirements as pertains to the **California Environmental Quality Act (CEQA)** by **Tami Camper of Trans-Terra**

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Consulting, and supporting Botanical and Wetland studies were performed by Kyle Wear, both of which are professionals qualified to perform the necessary environmental studies needed. The required studies will be attached as supplemental to this application. MCR is committed to environmental conservation and will implement best practices based on the recommendations outlined in the environmental studies to mitigate potential negative environmental impacts.

B.6. Hazardous Area Protection

MCR by way of historical geological, and hydrological mapping has identified no known hazardous areas on the proposed project site regarding the following:

- Areas subject to inundation or flooding
- Steep or unstable slopes
- Expansive (clay) soils
- Earthquake Faults
- Hazardous waste or other substance sites

Whereas the abovementioned hazardous areas do not exist on the proposed site, MCR is proposing the installation of a **Fertilizer Storage Area (FSA)**. **The FSA will be located inside of the proposed processing/drying facility and will encompass 200 SF.** All installations of the proposed equipment will be installed in compliance with local building code and will not pose a threat to any hazardous areas listed above. For more information about the **FSA**, and containment and hazardous protections, see section **E.11 and E.12**.

B.7. Sensitive Habitat Areas

MCR has performed a complete biological, and hydrological review of the proposed project site and identified and notated on the project mapping the sensitive areas. For more information see **attached “Botanical and Aquatic Survey for Maple Creek Property 313-145-006”**. Additionally, MCR has complied with requirements of the County, and performed an **Initial Study in compliance with CEQA**.

B.8. Irrigation Plan

MCR is committed to responsible farming practices, resource protection, and land stewardship. Necessary measures and procedures will be implemented that align with the local and state regulations regarding cannabis cultivation. Regulations outlined for adequate water storage and forbearance periods for water diversion will be strictly adhered to. MCR is working with PWA, the SWQCRB, and the Department of Fish and Wildlife (DFW) to design and execute a water storage and resource protection

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plan to help minimize negative impacts on the watershed. Water usage and conservation techniques will be implemented to utilize water efficiently. **Water storage will be developed by way of a (10) 5,000-gallon hard tanks and utilize water provided by a proposed new well installed near the cultivation area, and 200,000-gallon rain catchment water storage tank near the proposed nursery and drying/processing facilities.** Commercial water meters will be installed in line on both the point of diversion and at the outlet of storage tanks that lead to the cultivation areas. Drip irrigation system will be utilized to deliver water at agronomic rates to more accurately monitor usage for monitoring and recording purposes. Irrigation of the site will take place in the early morning or evening, as to provide maximum soil saturation and limit evaporation due to excessive heat caused by daytime temperatures.

B.9. Current and Projected Water Use

The cultivation cycle for the proposed project is set to begin in early April and end in late October. More on this cycle is spelled out in the cultivation and operations plan.

Projected water usage is estimated at 80,000 gallons a month and yearly usage at 800,000 gallons. This figure is based on projected usage on 10,000 SF of cultivation area.

B.10. Water Metering and Usage Monitoring

Commercial grade, analog water meters will be installed at outlet points from water storage tanks that supply the irrigation system for all cultivation areas in accordance with State regulations. In addition, on site water usage logs will be maintained and recorded daily. The water usage logs will be transposed digitally monthly and provided to PWA for monitoring and recoding requirements for the SWQCRB and NCRWQRB.

B.11. Access Roads

Currently the site is serviced by two County maintained roads, Maple Creek road and Butler Valley road. From these roads there is a short driveway entrance that is rocked and gated. **A Road Assessment has been performed (See attached *Road Evaluation Reports*) and the County maintained access roads meet the Category 4 Road Standards, Standard 2**

In addition to existing access to the site, MCR is proposing to improve existing legacy ranch roads that serve as access to cultivation site. Some minimal grading is required to accomplish this, and MCR is seeking the necessary approvals to perform this work. Additionally, for access to the cultivation area and ancillary support facilities, MCR is proposing the development of a new access roads and is seeking the

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necessary approvals and allowances. The existing and proposed new cannabis use roads are outlined in the site plan.

Standard 2

Unless otherwise specified, roads providing access to the parcel(s) or premises must meet or exceed the Category 4 road standard (or same practical effect). The application package must demonstrate compliance with this requirement in one of the following ways:

- 1) parcel(s) served exclusively by roads which are paved publicly maintained or private roads where all portions of the paved road system feature a center-line stripe and two ten-foot-wide travel lanes require no further analysis only a notation on the plans that the access to the site meets this requirement, or
- 2) parcel(s) served by roads without a centerline stripe must submit a written assessment of the functional capacity of the road segments. If the assessment reveals that all road systems meet or exceed the Category 4 standard (or same practical effect), then no additional review is necessary. Documentation of self-certification shall be produced to the satisfaction of the County; including use of appropriate forms where provided. The County reserves the right to independently verify general compliance with this standard.

B.12. Slope

MCR, by way of PWA and Dirty Business Soil Analytics, has performed a slope analysis of the proposed new cultivation site and the areas to be utilized meet the requirements of this section. **Slope is not exceeding 15%.**

B.13. Prime Agricultural Soils

MCR has performed the necessary prime agricultural studies in accordance with the requirements from **section, 55.4.8.2.1, Approvals for New Outdoor and Mixed-Light Cultivation Areas**. Two studies were performed, the first study was performed by PWA which provided findings of **14.01 acres of prime agricultural soils, see attached “Prime soil extent mapping on Humboldt County APN’s 313-146-004 and 313-145-006**. The second study was performed by Dirty Business Soil Analytics and focused on areas not previously surveyed during the initial PWA study. The second study provided additional findings of **6.7 acres of prime agricultural soils, see attached “Prime Agricultural Soil Assessment, Maple Creek Ranch Corporation”**. **Combined totals from both studies equates to 20.8 acres of prime agricultural**

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soils, and in accordance with the County's CMMLUO, 20% of that total equates to 4.16 acres of eligible cultivation area. Whereas the total eligibility is 4.16 acres, MCR is only seeking approvals for 4 acres.

B.14. Setbacks

The site mapping generated will be in accordance with all setback requirements outlined in the CMMLUO.

C. Cultivation and Operations Plan

C.1. Description of Cultivation Activities

The cultivation practices that are to be implemented come from years of experience in the industry. MCR plans to contract with a local farm operations and management company that specializes in cannabis cultivation. The plants will be cultivated in open air and planted in the ground in native soils. Soil amendments will be purchased from a local provider. The farm operations and management company will implement outdoor cultivation techniques, and best practices.

MCR by way of their farm management contractor, will implement established cultivation methods and industry specific techniques for cultivating cannabis.

MCR will source rooted clones or seed stock with verified genetics from a licensed nursery. Clones will be provided to MCR in three-inch (3") pots, and seeds will be purchased in bulk allotments. The clones and/or seeds will be transported to the cultivation site and transplanted into the nursery area to acclimate prior to being planted in the cultivation area where they will be grown to maturity.

After clones and/or seeds are transplanted into the cultivation area, irrigation and fertigation will commence. Custom commercial irrigation systems affixed with a commercial grade water meters will be utilized for the fertigation requirements of the crop. **Monitoring and recording procedures will be implemented for tracking water and fertilizer as well as pesticide usage as required by the State Water Resource Control Board (SWRCB) and the Department of Pesticide Regulation (DPR). MCR will implement a Water Resource Protection Plan (WRPP) in consultation with a PWA to address water needs for the project.**

C.2. Cultivation Cycle(s)

April 1st - July 1st : Acquire clones/seeds from Nursery, Transplant and Vegetative Phase

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All the plants to be cultivated on-site will originate as a clone and/or seed from a mature healthy plant stock in the vegetative stage or seed stock.

After approval of the genetics to be used for the cultivation cycle, employees of the operations and management company will commence the transplanting of the clones and/or seeds into the cultivation area where they will remain until maturity. At this point in the cultivation cycle it is imperative that the plants receive high amounts of nitrogen for rapid new growth development. The operations and management team have over the years developed a proprietary blend of fertilizers and supplements that will be used to accomplish this task. All fertilizers and supplements to be used will follow local and state regulations regarding application at agronomic rates and safe handling procedures.

June 1st- July 1st : Crop Irrigation and Fertigation, Pesticide and Fungicide Control, Start clones/Seeds for second crop

The plants will be irrigated using a pump driven irrigation system with adjustable emitters that can be adjusted from 0-10 gallons a minute. This system is specifically designed for large scale crop irrigation and is effective in delivering precise amounts of fertilizer at agronomic rates to each plant. The irrigation system will be affixed with a commercial grade water meter for monitoring and recording purposes in conjunction with the SWRCB's regulatory requirements. Pesticide and Fungicides will be applied by utilizing sprayers at agronomic rates and amounts will be recorded.

July 1st – October 1st : Crop harvest, Replant, Irrigation and Fertigation, Pesticide and Fungicide Control

The first crop will be harvested, and the second crop will be planted. The plants will be irrigated using a pump driven irrigation system with adjustable emitters that can be adjusted from 0-10 gallons a minute. This system is specifically designed for large scale crop irrigation and is effective in delivering precise amounts of fertilizer at agronomic rates to each plant. The irrigation system will be affixed with a commercial grade water meter for monitoring and recording purposes in conjunction with the SWRCB's regulatory requirements. Pesticide and Fungicides will be applied by utilizing sprayers at agronomic rates and amounts will be recorded.

October 1st – November 1st : 2nd Crop harvest, Processing, and Farm Winterization

During this time the crop will be nearing the end of its cycle and harvested upon ripeness. Pesticides and fungicides will no longer be applied, and irrigation of the crop will continue until the crop is harvested. Fertilization of the crop will also cease as the leaching of the of nutrients is desired. Upon harvesting the crop, maintenance repairs and non-essential equipment will be broken down and stored for the off season. The final harvest will occur by mid- October and the farm will be decommissioned for the off

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season, plants will be removed cut down and hung to dry in the proposed 4,8000 SF drying and processing facility onsite. Upon completion of the harvest root balls from the prior cycle will be removed from the cultivation area and composted. All trash will be bagged and brought to an approved landfill within the county of Humboldt. After the site has been cleaned and prepared for the winter, the cultivation area will be amended with beneficial microbial inoculants and cover crops to maintain soil condition. Winterization of the farm, and equipment repairs will be made in preparation for the following season.

It is important to understand that these time frames are contingent on a variety of factors, but not limited to availability of clones/seeds from a permitted nursery, inclement weather, natural disaster, wildfires, drought and theft.

D. Processing Plan

D.1. Processing Location

MCR is proposing permitting for an onsite processing facility. The facility will provide adequate space for minimally processing product produced onsite (i.e. Drying and Bucking). The proposed facility is 4,800 SF and will be designed to adhere to all local and state building code requirements for the facility. The facility will be utilized for drying, curing, processing and storing of product ahead of sale to a licensed distributor or manufacturer.

MCR will contract with a licensed engineer for the design of the proposed 4,800 SF facility and a licensed contractor for the construction of the facility.

D.2. Description of Harvest Activities

Harvesting of the crop will be executed at the discretion of the operations and management teams lead agent at various time throughout the year. All determinations will be based on scheduling and crop readiness.

Harvesting will be performed by hand and will employ the use of seasonal laborers. The process is long and repetitious and requires minimal skill or training. The plants will be harvested by lot and batch number and transported to the proposed drying and processing facility where they will be hung on a custom drying rack designed to allow even distribution of the product for controlling air movement and humidity levels. The hanging product will be categorized by lot and batch number and all steps will be taken to comply with State track and trace regulations. By ensuring all lot numbers are kept separate the management can better estimate total yields and record product for tracking purposes during the processing stage.

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After the drying of the harvested product is completed, the process of removing the cannabis from the stem will begin. This process is also known as “Bucking”. Before processing can begin each lot must be completely bucked and a gross weight will be recorded for each lot. All waste product from each lot will be collected, weighed, recorded, and composted. The processing manager will oversee employee supervision, production deadlines, product weight recording, and inventory. Inventory and processing records will be maintained both in paper form and digital form, by way of spreadsheets generated by the management and operations agent and uploaded to the approved software program for tracking purposes.

D.3. Description of Processing Activities

After bucking is completed and gross weight has been recorded and entered into the track and trace platform, processing will begin. MCR will contract with a licensed processor or manufacturer to accomplish this task at which point a product manifest will be generated and product transfers will occur.

D.4. Staffing and Hours of Operation

MCR by way of their contracted management and operations team will employ **eight (8) full time employees** throughout the year to carry out cultivation tasks, and **ten (10) part time or seasonal employees** for harvesting and processing. The operations and management team provide safety trainings consistent with State agricultural laws and workers compensation coverage as well as manage payroll. Work hours will be Monday – Saturday from 8am to 5:30pm with adequate rest periods consistent with State labor laws during the workday regarding breaks and time off.

D.5. Facilities Overview

MCR’s proposed 4,800SF processing facility will adhere to all local and state building code requirements. **Portable Toilet and handwashing facilities will be provided onsite**, antibacterial soap to prevent contamination, and disposable paper hand towels. Signage will be posted within the restroom facilities in compliance with the Department of Health’s regulations.

MCR will provide non-communal purified drinking water via bottled water purchased from a local store.

D.6. Off Street Parking

All off street parking for the proposed processing facility will adhere to the requirements outlined in the Humboldt County Zoning Regulations section 313-109.1.

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For the proposed project MCI will develop the following parking and loading spaces in accordance with the requirements of Humboldt County Zoning Regulations off-street parking **Section 109.1.4.4.3**

- 5 standard parking spaces measuring 8'x18'
- 1 disabled/handicap parking space measuring 14'x18'
- 1 loading zone measuring 10'x60'

109.1.3.1

Location of Off-Street Parking- Required parking facilities shall be located on the same building site and conveniently proximate to the use or uses they serve, and shall be designed, located, constructed and maintained so as to be fully and independently usable and accessible at all times. Exceptions to the location requirement for parking facilities for commercial uses may be allowed if it is found that:
(Former Section CZ#A314-26(C)(1))

109.1.3.2.1

Each normal size parking space shall be not less than eight feet (8') wide, eighteen feet (18') long and contain seven feet (7') of vertical clearance;
(Former Section CZ#A314-26(C)(2)(a))

109.1.3.3

Required Off-Street Parking

Off-street parking facilities shall be provided for any new building constructed and for any new use established.

(Former Section CZ#A314-26(C)(3))

109.1.3.7

Lighting

Any lights used to illuminate the parking spaces or driveways shall be designed and located so that direct rays are confined to the property where the parking is located.

(Former Section CZ#A314-26(C)(7))

109.1.3.8

Parking Facilities for the Physically Handicapped Facilities accommodating the general public, including but not limited to auditoriums, theaters, restaurants, hotels, motels, stadiums, retail establishments, medical offices and office buildings shall provide parking spaces for the physically handicapped in compliance with the Humboldt County Code and the following provisions: (Former Section CZ#A 314-26(C)(8)) 109.1.3.8.1 The handicapped parking spaces shall be fourteen feet (14') wide and eighteen feet (18') long. (Former Section CZ#A314-26(C)(8)(a))

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109.1.3.8.2

Parking facilities containing six (6) through forty (40) spaces, inclusive, shall include one (1) handicapped parking space permanently signed with the International Symbol of Accessibility. One handicapped space shall be provided for each additional forty (40) spaces or portion thereof.
(Former Section CZ#A314-26(C)(8)(b))

109.1.4.4.3

Warehouse. The higher of either: one (1) parking space for every (4) employees; or one (1) parking space for each 2,500 square feet of gross floor area. (Former Section CZ#A314-26(D)(4)(c))

D.7. Security Plan

In addition to the previously outlined security measures MCR's operations and management agent will implement procedures to properly secure the processing facility during and after hours of operation. Only management will be authorized in these locked areas to mitigate potential theft. All product at the end of the shift will be returned to these locked areas and remote monitoring via closed circuit video surveillance will be utilized for both operational and non-operation hours.

D.8. Safety Procedures

The management and operations agent will impose strict policy regarding safety. All employees will be always required to wear Personal Protective Equipment (PPE), such as but not limited to; closed toe shoes with non-skid bottoms safety glasses and latex gloves. Safety precautions will be further outlined by the management team in the employee orientation.

D.9. Emergency Procedures

MCR's contracted farm operations and management agent will implement emergency protocols for the sites. Locations for employees to meet in the event of an emergency, exit routes, and strategies for defense from natural disasters (i.e. earthquakes, inclement weather, and wildfires,) will be developed and employees will be provided with this information in the orientation process. Basic instructions will be outlined in an **"Emergency Action Plan"**. (See Attached ***Emergency Action Plan***)

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E. FERTILIZER STORAGE AND HAZARDOUS MATERIALS MANAGEMENT

E.1 Fertilizer Storage and Application Procedures

- All fertilizers will be stored separate from other chemicals in dry conditions.
- Extra care will be given to concentrated stock solutions by providing secondary containment for all authorized products.
- Secondary containment will be sized at 125% of the total amount of fertilizer/pesticides being stored in that containment.
- All products will be stored off the ground.
- Where necessary pallets will be utilized to keep large drums or bags off the floor.
- The storage will be locked at all times to prevent unauthorized use of fertilizers, as well as the chance of accidental spills, theft, and to deter wildlife.
- Fertilizer storage area will be clearly labeled as a **Fertilizer Storage Area (FSA)**.
- Labels of the contents of the fertilizer storage area will be posted on the door of the building to alert emergency responders about the contents of the FSA and other products present during an emergency response to a fire or a spill.
- MSDS and Emergency Action Procedures will be clearly marked and located in the onsite in the FSA.
- Adequate access to the FSA will be provided for deliveries and making the storage area secure, and to allow getting fertilizers and other chemicals or personnel out in a hurry.

E.2 Fertilizer Application and Safe Handling

- Approved fertilizers and pesticides are to be handled in a manner as to not cause harm to the applicator or the environment.
- All fertilizers and pesticides are to be applied at a rate which is consistent with its labeling.
- Only CALEPA, and DPR compliant products will be utilized onsite.
- Personal Protective Equipment (PPE) is required anytime fertilizers or pesticides are handled or applied, and PPE is to include, but are not limited to the following items: gloves, eye protection, face shields, respirators, and dust masks.

E.3 Storage Location

- Fertilizer will be stored in their original containers unless damaged.
- Labels will be visible, readable and in plain sight.
- Containers are not permitted to come into direct contact with floor.

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- All containers will be stored in an up-right position and secured to prevent from falling over.
- Aisles or walkways will be kept clear at all times and made wide enough to comfortably accommodate workers or emergency personnel.
- Containers are not permitted to be stacked or crowded on shelves or pallets.
- Partially used containers are to be resealed and returned to storage.
- All open bags are to be sealed inside another larger container, labeled and placed in secondary containment.
- Damaged containers are to be immediately repackaged, labeled, and stored in another larger container and place in secondary containment.

E.4 Fire Prevention and Suppression

- Fire extinguishers will be clearly marked and located within the FSA.
- Emergency contact information and procedures will be located within the FSA.
- Smoking is strictly prohibited within the FSA as well as within 50ft of the FSA.
- Flammable or combustible products will be clearly labeled as so and be stored separately from non-flammable or non-combustible products.

E.5 Inventory and Recordkeeping

- Inventory will be actively maintained as chemicals are added or removed from the FSA.
- Containers will be dated when purchased.
- Outdated materials will be removed and disposed in accordance with proper disposal guidelines set by the state pesticide and fertilizer regulating authority.
- Regular recording of inventory will be conducted to prevent the accumulation of excess material.
- Application or usage of fertilizers or pesticides will be recorded on a regular basis.

E.6 Monitoring of FSA

A monthly inspection of the FSA will be conducted for the following:

- Signs of container corrosion or other damage.
- Spill kit re-stock (if needed).
- Faulty ventilation, electrical, and fire suppression equipment.
- Updates to the Emergency Action Plan.
- All required postings are current and clearly visible.

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E.7 Security

- The FSA will be locked, and access restricted to unauthorized personnel.

E.8 Signage

- The contents of the FSA will be clearly posted at the entrance.
- Warning signs will be used as needed to alert personnel.
- Emergency contact information will be posted within the FSA as well as in the caretakers living quarters.

E.9 Spill Prevention and Preparedness

Opening fertilizer product containers, measuring amounts, and transferring fertilizer to the delivery system involves some level of risk from spills.

- Secondary containment will be utilized for fertilizer stock.
- Spill clean-up materials will be readily available for liquids (e.g., absorbent materials) and solids (e.g., shovel, dustpan, broom, and buckets)

E.10 Delivery System

- Fertilizers are to be mixed at a rate consistent with the manufacturers labeling.
- Emitters and commercial grade water meters are used to precisely calculate amounts of fertilizers and water applied to the crop.
- Gas powered, or solar powered electrical pumps will provide the irrigation system with the solution for the crop.

E.11 Hazardous Waste and Materials Disposal Plan

All spent materials utilized for the construction and operations of the proposed project will be removed and transported to an authorized waste management facility within the County of Humboldt. The preferred location for disposal is **Humboldt Waste Management in Eureka, CA**. All materials used for fertigation or pest and disease control will be triple rinsed and drained into fertigation and pest or disease control equipment and used in the next application to the crop. There is no domestic trash or waste on site as there is no domestic residence. Trash from daily operations and employee areas will be bagged onsite and removed weekly and transported to the above-mentioned waste management facility. Solid or human waste will be captured by utilizing portable facilities maintained by **Six Rivers Portable Toilets in Blue Lake, CA**. Operator will maintain service records and receipts for these facilities

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in accordance with State agricultural field sanitation laws and regulations. Non-usable plant materials will be composted onsite and amended into the soils the following year.

E.12 Hazardous Material Containment

For areas and equipment utilized that pose a potential threat to the environment, (i.e., gas powered pumps, sprayer cleanout, FSA, etc.) secondary containment measures will be implemented to mitigate potential exposure to the environment. **Secondary containment will be calculated at 125% of the total volume of the Hazardous material stored or utilized.**

E.13 Safety Procedures

MCR plans to contract with a local farm operations and management company that will implement farm safety requirements, trainings, and certifications that have been adopted by the state. Currently, the Occupational Safety and Health Administration (OSHA) has minimal safety requirements that must be adhered to for those seeking state licensing.

All employees will be provided with an orientation of the site and receive a reference manual that will outline safety precautions, emergency contacts, Personal Protective Equipment (PPE) requirements, locations of medical equipment, hand wash/eye wash stations, and bathroom facilities. Employees will always be monitored by the site supervisor and injury occurrences will be recorded and reported immediately. The farm operations and management company will have private liability insurance and state worker's compensation insurance that will cover any unfortunate occurrences.

E.14 Emergency Procedures

MCR's contracted farm operations and management agent will implement emergency protocols for the site. Locations for employees to meet in the event of an emergency, exit routes, and strategies for defense from natural disasters (i.e. earthquakes, inclement weather, and wildfires,) will be developed and employees will be provided with this information in the orientation process. Basic instructions will be outlined in an **"Emergency Action Plan"**. (See Attached *Emergency Action Plan*)

F. PRODUCT TESTING AND DISTRIBUTION

F.1 Product Testing

MCR will contract with a state certified testing laboratory to perform product testing requirements as outlined by the States regulations. The testing will include a complete breakdown of the product and will be used to determine the following:

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- Pesticides
- Molds and/or Microbial contamination
- Potency, CBD, THC, and Terpene content
- Residual Solvents
- Mycotoxin

Testing will occur throughout the cultivation cycle, and when the crop is harvested. MCR will implement liquid chromatography analysis to determine the abovementioned data. Samples will be submitted in person to a State licensed testing facility and records of the test results will be maintained by the laboratory and MCR's operations agent for one year. All product that test below the acceptable allowances will be noted and destroyed.

F.2 Product Inventory and Tracking

MCR will adhere to County and State requirements by enrolling in an approved track and trace program

F.3 Product Distribution

MCR will use a State licensed distributor for the transportation and distribution of processed product to licensed dispensaries throughout the State of California in accordance with the requirements outlined in the State regulations. Through approved software the operator will be able to issue a transportation manifest. This manifest is required for each point of sale and will be recorded in the distribution master log.

The lead operator and processing management team will be responsible for preparing the product for distribution. The management team will ensure that outgoing product inventory coincides with the distribution manifest and the master log. The distributor will be responsible for maintaining the manifest which will include the following information:

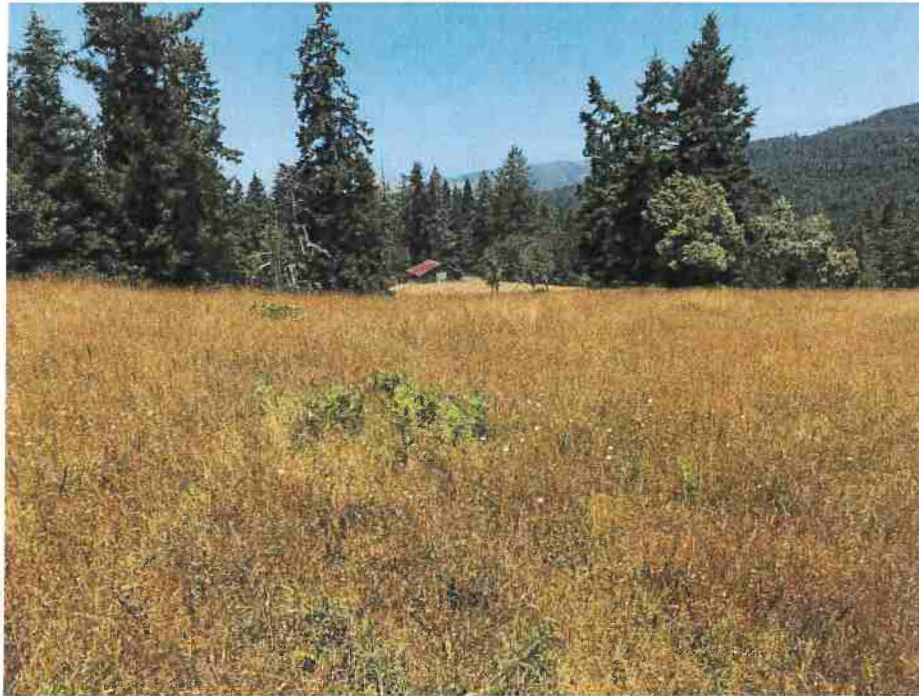
- Origin of sourced product
- Product type
- Condition of received product
- Product weight
- Travel routes
- Date and time of departure
- Date and time of arrival

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G. Attachments

Biological Studies

BOTANICAL AND AQUATIC RESOURCES SURVEY



Maple Creek Ranch (APN: 313-145-006)

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- A. Special Status Plant Scoping List
- B. Survey Route Map
- C. Plant List
- D. Representative Photos
- E. Wetland Determination Dataforms

SUMMARY

A survey for sensitive botanical and aquatic resources was conducted on a portion of the Maple Creek Ranch (APN: 313-145-006) on July 19, and August 18, 2019.

No special status plants or natural communities were observed however, because of the relatively late timing of the survey, it is recommended the access road from Maple Creek Road to the project area be surveyed for Howell's montia in March or April prior to any grading or placing of additional rock on the running surface.

There are several patches of gorse, a highly invasive species in the project area. It is recommended the population be controlled to prevent further spread.

Several seasonal wetlands were mapped adjacent the potential cultivation areas that require 100-foot setbacks from development.

1. INTRODUCTION

This report presents the results of a botanical and aquatic resources survey conducted on a potential cannabis cultivation site on the Maple Creek Ranch (APN: 313-145-006). The purpose of the survey was to identify special status plants, plant communities, wetlands, and non-wetland waters to establish appropriate setbacks from development.

2. DEFINITIONS

2.1 Botanical Resources

Special Status Plants

Special status plants include taxa that are listed under the Endangered Species Act (ESA) and/or the California Endangered Species Act (CESA), in addition to plants that meet the definition of rare or endangered under the California Environmental Quality Act (CEQA). This includes plants with California Rare Plant Ranks (CRPR) of 1A, 1B, 2A, or 2B or other species that warrant consideration based on local or biological significance.

Special Status Plant Communities

Special status plant communities are communities with limited distribution that may be vulnerable to environmental impacts. Natural Communities recognized as sensitive are provided on the Sensitive *Natural Communities List* (California Department of Fish and Wildlife 2018). The list is based on the vegetation classification in *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009). Natural communities with G or S ranks of 3 or lower are considered sensitive. However, they may not warrant protection under CEQA unless they are considered high quality. Human disturbance, invasive species, logging, and grazing are common factors considered when judging whether the stand is high quality and warrants protection.

2.2 Aquatic Resources

Waters of the United States

Waters of the United States are regulated by the U.S Army Corps of Engineers (Army Corps) under the Clean Water Act. Waters of the United States include, but are not limited to, territorial seas, waters used for interstate or foreign commerce and their tributaries, and waters adjacent to the aforementioned, including wetlands.

Army Corps jurisdiction in waters such as creeks and rivers includes the area below the ordinary high water mark, which is the line on the bank established by fluctuations of water that leave physical characteristics such as a distinct line on the bank, shelving, destruction of terrestrial vegetation, and presence of debris.

The Army Corps defines wetlands as:

“...areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

Waters of the State

Waters of the state are regulated by the State Water Resources Control Board (State Water Board) under the Porter-Cologne Water Quality Control Act. Waters of the state are defined as:

"..... any surface water or groundwater, including saline waters, within the boundaries of the state."

Waters of the State includes water in both natural and artificial channels.

The Water Boards defines an area as wetland as:

“An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation.”

Streamside Management Areas

The Humboldt County General Plan (Humboldt County 2017) recognizes Streamside Management Areas (SMAs) along all streams, which are defined as:

“100 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of perennial streams.”

“50 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of intermittent streams.”

3. ENVIRONMENTAL SETTING

Project Location

The parcel is located along Maple Creek Road approximately 7.5 miles southeast of Korb on the Korb USGS quadrangle (Section 30, T5N, R3E) (Figure 1).

Soil, Topography, and Hydrology

The soil type mapped on most of the study area is Lepoil-Candymountain complex, 2-15 % slopes (United States Department of Agriculture, Natural Resource Conservation Service 2019). This soil type is composed of marine deposits derived from sedimentary rock. The study area ranges from flat to approximately 15% slopes. The elevation ranges from approximately 700-800 feet above sea level. The study area includes wetlands in the Maple Creek and Mad River watersheds.

4. METHODS

The botanical survey and wetland delineation were conducted on July 19, 2019 and August 18, 2019 by Kyle Wear, M.A. Mr. Wear has over 20 years of experience conducting floristic surveys and other botanical work in northern California and over ten years of experience conducting wetland delineations. Mr. Wear is also trained in wetland delineation by the Wetland Training Institute.

4.1. Botanical Survey

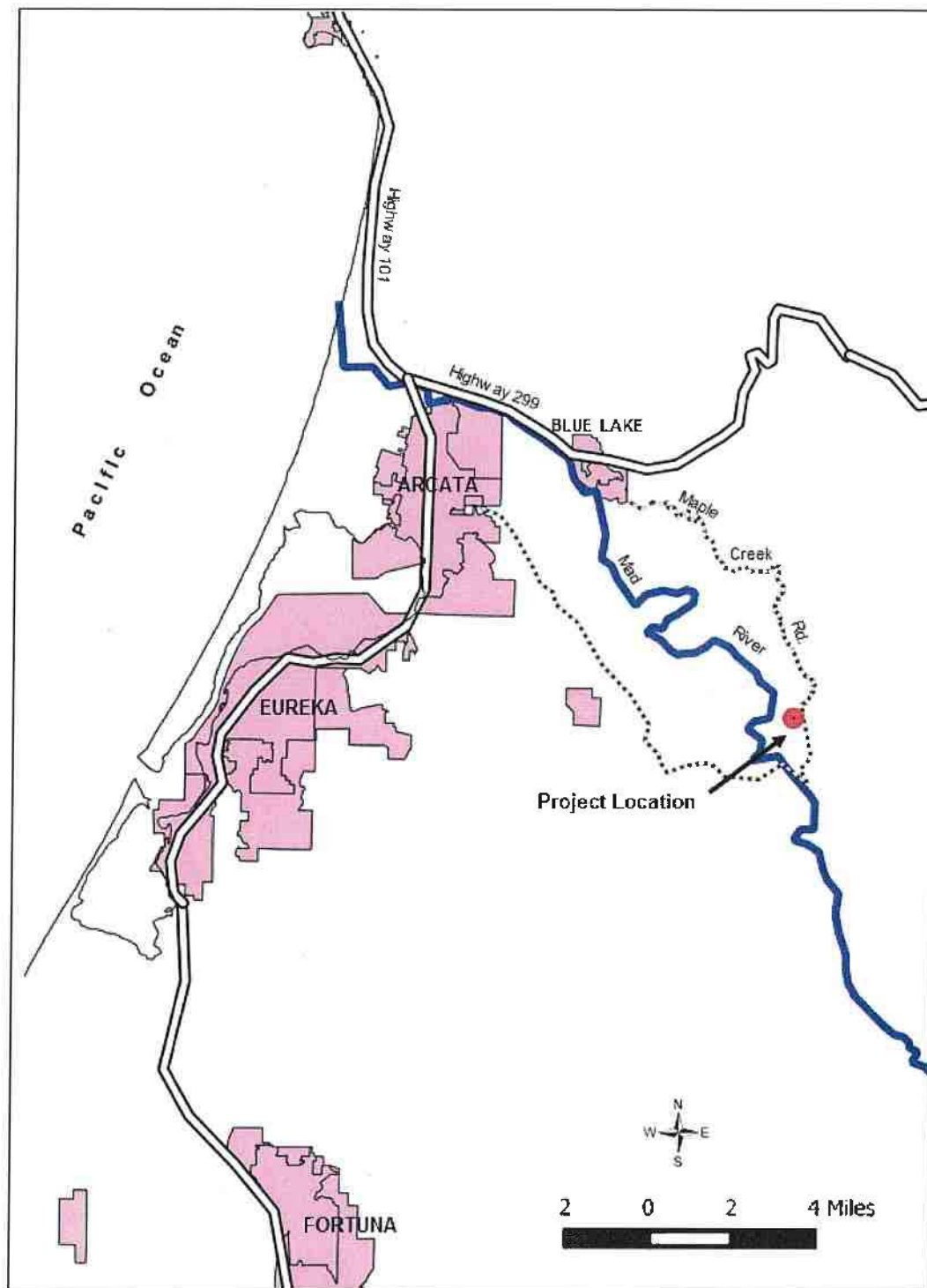
Scoping

A list of special status plants that could potentially occur in the project area was generated by consulting the *California Natural Diversity Database* (California Department of Fish and Wildlife 2019) and the CNPS *Inventory of Rare and Endangered Plants* (California Native Plant Society 2019). The scoping list includes special status plants with documented occurrences on the Korb USGS quadrangle or adjacent quadrangles; the list may include other taxa known to occur in habitat similar to the project area in Humboldt County (Appendix A).

Survey

The survey was floristic in nature and followed methods outlined in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Wildlife 2018). Plant taxonomy generally follows *The Jepson Manual Vascular Plants of California, Second Edition* (Baldwin et al. 2012), however the plant list may include more recent name changes. Plant communities were classified according to *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009). A survey route map is provided in Appendix B.

Figure 1. Location Map.



4.2. Aquatic Resources

Wetlands

Federal, State, and County wetland delineation methods follow the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers 2010). A positive wetland determination is made when all three wetland parameters (hydrophytic vegetation, hydric, soil, and wetland hydrology) are present.

Hydrophytic Vegetation

The presence of hydrophytic vegetation is determined by the wetland indicator status of each plant species present using the *Western Mountains Valleys and Coast 2016 Regional Wetland Plant List* (U.S. Army Corps of Engineers 2016). The indicator status of plants is based on the estimated probability of the species occurring in wetlands. The indicator status categories are:

Obligate Wetland Plants (OBL)	Almost always occur in wetlands	>99% frequency
Facultative Wetland Plants (FACW)	Usually occur in wetlands	67%-99%
Facultative Plants (FAC)	Equally occur wetlands and non-wetlands	33%-67%
Facultative Upland Plants (FACU)	Sometimes occur in wetlands	1%-33%
Obligate Upland Plants (UPL)	Rarely occur in wetlands	<1%

If more than 50% of the dominant plants across all vegetation strata (i.e. trees, shrubs, herbs) are OBL, FACW, or FAC, the vegetation is considered to be hydrophytic. Dominance of plants within the plots is determined using the "50/20" rule. This method involves estimating absolute cover of each plant in each vegetation stratum. Dominant plants include the plants with the highest cover that collectively, or individually account for 50% of the total vegetation cover. Additional plants are considered dominant if their cover is at least 20%.

Hydric Soil

Indicators of hydric soil include, but are not limited to, a strong hydrogen sulfide (rotten egg) odor, redox concentrations, depleted matrix, and high organic matter content. Soil colors are determined by using a standard Munsell soil color chart (Gretag Macbeth 2000).

Wetland Hydrology

Indicators of wetland hydrology include, but are not limited to, surface water, high water table, soil saturation, sediment deposits, soil cracks, and oxidized root channels along living roots.

Non-Wetland Waters

Non-wetland waters include watercourses with an ordinary highwater mark in addition to ponds, lakes, and other waterbodies.

5. RESULTS AND DISCUSSION

5.1. Botanical Resources

Special Status plants

No special status plants were encountered in the project area. A list of all plant encountered is provided in Appendix C.

The survey occurred relatively late in the season for Howell's montia (*Montia howellii*) and coast fawn lily (*Erythronium revolutum*). There is no habitat for coast fawn lily in the project area. Coast fawn lily typically occurs in mesic rocky habitat usually near streams, not in grasslands. The access road from Maple Creek Road to the project area is potential habitat for Howell's montia. Additionally, Howell's montia has been previously identified nearby on the ranch. Thus, it is recommended that the road not be graded and that no additional rock be placed on the running surface without a seasonally appropriate survey. Ideal survey timing would be March to mid-April 2010.

Several patches of gorse (*Ulex europaeus*) were observed in the project area. Gorse is a highly invasive species. It is recommended this species be controlled to prevent further spread. This species has a ranking of "high" by the California Invasive Plant Council (California Invasive Plant Council 2019). More information and potential control measures can be found at <https://www.cal-ipc.org/plants/profile/ulex-europaeus-profile/>

Special Status Natural Communities

There are no special status natural communities in the project area. The potential cultivation sites are in grassland dominated by non-native grasses including orchard grass (*Dactylis glomerata*), sweet vernal grass (*Anthoxanthum odoratum*), soft chess (*Bromus hordeaceus*), and velvet grass (*Holcus lanatus*).

Adjacent habitat includes coniferous forest dominated by Douglas-fir (*Pseudotsuga menziesii*) and grand fir (*Abies grandis*) and emergent wetland dominated by slough sedge (*Carex obnupta*), rushes (*Juncus* spp.).

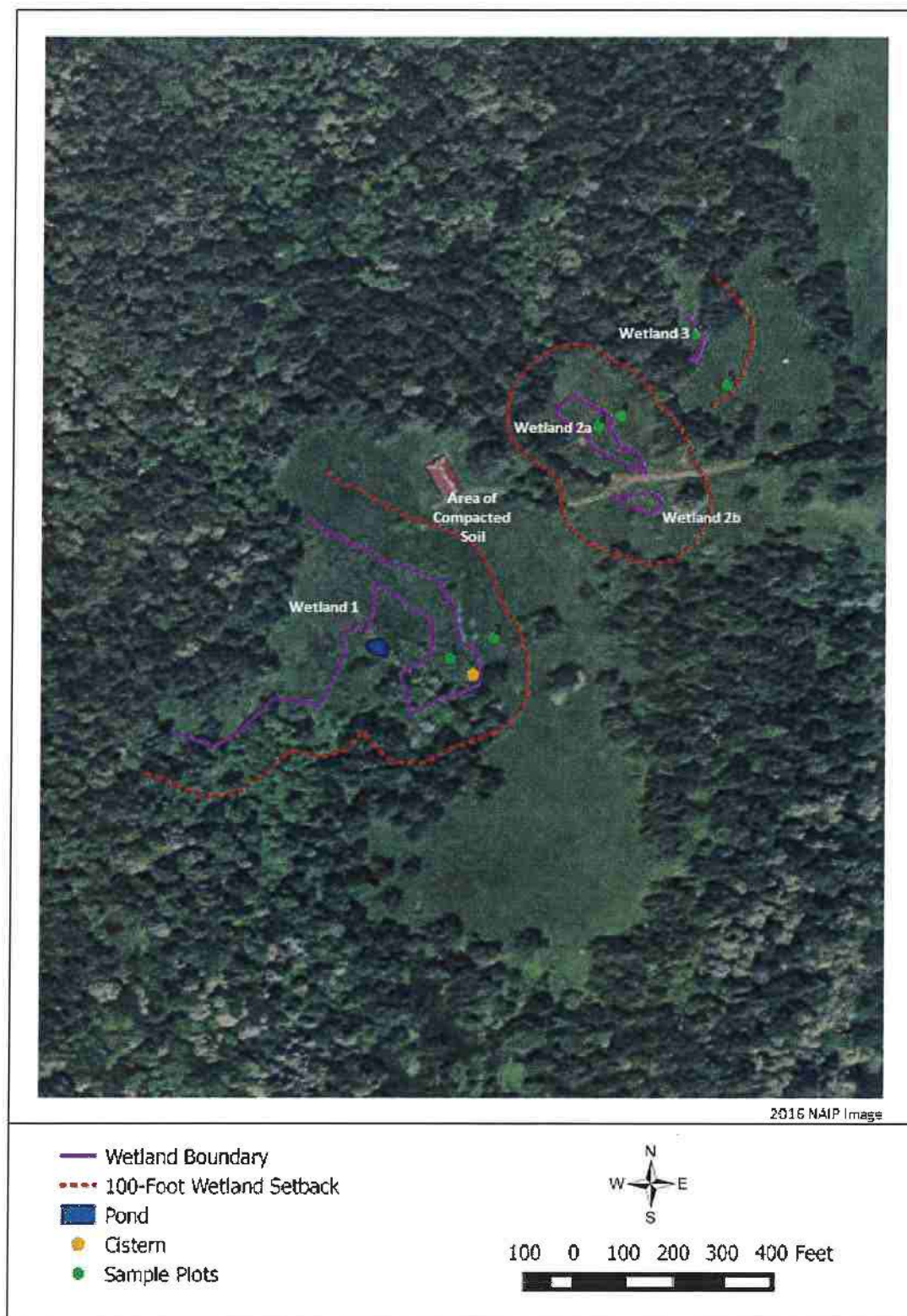
Representative photos of the project area are provided in Appendix D.

5.2. Aquatic Resources

Portions of three wetlands were mapped in the project area (Figure 2). Only the boundaries appurtenant to the project were mapped. The wetlands are predominantly seasonal emergent wetlands. There is a small portion of Wetland 1 just west of the cistern with a canopy of red alder. Wetland determination data forms are provided in Appendix E.

The vegetation is hydrophytic. Dominant plants include slough sedge (*Carex obnupta*), rushes (*Juncus effusus* and *J. patens*), and California blackberry (*Rubus ursinus*). The soil meets hydric soil indicator F6 (Redox Dark Surface).

Figure 2. Wetland Delineation Map.



The study was conducted during the dry season. Thus, there was no wetland hydrology present except in the area around the overflowing cistern. The wetlands meet two secondary indicators D2 (Geomorphic Position) and the D5 (FAC-Neutral Test). The wetlands are generally in hillside swales where ground water is likely to be at or near the surface during the wet season. When dropping FAC plants from the list of dominant species, in all cases more than 50% of the remaining plants are FACW or OBL.

There is a cistern made from an old bathtub in the Wetland 1. The cistern is fed by a pipe from a shallow well and overflows into the wetland and creates localized shallow surface water and soil saturation. The cistern is also in an area that was excavated in the past to access water, presumably for cattle. There is also a small constructed pond nearby with surface water present. It is likely without the overflowing cistern, past excavation, and the pond there would be no hydrology present in August. Thus, the wetlands are considered seasonal for the purposes of setbacks. A 100-foot setback from seasonal wetlands is recommended in the *Cannabis Cultivation Policy* (State Water Resources Control Board 2019).

The area around the barn has compacted soil likely from decades of cattle on the site. The area supports stands of pennyroyal (*Mentha pelugium*) and rushes. There are also areas with redox features in the soil. This area was not included in the wetland boundary because these indicators are likely due to soil compaction and restricted drainage. This area is on a ridge and is not concave or in a topographical position where water would pond or ground water would be expected to be near the surface in the winter.

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Appendix A. Special Status Plant Scoping List.

Scientific Name	Common Name	Listing Status	Blooming Period	Habitat	Potential to Occur in Project Area
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	1B.1	Jun-Oct	Coastal dunes	No Potential. Occurs in immediate coastal habitat not present in the project area.
<i>Astragalus umbraticus</i>	Bald Mountain milk-vetch	2B.3	May-Aug	Cismontane woodland, Lower montane coniferous forest, sometimes roadside	Unlikely. Marginal habitat along access road, Maple Creek road.
<i>Bensoniella oregona</i>	bensoniella	1B.1, CR	May-Jul	Bogs and fens, Lower montane coniferous forest (openings), Meadows and seeps, mesic	Moderate-Unlikely. Typically at higher elevation. Some potential in wetlands.
<i>Cardamine angulata</i>	seaside bittercress	2B.2	(Jan)Mar-Jul	Lower montane coniferous forest, North Coast coniferous forest, Wet areas, streambanks	Unlikely. Maybe some potential in wetlands.
<i>Carex arcta</i>	northern clustered sedge	2B.2	Jun-Sep	Bogs and fens, North Coast coniferous forest (mesic)	High. Potential in wetlands.
<i>Carex lyngbyei</i>	Lyngbye's sedge	2B.2	Apr-Aug	Marshes and swamps (brackish or freshwater)	Unlikely. Usually more immediate coast.
<i>Carex praticola</i>	northern meadow sedge	2B.2	May-Jul	Meadows and seeps (mesic)	High. Potential in wetlands.
<i>Castilleja ambigua</i> var. <i>humboldtensis</i>	Humboldt Bay owl's-clover	1B.2	Apr-Aug	Marshes and swamps (coastal salt)	No Potential. Occurs in immediate coastal habitat not present in the project area.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes bird's-beak	1B.2	Jun-Oct	Marshes and swamps (coastal salt)	No Potential. Occurs in immediate coastal habitat not present in the project area.
<i>Cornus canadensis</i>	bunchberry	2B.2	May-Jul	Bogs and fens, Meadows and seeps, North Coast coniferous forest	Moderate. Potential in wetlands.

Appendix A (Cont.). Special Status Plant Scoping List.

Scientific Name	Common Name	Listing Status	Blooming Period	Habitat	Potential to Occur in Project Area
<i>Epilobium oreganum</i>	Oregon fireweed	1B.2	Jun-Sep	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest, mesic	Unlikely. Typically at higher elevation.
<i>Erythronium oregonum</i>	giant fawn lily	2B.2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps, sometimes serpentinite, rocky, openings	Unlikely. Area lacks typical mesic rocky habitat.
<i>Erythronium revolutum</i>	coast fawn lily	2B.2	Mar-Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest, Mesic, streambanks	Unlikely. Area lacks typical mesic rocky habitat..
<i>Fissidens pauperculus</i>	minute pocket moss	1B.2		North Coast coniferous forest (damp coastal soil)	Unlikely. Project area lacks damp coastal soil
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B.2	Apr-Aug	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland	Moderate. Potential in grasslands.
<i>Glyceria grandis</i>	American manna grass	2B.3	Jun-Aug	Bogs and fens, Meadows and seeps, Marshes and swamps (streambanks and lake margins)	High. Potential in wetlands.
<i>Iliamna latibracteata</i>	California globe mallow	1B.2	Jun-Aug	Chaparral (montane), Lower montane coniferous forest, North Coast coniferous forest (mesic), Riparian scrub (streambanks), Often in burned areas	Unlikely. Typically at higher elevation.

Appendix A (Cont.). Special Status Plant Scoping List.

Scientific Name	Common Name	Listing Status	Blooming Period	Habitat	Potential to Occur in Project Area
<i>Lathyrus japonicus</i>	seaside pea	2B.1	May-Aug	Coastal dunes	No Potential. Occurs in immediate coastal habitat not present in the project area.
<i>Layia carnosa</i>	beach layia	1B.1, CE, FE	Mar-Jul	Coastal dunes, Coastal scrub (sandy)	No Potential. Occurs in immediate coastal habitat not present in the project area.
<i>Lilium occidentale</i>	western lily	1B.1, CE, FE	Jun-Jul	Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest (openings)	Unlikely. Marginal habitat at best in wetlands. Usually more coastal wetlands and prairie.
<i>Microseris borealis</i>	northern microseris	2B.1	Jun-Sep	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, mesic	Unlikely. Project area is not lower montane coniferous forest.
<i>Montia howellii</i>	Howell's montia	2B.2	(Jan-Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools, vernal mesic, sometimes roadsides	Moderate. Some potential along road, disturbed areas from livestock and elk.
<i>Noccaea fendleri</i> ssp. <i>californica</i>	Kneeland Prairie pennycress	1B.1, FE	May-Jun	Coastal prairie (serpentine)	No Potential. Project area lacks serpentine.
<i>Oenothera wolfii</i>	Wolf's evening-primrose	1B.1	May-Oct	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest, sandy, usually mesic	Unlikely. Marginal habitat at best along road.
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	2B.2	(Jan-Apr)May-Jul(Aug)	Coastal scrub, North Coast coniferous forest, Sometimes roadsides	Unlikely. Marginal habitat at best along road.

Appendix A (Cont.). Special Status Plant Scoping List.

Scientific Name	Common Name	Listing Status	Blooming Period	Habitat	Potential to Occur in Project Area
<i>Piperia candida</i>	white-flowered rein orchid	1B.2	(Mar)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, sometimes serpentinite	Moderate. Some potential along access road and forest understory.
<i>Sanguisorba officinalis</i>	great burnet	2B.2	Jul-Oct	Bogs and fens, Broadleafed upland forest, Meadows and seeps, Marshes and swamps, North Coast coniferous forest, Riparian forest, often serpentinite	Moderate-High. Potential in wetlands.
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	1B.2	(Apr)May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest, often roadcuts	High. Potential in grassland.
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerbloom	1B.2	Jun-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	High. Potential in grassland.
<i>Spergularia canadensis</i> var. <i>occidentalis</i>	western sand-spurrey	2B.1	Jun-Aug	Marshes and swamps (coastal salt)	No Potential. Occurs in immediate coastal habitat not present in the project area.
<i>Thermopsis robusta</i>	robust false lupine	1B.2	May-Jul	Broadleafed upland forest, North Coast coniferous forest	Unlikely. Marginal habitat at best along access road.
<i>Trichodon cylindricus</i>	cylindrical trichodon	2B.2		Broadleafed upland forest, Meadows and seeps, Upper montane coniferous forest, sandy, exposed soil, roadbanks	Unlikely. Project area lacks all or most habitat components.

Appendix A (Cont.). Special Status Plant Scoping List.

Scientific Name	Common Name	Listing Status	Blooming Period	Habitat	Potential to Occur in Project Area
<i>Viola palustris</i>	alpine marsh violet	2B.2	Mar-Aug	Bogs and fens (coastal), Coastal scrub (mesic)	High. Potential in wetlands.

SPECIAL STATUS PLANT LISTING STATUS

Endangered Species Act (ESA)

FE: Federally Endangered

FT: Federally Threatened

FR: Federally Rare

California Endangered Species Act (CESA)

CE: California Endangered

CT: California Threatened

CR: California Rare

California Rare Plant Ranks

1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

2A: Plants Presumed Extirpated in California, But Common Elsewhere

2B: California Rare Plant Rank 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

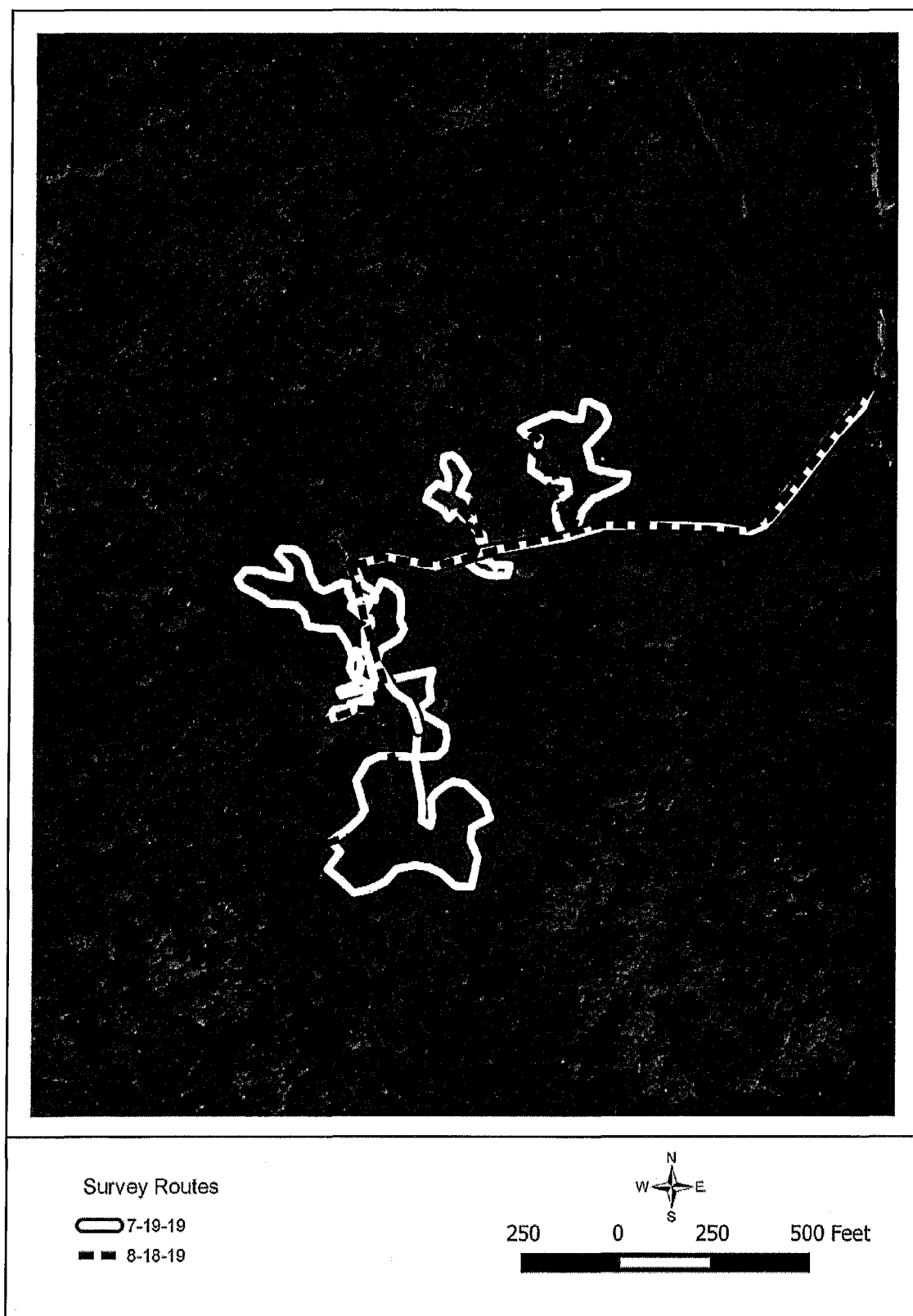
Threat Ranks

0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Appendix B. Survey Route Map.



Appendix C. List of Plants Encountered in the Project Area.

Scientific Name	Common Name
<i>Abies grandis</i>	grand fir
<i>Acer macrophyllum</i>	bigleaf maple
<i>Acmispon americanus</i> var. <i>americanus</i>	lotus
<i>Agrostis pallens</i>	bent grass
<i>Aira caryophyllea</i>	European hairgrass
<i>Alnus rubra</i>	red alder
<i>Alopecurus aequalis</i>	foxtail
<i>Anisocarpus madioides</i>	woodland madia
<i>Anthoxanthum odoratum</i>	sweet vernal grass
<i>Arbutus menziesii</i>	Pacific madrone
<i>Arrhenatherum elatius</i>	tall oatgrass
<i>Athyrium filix-femina</i>	lady fern
<i>Avena barbata</i>	slender wild oat
<i>Baccharis pilularis</i>	coyote brush
<i>Bellis perennis</i>	English daisy
<i>Briza minor</i>	small rattlesnake grass
<i>Brodiaea elegans</i>	harvest brodiaea
<i>Bromus hordeaceus</i>	soft chess
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Carex gynodynamis</i>	Olney's hairy sedge
<i>Carex leptopoda</i>	short-scaled sedge
<i>Carex obnupta</i>	slough sedge
<i>Ceanothus thyrsiflorus</i>	blue blossom
<i>Cirsium vulgare</i>	bull thistle
<i>Claytonia perfoliata</i>	miner's lettuce
<i>Clinopodium douglasii</i>	yerba buena
<i>Corylus cornuta</i> ssp. <i>californica</i>	California hazelnut
<i>Cotoneaster franchetii</i>	cotoneaster
<i>Cynodon dactylon</i>	bermuda grass
<i>Cynoglossum grande</i>	hound's-tongue
<i>Cynosurus cristatus</i>	crested dogtail
<i>Cynosurus echinatus</i>	dogtail grass
<i>Cyperus eragrostis</i>	nut-grass
<i>Cytisus scoparius</i>	Scotch broom
<i>Dactylis glomerata</i>	orchard grass
<i>Danthonia californica</i>	California oatgrass
<i>Daucus carota</i>	Queen Anne's lace

Appendix C (Cont.). List of Plants Encountered in the Project Area.

Scientific Name	Common Name
<i>Elymus glaucus</i> ssp. <i>glaucus</i>	blue wildrye
<i>Festuca arundinacea</i>	tall fescue
<i>Festuca myuros</i>	rattail sixweeks grass
<i>Festuca perennis</i>	rye grass
<i>Frangula pushiana</i>	cascara
<i>Fraxinus latifolia</i>	Oregon ash
<i>Galium aparine</i>	goose grass
<i>Galium</i> sp.	bedstraw
<i>Gaultheria shallon</i>	salal
<i>Holcus lanatus</i>	common velvet grass
<i>Hordeum marinum</i>	Mediterranean barley
<i>Hypochaeris radicata</i>	hairy cat's-ear
<i>Iris douglasiana</i>	Douglas iris
<i>Juncus effusus</i>	common rush
<i>Juncus ensifolius</i>	dagger-leaf rush
<i>Juncus patens</i>	spreading rush
<i>Juncus tenuis</i>	slender rush
<i>Lemna</i> sp.	duckweed
<i>Leucanthemum vulgare</i>	ox-eye daisy
<i>Ligusticum ampiiifolium</i>	lovage
<i>Linum bienne</i>	western blue flax
<i>Lonicera hispidula</i>	hairy honeysuckle
<i>Lotus corniculatus</i>	birdfoot trefoil
<i>Lupinus rivularis</i>	riverbank lupine
<i>Malus</i> sp.	apple
<i>Mentha pulegium</i>	pennyroyal
<i>Notholithocarpus densiflorus</i> var. <i>densiflorus</i>	tanoak
<i>Oenanthe sarmentosa</i>	Pacific water-parsley
<i>Osmorhiza berteroi</i>	sweet-cicely
<i>Oxalis oregana</i>	redwood sorrel
<i>Plantago lanceolata</i>	English plantain
<i>Polygonum aviculare</i>	prostrate knotweed
<i>Polystichum munitum</i>	sword fern
<i>Potamogeton</i> sp.	pondweed
<i>Prunella vulgaris</i>	self-heal
<i>Prunus</i> sp.	plum or cherry
<i>Pseudotsuga menziesii</i>	Douglas-fir

Appendix C (Cont.). List of Plants Encountered in the Project Area.

Scientific Name	Common Name
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	bracken fern
<i>Ribes sanguineum</i> var. <i>glutinosum</i>	pink-flowering currant
<i>Rosa</i> sp.	rose
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rubus laciniatus</i>	cutleaf blackberry
<i>Rubus leucodermis</i>	white-stemmed raspberry
<i>Rubus parviflorus</i>	thimbleberry
<i>Rubus spectabilis</i>	salmonberry
<i>Rubus ursinus</i>	California blackberry
<i>Rumex acetosella</i>	sheep sorrel
<i>Rumex crispus</i>	curly dock
<i>Rumex salicifolius</i>	willow dock
<i>Senecio minimus</i>	coast fireweed
<i>Silybum marianum</i>	milk thistle
<i>Spiranthes</i> sp.	lady's tresses
<i>Torilis arvensis</i>	rattlesnake weed
<i>Typha latifolia</i>	broadleaf cattail
<i>Ulex europaeus</i>	gorse
<i>Urtica dioica</i>	stinging nettle
<i>Vaccinium ovatum</i>	evergreen huckleberry
<i>Vancouveria planipetala</i>	redwood inside-out flower
<i>Whipplea modesta</i>	modesty
<i>Zeltnera</i> sp.	centaury

Appendix D. Representative Photos of the Project Area.

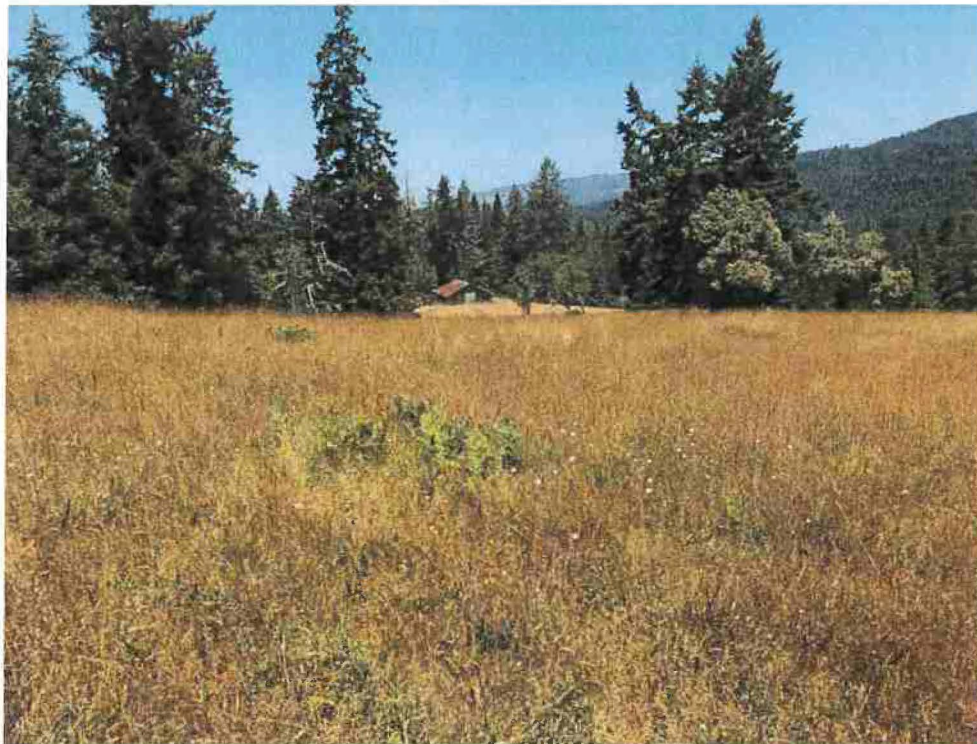


Photo 1. Upland grassland in potential cultivation area.



Photo 2. Typical emergent wetland with slough sedge and rushes.

Appendix D (Cont.). Representative Photos of the Project Area.



Photo 3. Bathtub cistern filled by shallow well.



Photo 4. Evidence of past excavation to enhance access to shallow ground water.

Appendix D (Cont.). Representative Photos of the Project Area.



Photo 5. Stand of invasive gorse near wetland 2a.



Photo 6. Area of compacted soil near barn with pennyroyal.

Appendix E. Wetland Determination Dataforms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: APN 313-145-006 City/County: Humboldt Sampling Date: 7-19-19
 Applicant/Owner: Maple Creek Ranch State: CA Sampling Point: 1
 Investigator(s): K. Wear Section, Township, Range: 30, T5N, R3E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): A Lat: E 425269 Long: N 4515109 Datum: NAD83
 Soil Map Unit Name: Lepoil - Candy mountain NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No _____
Hydric Soil Present?	Yes <u>X</u>	No _____			
Wetland Hydrology Present?	Yes <u>X</u>	No _____			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>10' - radius</u>)				
1. <u>Carex obnupta</u>	<u>70</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Rubus ursinus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
3. <u>Juncus effusus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
4. <u>Senecio minimus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. <u>Rumex crispus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
6. <u>Ranunculus repens</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

Sampling Point: 1

HYDROLOGY

Primary Indicators (minimum of one required; check all that apply)

- Field Observations:**

Wetland Hydrology Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: APN: 313-145-006 City/County: Humboldt Sampling Date: 2
 Applicant/Owner: Maple Creek Ranch State: CA Sampling Point: 7-19-19
 Investigator(s): K. Wear Section, Township, Range: 30, T5N, R3E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none) Slope (%): 10
 Subregion (LRR): A lot E 425295 Long: 451.5122 Datum: NAD 83
 Soil Map Unit Name: Lepor - Candy Mountain NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>10' - radius</u>) 1. <u>Dactylis glomerata</u> <u>50</u> <u>Y</u> <u>FACU</u> 2. <u>Anthriscum odoratum</u> <u>50</u> <u>Y</u> <u>FACU</u> 3. <u>Agrostis pallens</u> <u>5</u> <u>N</u> <u>UPL</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ = Total Cover				
Remarks:				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
6-12	10Yr 2/2	100					CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____Water Table Present? Yes _____ No X Depth (inches): _____Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: APW: 313-145-006 City/County: Humboldt Sampling Date: 8-18-19
 Applicant/Owner: Maple Creek Ranch State: CA Sampling Point: 3
 Investigator(s): K. Wear Section, Township, Range: 30, T5N, R3E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): A Lat: E 425360 Long: N 4515252 Datum: NAD 83
 Soil Map Unit Name: Lepid - Candy mountain NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>10' - radius</u>)				
1. <u>Suncus elaeagnus</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Suncus patens</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Rubus urbinus</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Antioxanthum odoratum</u>	<u>16</u>	<u>N</u>	<u>FACU</u>	
5. <u>Agrostis perillans</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
6. <u>Leucanthemum vulgare</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
7. <u>Senecio minimus</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
8. <u>Mentha pulegium</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
= Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

Sampling Point: 3

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | |
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, |
| <input type="checkbox"/> High Water Table (A2) | MLRA 1, 2, 4A, and 4B) | 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ~~X~~ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: APW-313-145-006 City/County: Humboldt Sampling Date: 8-18-19
 Applicant/Owner: Maple Creek Ranch State: CA Sampling Point: 4
 Investigator(s): K. Wear Section, Township, Range: 30, T5N, R3E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): A Lat: E 425373 Long: N 4515258 Datum: NAD 83
 Soil Map Unit Name: Repe.1 - Candy Mountain NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>10' - radius</u>) 1. <u>Dactylis glomerata</u> <u>30</u> <u>Y</u> <u>FACW</u> 2. <u>Anthriscus odoratus</u> <u>30</u> <u>Y</u> <u>FACW</u> 3. <u>Agrostis pallens</u> <u>30</u> <u>Y</u> <u>UPL</u> 4. <u>Plantago lanceolata</u> <u>10</u> <u>N</u> <u>FACW</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ = Total Cover				
Remarks:				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

Sampling Point: 4

HYDROLOGY

Primary Indicators (minimum of one required; check all that apply)

- | | | |
|---|---|---|
| ___ Surface Water (A1) | ___ Water-Stained Leaves (B9) (except | ___ Water-Stained Leaves (B9) (MLRA 1, 2, |
| ___ High Water Table (A2) | ___ MLRA 1, 2, 4A, and 4B) | ___ 4A, and 4B) |
| ___ Saturation (A3) | ___ Salt Crust (B11) | ___ Drainage Patterns (B10) |
| ___ Water Marks (B1) | ___ Aquatic Invertebrates (B13) | ___ Dry-Season Water Table (C2) |
| ___ Sediment Deposits (B2) | ___ Hydrogen Sulfide Odor (C1) | ___ Saturation Visible on Aerial Imagery (C9) |
| ___ Drift Deposits (B3) | ___ Oxidized Rhizospheres along Living Roots (C3) | ___ Geomorphic Position (D2) |
| ___ Algal Mat or Crust (B4) | ___ Presence of Reduced Iron (C4) | ___ Shallow Aquitard (D3) |
| ___ Iron Deposits (B5) | ___ Recent Iron Reduction in Tilled Soils (C6) | ___ FAC-Neutral Test (D5) |
| ___ Surface Soil Cracks (B6) | ___ Stunted or Stressed Plants (D1) (LRR A) | ___ Raised Ant Mounds (D6) (LRR A) |
| ___ Inundation Visible on Aerial Imagery (B7) | ___ Other (Explain in Remarks) | ___ Frost-Heave Hummocks (D7) |
| ___ Sparsely Vegetated Concave Surface (B8) | | |

Surface Water Present? Yes _____ No ~~____~~ Depth (inches): _____
 Water Table Present? Yes _____ No ~~____~~ Depth (inches): _____
 Saturation Present? Yes _____ No ~~____~~ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: APW 313-145-006 City/County: Humboldt Sampling Date: 8-18-19
 Applicant/Owner: Maple Creek Ranch State: CA Sampling Point: 5
 Investigator(s): K. Weir Section, Township, Range: 30, T5N, R3E
 Landform (hill/slope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): A Lat: E 425439 Long: N 4315278 Datum: NAD 83
 Soil Map Unit Name: Lepoll - Candy Mountain NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>10' - radius</u>) 1. <u>Anthoxanthum odoratum</u> <u>40</u> <u>Y</u> <u>FACW</u> 2. <u>Dactylis glomerata</u> <u>20</u> <u>Y</u> <u>FACW</u> 3. <u>Agrostis pallens</u> <u>20</u> <u>Y</u> <u>UPL</u> 4. <u>Poa annua</u> <u>10</u> <u>N</u> <u>FACW</u> 5. <u>Plantago lanceolata</u> <u>20</u> <u>Y</u> <u>FACW</u> 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ = Total Cover				
Remarks:				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

Sampling Point:

5

[illegible]¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Type: _____

Depth (Inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, |
| <input type="checkbox"/> High Water Table (A2) | MLRA 1, 2, 4A, and 4B) | 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: APN 313-145-006 City/County: Humboldt Sampling Date: 8-18-9
 Applicant/Owner: Maple Creek Ranch State: CA Sampling Point: 6
 Investigator(s): H. Weer Section, Township, Range: 30, T5N, R3E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): A Lat: 425420 Long: 12451309 Datum: NAD83
 Soil Map Unit Name: Lepori Candy Mountain NVI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>Area recently grazed by Elk.</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>10' radius</u>) 1. <u>Carex obnupta</u> <u>90</u> <u>Y</u> <u>OBL</u> 2. <u>Holcus lanatus</u> <u>20</u> <u>Y</u> <u>FAC</u> 3. <u>Anthoxanthum odoratum</u> <u>10</u> <u>N</u> <u>FACU</u> 4. <u>Prunella vulgaris</u> <u>5</u> <u>N</u> <u>FAC</u> 5. <u>Trifolium pratense</u> <u>5</u> <u>N</u> <u>FACW</u> 6. <u>Urtica dioica</u> <u>10</u> <u>N</u> <u>FAC</u> 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks: _____				



Brian Shields <sixriversdevelopment@gmail.com>

Maple Creek Ranch 2018-2020 NSO Surveys

alex.powell@blairforestry.com <alex.powell@blairforestry.com>
To: sixriversdevelopment@gmail.com

Wed, Mar 25, 2020 at 4:02 PM

Brian,

Sorry it took me so long to get these together. We have all of this data but haven't had to organize it into viewer friendly spreadsheets since 2018 when we submitted the Maple Creek Ranch's spotted owl protection measures into their NTMP. Attached are spotted owl calls from 2018 through what we have for this 2020 season. We are on a spot check year this season so we will only conduct 3 surveys - 2 are already done and the 3rd will be done in April within a month of the last call in March (this is a standard protocol for timber harvesting which there has been none since 2006). There were no spotted owl detections for any of these years on the attached spreadsheets. I also put a survey station map in there so you can see that the entire ranch is covered with these calls. Let me know if you need anything else. Thanks.

Alex



Alex Powell

PO Box 2517

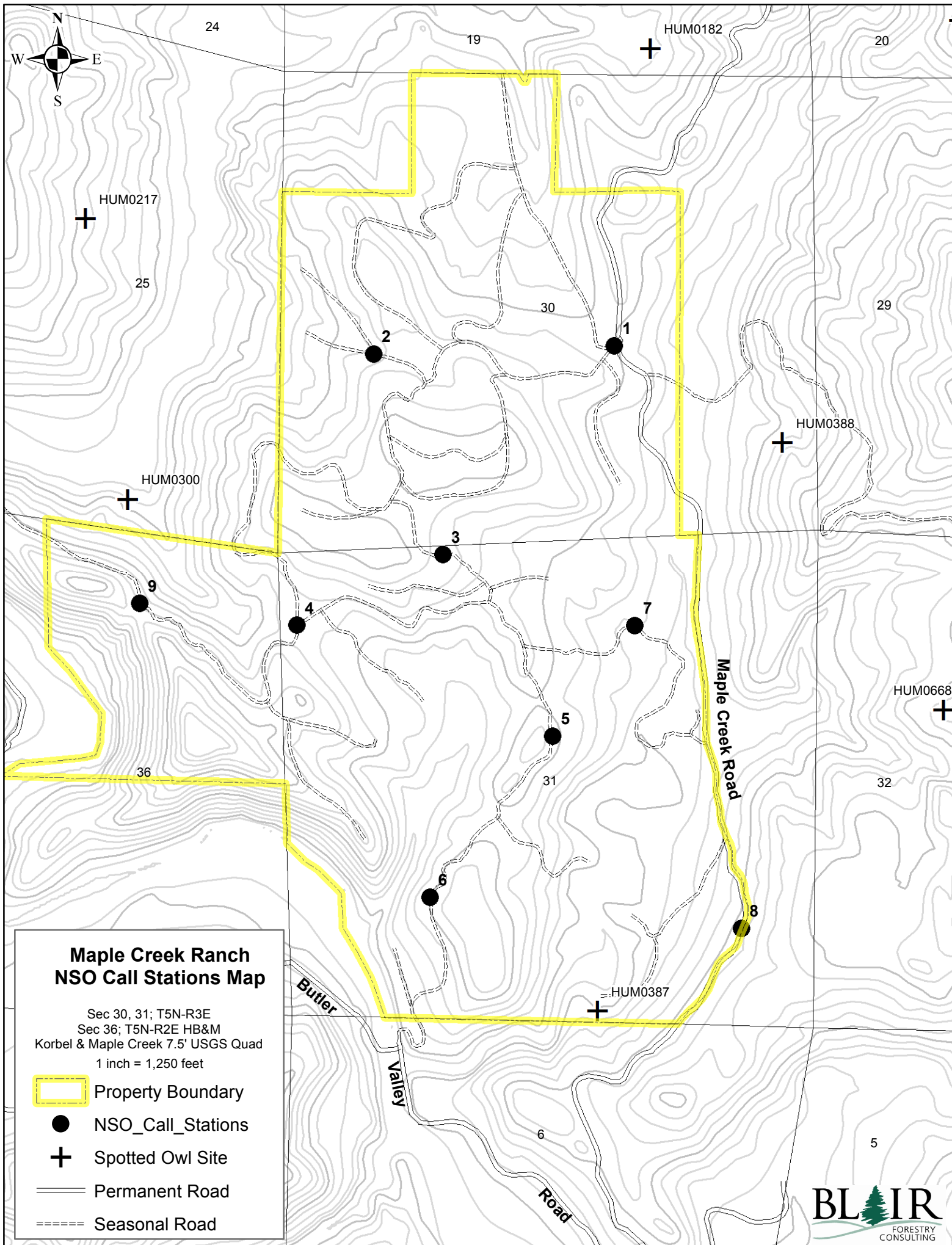
McKinleyville, CA 95519

Mobile: (707) 834-3506

Alex.Powell@BlairForestry.com







Maple Creek Ranch NTMP 2018-2020 NSO Surveys.pdf
1297K



Maple Creek Ranch NSO Call Stations Map

Sec 30, 31; T5N-R3E
Sec 36; T5N-R2E HB&M
Korbel & Maple Creek 7.5' USGS Quad
1 inch = 1,250 feet

-  Property Boundary
-  NSO_Call_Stations
-  Spotted Owl Site
-  Permanent Road
-  Seasonal Road

Northern Spotted Owl Survey Form

Project: Maple Creek Ranch NTMP

Location: Maple Creek

Surveyor(s): A. Powell

Date: 3/22 and 3/29, 2018

Visit #: 1,2

Survey Type: Spot Calling

Caller: Digital

Physiographic Province: CA Coast Range (Redwood)

NSO Detection: No

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes
VISIT 1 3/22/2018											
8	2125	2135	0	0	1	0					
1	2141	2151	0	0	1	0					
2	2210	2220	0	0	1	0					
3	2004	2014	0	0	1	0					
4	1947	1957	0	0	1	0					
9	1930	1940	0	0	1	0					CREEK VERY LOUD
7	2053	2103	0	0	1	0					
5	2020	2030	0	0	1	0					
6	2035	2045	0	0	1	0					
VISIT 2 3/29/2018											
6	1938	1948	0	0	0	0					
5	1950	2000	0	0	0	0					
7	2006	2016	0	0	0	0					
4	2043	2053	0	0	0	0					
9	2028	2038	0	0	0	0					
3	2058	2108	0	0	0	0					FAINT SAW WHET OWL
2	2112	2122	0	0	0	0					
1	2128	2139	0	0	0	0					
8	2203	2213	0	0	0	0					

Precip
0 = None
1 = Mist
2 = Drizzle
3 = Light Rain
4 = Heavy Rain
5 = Snow

Cloud Cover
0 = Clear
1 = Light Fog
2 = Heavy Fog
3 = Partly Cloudy
4 = Overcast
5 = Cloudy

Wind
0 = Calm (None, <1mph)
1 = Light Air (1-4mph, Leaves rustle, cannot feel wind on face)
2 = Light Breeze (5-7mph, Leaves rustle, wind felt on face)
3 = Gentle Breeze (8-11mph, Leaves and twigs in constant motion)
4 = Moderate Breeze (12-18mph, Dust and small branches move)
5 = Strong Breeze (19mph+, small trees sway, umbrella difficult to control)

Response
0 = No Response
1 = Four Note Call
2 = Whistle Call
3 = Monkey Call
4 = Agitation Call
5 = Barred Owl

Obs Type
(if response)
1 = Audio
2 = Visual

Sex
1 = Male
2 = Female
3 = Pair
4 = Unknown Sex
5 = Adult w/ Juvenile



Northern Spotted Owl Survey Form

Project: Maple Creek NTMP

Location: Maple Creek, CA

Surveyor(s): B. Bostelle, A. Powell

Date: 4/17 and 5/2, 2018

Visit #: 3,4

Survey Type: Spot Calling

Caller: Digital

Physiographic Province: CA Coast Range (Redwood)

NSO Detection: Yes

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes
Visit 3-4/17/18											
9	1950	2000	0	3	1	0					
4	2006	2016	0	3	1	0					
6	2025	2035	0	3	1	0					
5	2040	2050	0	3	1	0					
7	2057	2107	0	3	1	0					
3	2124	2134	0	3	1	0					
2	2140	2150	0	3	1	0					
1	2201	2211	0	3	1	1	1, 2	1, 2	40'	40' from Station #1	Pair of NSO responded from east at 2207 approx 1000'. Pair flew in from the east at 2210. One in tree next to station #1 until 2213 and flew east back toward HUM0388.
8	2231	1041	0	3	1	0					
Visit 4-5/2/18											
9	2020	2030	0	3	0	0					
4	2034	2044	0	3	0	0					
6	2250	2100	0	3	0	0					
5	2107	2117	0	3	0	0					
7	2121	2131	0	3	0	0					
3	2139	2149	0	3	0	0					
2	2158	2208	0	3	0	0					
1	2212	2222	0	3	0	0					
8	2239	2249	0	3	0	0					

Precip
0 = None
1 = Mist
2 = Drizzle
3 = Light Rain
4 = Heavy Rain
5 = Snow

Cloud Cover
0 = Clear
1 = Light Fog
2 = Heavy Fog
3 = Partly Cloudy
4 = Overcast
5 = Cloudy

Wind
0 = Calm (None, <1mph)
1 = Light Air (1-4mph, Leaves rustle, cannot feel wind on face)
2 = Light Breeze (5-7mph, Leaves rustle, wind felt on face)
3 = Gentle Breeze (8-11mph, Leaves and twigs in constant motion)
4 = Moderate Breeze (12-18mph, Dust and small branches move)
5 = Strong Breeze (19mph+, small trees sway, umbrella difficult to control)

Response
0 = No Response
1 = Four Note Call
2 = Whistle Call
3 = Monkey Call
4 = Agitation Call
5 = Barred Owl

Obs Type
(if response)
1 = Audio
2 = Visual

Sex
1 = Male
2 = Female
3 = Pair
4 = Unknown Sex
5 = Adult w/ Juvenile



Northern Spotted Owl Survey Form

Project: Maple Creek

Location: Maple Creek, CA

Surveyor(s): B. Bostelle

Date: 5/14 and 5/21, 2018

Visit #: 5,6

Survey Type: Spot Calling

Caller: Digital

Physiographic Province: CA Coast Range (Redwood)

NSO Detection: No

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes
Visit 5-5/14/18			0	4	0	0					
9	2017	2027	0	4	0	0					
4	2035	2045	0	4	0	0					
6	2050	2100	0	4	0	0					
5	2058	2108	0	4	0	0					
7	2110	2120	0	4	0	0					
3	2125	2135	0	4	0	0					
2	2140	2150	0	4	0	0					
1	2155	2205	0	4	0	0					
8	2215	2225	0	4	0	0					
Visit 6-5/21/18											
3	1813	1925	0	0	1	5	1, 2	3	30		BAOW ELICITED RESPONSE AT 2100. PAIR BOTH VOCALIZING UNTIL I LEFT AT 2125
6	2000	2010	0	0	1	0	0				
9	2021	2031	0	0	1	0	0				
4			0	0	1	0	0				DROPPED STATION DUE TO BAOW AT STATION 3
5	2039	2049	0	0	1	0	0				
7	2044	2054	0	0	1	0	0				
2	2102	2113	0	0	1	0	0				
1	2117	2127	0	0	1	0	0				
8	2137	2147	0	0	1	0	0				

Precip
0 = None
1 = Mist
2 = Drizzle
3 = Light Rain
4 = Heavy Rain
5 = Snow

Cloud Cover
0 = Clear
1 = Light Fog
2 = Heavy Fog
3 = Partly Cloudy
4 = Overcast
5 = Cloudy

Wind
0 = Calm (None, <1mph)
1 = Light Air (1-4mph, Leaves rustle, cannot feel wind on face)
2 = Light Breeze (5-7mph, Leaves rustle, wind felt on face)
3 = Gentle Breeze (8-11mph, Leaves and twigs in constant motion)
4 = Moderate Breeze (12-18mph, Dust and small branches move)
5 = Strong Breeze (19mph+, small trees sway, umbrella difficult to control)

Response
0 = No Response
1 = Four Note Call
2 = Whistle Call
3 = Monkey Call
4 = Agitation Call
5 = Barred Owl

Obs Type
(if response)
1 = Audio
2 = Visual

Sex
1 = Male
2 = Female
3 = Pair
4 = Unknown Sex
5 = Adult w/ Juvenile



Project: Ma: MAPLE CREEK RANCH 2019

Location: M MAPLE CREEK

Surveyor(s): ALEX POWELL

Date: 3/21/2019

Visit #: 1

Survey Type Spot Calling

Caller: Digital

Physiograph CA Coast Range (Redwood

NSO Detection: NO

Precip

Cloud Cover

Wind

Response

Obs Type

Sex

0 = None

0 = Clear

0 = Calm (None, <1mph)

0 = No Resp (if response) 1 = Male

1 = Mist

1 = Light Fog

1 = Light Air (1-4mph, Leaves rustle, cannot feel wi

1 = Four Not 1 = Audio

2 = Female

2 = Drizzle

2 = Heavy Fc

2 = Light Breeze (5-7mph, Leaves rustle, wind felt

2 = Whistle (2 = Visual

3 = Pair

3 = Light Rai

3 = Partly Cl

3 = Gentle Breeze (8-11mph, Leaves and twigs in c

3 = Monkey Call

4 = Unknown Sex

4 = Heavy R

4 = Overcast

4 = Moderate Breeze (12-18mph, Dust and small b

4 = Agitation Call

5 = Adult w/ Juvenile

5 = Snow

5 = Cloudy

5 = Strong Breeze (19mph+, small trees sway, umb

5 = Barred Owl

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes Max text length: 77
3/21/19											
9	1929	1939	0	0	0	0					WALK IN CALLED TREES DOWN
4	1943	1953	0	0	0	0					NORTHERN SAW WHET OWL
5	2001	2011	0	0	0	0					
6	2025	2035	0	0	0	0					Had to cut a bunch of trees to get in, large tree too much to deal with near station #6 - TREEDOWN WALK IN LAST BIT AND CALLED
7	2042	2052	0	0	0	0					
3	2057	2107	0	0	0	0					
2	2120	2130	0	0	0	0					Large tree down, Walk in call
1	2137	2147	0	0	0	0					
8	2153	2203	0	0	0	0					

Project: Ma: MAPLE CREEK RANCH 2019

Location: M MAPLE CREEK

Surveyor(s): ALEX POWELL

Date: 3/21/2019

Visit #: 2

Survey Type Spot Calling

Caller: Digital

Physiograph CA Coast Range (Redwood

NSO Detection: NO

Precip

Cloud Cover

Wind

Response

Obs Type

Sex

0 = None

0 = Clear

0 = Calm (None, <1mph)

0 = No Resp (if response) 1 = Male

1 = Mist

1 = Light Fog

1 = Light Air (1-4mph, Leaves rustle, cannot feel wi

1 = Four Not 1 = Audio

2 = Female

2 = Drizzle

2 = Heavy Fog

2 = Light Breeze (5-7mph, Leaves rustle, wind felt

2 = Whistle 2 = Visual

3 = Pair

3 = Light Rain

3 = Partly Cloudy

3 = Gentle Breeze (8-11mph, Leaves and twigs in c

3 = Monkey Call

4 = Unknown Sex

4 = Heavy Rain

4 = Overcast

4 = Moderate Breeze (12-18mph, Dust and small b

4 = Agitation Call

5 = Adult w/ Juvenile

5 = Snow

5 = Cloudy

5 = Strong Breeze (19mph+, small trees sway, umb

5 = Barred Owl

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes Max text length: 77
6	1940	1950	0	3	1	0					
5	1954	2004	0	0	0	0					
7	2009	2019	0	0	0	0					
4	2044	2054	0	3	0	0					
9	2030	2040	0	3	0	0					
3	2059	2116	0	3	0	5	2		At station		BAOW came down and appeared to attack small prey on ground about 25' in front of quad @ ~2105. Flew and roosted about 60' on side of road low in tree. Moved off when I attempted to approach him. Heard another owl moving around in the trees behind me. Too dark to spot it. No audio heard. We did get 2 BAOW in at this station on follow-up in 2018 and these owls were not acting like NSOW at all.
2	2130	2140	0	3	0	0					Large tree down, Walk in call
1	2130	2145	0	3	1	5	1		At station		BAOW shrill calling in tree next to station at 2134. Moved off north at 2140. Heard 2 individual BAOW 5-note calls ~ 1000' to north in direction BAOW flew. Continued to call until I left. Likely same pair that came in at Station #3 earlier - there's a shallow ridge between stations but they're only ~2,500' apart.
8	2151	2201	0	3	1	0					

Project: Ma: MAPLE CREEK RANCH 2019

Location: M MAPLE CREEK

Surveyor(s): ALEX POWELL

Date: 4/23/2019

Visit #: 3

Survey Type Spot Calling

Caller: Digital

Physiograph CA Coast Range (Redwood)

NSO Detection: NO

Precip

Cloud Cover

Wind

Response

Obs Type

Sex

0 = None

0 = Clear

0 = Calm (None, <1mph)

0 = No Resp (if response) 1 = Male

1 = Mist

1 = Light Fog

1 = Light Air (1-4mph, Leaves rustle, cannot feel wi

1 = Four Not 1 = Audio 2 = Female

2 = Drizzle

2 = Heavy Fc

2 = Light Breeze (5-7mph, Leaves rustle, wind felt c

2 = Whistle 2 = Visual 3 = Pair

3 = Light Rai

3 = Partly Cl

3 = Gentle Breeze (8-11mph, Leaves and twigs in c

3 = Monkey Call 4 = Unknown Sex

4 = Heavy R

4 = Overcast

4 = Moderate Breeze (12-18mph, Dust and small b

4 = Agitation Call

5 = Adult w/ Juvenile

5 = Snow

5 = Cloudy

5 = Strong Breeze (19mph+, small trees sway, umb

5 = Barred Owl

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes Max text length: 77
8	2025	2035	0	3	1	0					
2	2052	2102	0	3	1	0					
9	2110	2120	0	3	1	0					
4	2124	2134	0	3	1	0					
6	2140	2150	0	3	1	0					
5	2153	2203	0	3	1	0					
7	2208	2218	0	3	0	0					
3	2225	2231	0	3	0	5	1		400'	sw	BAOW response from southwest, ended call at 2231
1	2236	2246	0	3	0	5	1		25'	sw	BAOW response from southwest, ended up in tree at station.

Project: Ma: MAPLE CREEK RANCH 2019

Location: M MAPLE CREEK

Surveyor(s): ALEX POWELL

Date: 5/21/2019

Visit #: 4

Survey Type Spot Calling

Caller: Digital

Physiograph CA Coast Range (Redwood)

NSO Detection: NO

Precip

Cloud Cover

Wind

Response

Obs Type

Sex

0 = None

0 = Clear

0 = Calm (None, <1mph)

0 = No Response (if response) 1 = Male

1 = Mist

1 = Light Fog

1 = Light Air (1-4mph, Leaves rustle, cannot feel wind)

1 = Four Notes 1 = Audio

2 = Female

2 = Drizzle

2 = Heavy Fog

2 = Light Breeze (5-7mph, Leaves rustle, wind felt)

2 = Whistle 2 = Visual

3 = Pair

3 = Light Rain

3 = Partly Cloudy

3 = Gentle Breeze (8-11mph, Leaves and twigs in motion)

3 = Monkey Call

4 = Unknown Sex

4 = Heavy Rain

4 = Overcast

4 = Moderate Breeze (12-18mph, Dust and small branches move)

4 = Agitation Call

5 = Adult w/ Juvenile

5 = Snow

5 = Cloudy

5 = Strong Breeze (19mph+, small trees sway, umbrellas close)

5 = Barred Owl

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes Max text length: 77
9	2047	2107	1	4	0	0					
4	2110	2120	1	4	0	0					
7	2124	2134	1	4	0	0					
6	2140	2150	2	4	0	0					
5	2153	2203	1	4	0	0					
3	2207	2217	1	4	0	0					kept volume lower than normal to avoid bringing in BAOW
2	2221	2231	0	4	0	0					
1	2236	2246	1	4	0	0					
8	2301	2311	0	4	0	0					

Project: Ma: MAPLE CREEK RANCH 2019

Location: M MAPLE CREEK

Surveyor(s): ALEX POWELL

Date: 5/31/2019

Visit #: 5

Survey Type Spot Calling

Caller: Digital

Physiograph CA Coast Range (Redwood)

NSO Detection: NO

Precip

Cloud Cover

Wind

Response

Obs Type

Sex

0 = None 0 = Clear 0 = Calm (None, <1mph)

0 = No Response (if response) 1 = Male

1 = Mist 1 = Light Fog 1 = Light Air (1-4mph, Leaves rustle, cannot feel wind)

1 = Four Not 1 = Audio 2 = Female

2 = Drizzle 2 = Heavy Fog 2 = Light Breeze (5-7mph, Leaves rustle, wind felt)

2 = Whistle 2 = Visual 3 = Pair

3 = Light Rain 3 = Partly Cloudy 3 = Gentle Breeze (8-11mph, Leaves and twigs in motion)

3 = Monkey Call 4 = Unknown Sex

4 = Heavy Rain 4 = Overcast 4 = Moderate Breeze (12-18mph, Dust and small branches move)

4 = Agitation Call 5 = Adult w/ Juvenile

5 = Snow 5 = Cloudy 5 = Strong Breeze (19mph+, small trees sway, umbrellas close)

5 = Barred Owl

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes Max text length: 77
1	2055	2105	0	5	0	0					
2	2109	2119	0	5	0	0					
3	2123	2135	0	5	0	5	1				faint BAOW response to southwest? Could not get repeat response
4	2140	2150	0	5	0	0					
9	2155	2205	0	5	0	0					
7	2212	2222	0	5	0	0					
5	2226	2236	0	5	0	0					
6	2240	2250	0	5	0	0					
8	2310	2320	0	5	0	0					

Project: Ma: MAPLE CREEK RANCH 2019

Location: M MAPLE CREEK

Surveyor(s): ALEX POWELL

Date: 6/24/2019

Visit #: 6

Survey Type Spot Calling

Caller: Digital

Physiograph CA Coast Range (Redwood)

NSO Detection: NO

Precip

Cloud Cover

Wind

Response

Obs Type

Sex

0 = None 0 = Clear 0 = Calm (None, <1mph)

0 = No Resp (if response) 1 = Male

1 = Mist 1 = Light Fog 1 = Light Air (1-4mph, Leaves rustle, cannot feel wi 1 = Four Not 1 = Audio 2 = Female

2 = Drizzle 2 = Heavy Fog 2 = Light Breeze (5-7mph, Leaves rustle, wind felt c 2 = Whistle 2 = Visual 3 = Pair

3 = Light Rain 3 = Partly Cloudy 3 = Gentle Breeze (8-11mph, Leaves and twigs in c 3 = Monkey Call 4 = Unknown Sex

4 = Heavy Rain 4 = Overcast 4 = Moderate Breeze (12-18mph, Dust and small b 4 = Agitation Call 5 = Adult w/ Juvenile

5 = Snow 5 = Cloudy 5 = Strong Breeze (19mph+, small trees sway, umb 5 = Barred Owl

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes Max text length: 77
8	2102	2112	0	3	0	0					
1	2119	2129	0	3	0	0					
9	2137	2147	0	3	0	0					
4	2150	2200	0	3	0	0					
6	2206	2216	0	3	0	0					
5	2220	2230	0	3	0	0					
7	2234	2244	0	3	0	0					
3	2250	2300	0	3	0	0					
2	2304	2314	0	3	0	0					

Project: **Ma** MAPLE CREEK RANCH 2020

Location: **Mi** MAPLE CREEK

Surveyor(s): ALEX POWELL

Date: 2020

Visit #: 1 and 2

Survey Type Spot Calling

Caller: Digital

Physiograph CA Coast Range (Redwoc

NSO Detection: NO

Precip

0 = None

1 = Mist

2 = Drizzle

3 = Light Rai

4 = Heavy R

5 = Snow

Cloud Cover

0 = Clear

1 = Light Fog

2 = Heavy Fog

3 = Partly Cl

4 = Overcast

5 = Cloudy

Wind

0 = Calm (None, <1mph)

1 = Light Air (1-4mph, Leaves rustle, cannot feel w

2 = Light Breeze (5-7mph, Leaves rustle, wind felt i

3 = Gentle Breeze (8-11mph, Leaves and twigs in c

4 = Moderate Breeze (12-18mph, Dust and small t

5 = Strong Breeze (19mph+, small trees sway, umt

Response

0 = No Resp (if response

1 = Four Not

2 = Whistle

3 = Monkey Call

4 = Agitation Call

5 = Barred Owl

Obs Type

1 = Male

2 = Female

3 = Pair

4 = Unknown Sex

5 = Adult w/ Juvenile

Sex

Station	Start Time (24hrs)	End Time (24hrs)	Precip	Cloud Cover	Wind	Response	Obs Type	Sex	Distance (Feet)	Bearing	Notes Max text length: 77
3/3/20											
8	1823	1833	0	0		1	0				
7	1846	1856	0	0		0	0				
6	1902	1912	0	0		1	0				
5	1916	1926	0	0		1	0				
4	1931	1946	0	0		1					SWOW TO SE? POSSIBLE BAOW? CHIMED IN LOUD CHIRP AT END OF CALL JUST SE OF STATION _COULD NOT GET IT TO ELICIT ANOTHER RESPONSE.
9	1950	2000	0	0		0	0				
3	2006	2016	0	0		0	0				
2	2020	2030	0	0		0	0				
1	2049	2059	0	0		1	0				
3/10/2020											
9	1919	1929									
4	1933	1943	0	0		0	0	2	4	150 se	Saw silhouette of bird in sky above treeline (Presumably BAOW) come in at approximately 1937. It was barely light and I was unable identify or to elicit response using both NSO or BAOW calls until 1942, Could not locate in trees. Dropped Stations 3 and 5 across slope and drainage.
5											Station Dropped due to BAOW detection at Staion 4
6	1951	2001	0	0		0	0				
7	2007	2017	0	0		0	0				
3											Station Dropped due to BAOW detection at Station 4
2	2023	2033	0	0		0	0				
1	2037	2047	0	0		0	0				
8	2055	2105	0	0		0	0				

Other Documents



Dirty Business Soil Consulting & Analysis

852 W Wabash Ave, Eureka, CA 95501

707-633-8885

DBSanalytics.com

September 12, 2019

Client: Maple Creek Ranch Corporation

Phone: 707-498-1791

Email: Sixriversdevelopment@gmail.com

APN: 313-145-006



Re: Maple Creek Ranch Corporation Prime Agricultural Soil Assessment

Please find the attached report containing the detailed findings for the prime agricultural soil assessment conducted September 6th, 2019 for the property referenced above. Maple Creek Ranch Corporation was found to contain 293,244 square feet (6.7 acre) of prime agricultural soil, as defined by Humboldt County's Commercial Medical Marijuana Land Use Ordinance (CMMLUO). This area was spread across five delineated sites that passed the Storie Index with a score of 81.2-85.5% overall, with an average score of 82.8%

Please let us know if any further information is needed.

Sincerely,

A handwritten signature in black ink that reads "Schuette".

Sarah Schuette

Certified Professional Soil Scientist, CPSS #381331

Dirty Business Soil Consulting & Analysis, LLC

852 W Wabash Ave, Eureka, CA, 95501



Dirty Business Soil Consulting & Analysis

852 W Wabash Ave, Eureka, CA 95501

707-633-8885

DBSanalytics.com

Prime Agricultural Soil Assessment

Maple Creek Ranch Corporation

PO Box 1212, Eureka, CA. 95502

September 06, 2019

Prepared For: Maple Creek Ranch Corporation

Prepared By: Dirty Business Soil Consulting & Analysis, LLC

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1.0 INTRODUCTION

The purpose of this report is to disclose the findings and methodologies of the prime agricultural soil assessment at Maple Creek Ranch Corporation conducted September 6th, 2019.

Per the Humboldt County's Commercial Medical Marijuana Land Use Ordinance (CMMLUO), prime agricultural soils are defined as *"all lands which qualify for rating as Class I or Class II in the Soil Conservation Service land use capability classifications or qualify for rating 80 through 100 in the Storie Index Rating. Additionally, where determined through site-specific fieldwork prepared by a qualified professional, soils meeting these characteristics may be recognized as prime."*

Prime agricultural soil assessments are conducted either by desktop assessment of existing Natural Resource Conservation Service (NRCS) surveys, Humboldt County GIS portal, and/or field assessment to determine the Storie Index or Land Capability Classification (LCC). The previous methods were examined, and it was determined that the Storie Index could be effectively utilized to assess prime agricultural soils throughout this property. Please see Appendix A for detailed methodology of Storie Index assessment.

2.0 RESULTS

Maple Creek Ranch Corporation is a 420-acre parcel. The Storie Index assessment yielded 293,244 square feet (6.7 acre) of prime agricultural soil across three different sites. Only areas with an average slope below 11% were mapped. The landscape consists of upland grassland meadows surrounded by mixed conifer forest. A series of landscape/auger photographs that capture the general topography and vegetation for the prime agricultural sites found on this property are contained in Appendix B. There is one landscape photo and one auger profile photo for each site. Storie Index scores ranged from 81.2-85.5% overall, with an average score of 82.8%. All sites reside in upland soils underlain by consolidated sedimentary rocks, with moderately deep, moderately to well-developed profiles, 4-6-feet in depth. Surface soil texture was consistently loamy and increased in sand throughout the profile, with one site (Site 3) increasing in clay with depth. All slopes were less than 15%, with most sites averaging between 8%. Drainage for all sites is Moderately Well Drained (MWD), with the exception of Site 1 Hole 1 which was Well Drained (WD) and did not exhibit any redox features anywhere in the profile. For all MWD holes, the redox started between 63.5cm–86.3cm. All pH values were below 7.0, which indicates no accumulation of alkaline minerals in soil. All Electrical Conductivity (EC) measurements were below 4 dS/m indicating no accumulation of phytotoxic nutrients. Soil was consistently very strongly acid, with pH's ranging from 4.7 to 5.0. Erosion and microrelief were used to vet low risk cultivation areas, thus all assessed sites had little to no erosional and microrelief features.

Table 1 is a comprehensive list of all prime agricultural soil sites, their associated Assessor Parcel Numbers (APN), the Storie Index score, and respective site sizes. Site and soil auger hole descriptions are discussed in the following section. A map of all the prime agricultural sites throughout the property, as well as individual maps for each prime agricultural site, are contained in Appendix C for reference. The complete Storie Index scoring for each evaluated hole is contained in Appendix D.

Table 1. Comprehensive List of Prime Agricultural Soil Sites

Maple Creek Ranch Prime Ag Figures				
APN(s)	Site Name	Storie Index Score (%)	Area Square Feet	Area Acres
313-145-006	S1 (H1-H3)	85.5	245,782	5.6
313-145-006		82.9		
313-145-006		82.9		
313-145-006	2	81.2	17,869	0.4
313-145-006	3	81.2	29,593	0.7
TOTAL			293,244	6.7
Average SI Score		82.8		

3.0 SITE DESCRIPTIONS

The following sections contain in-depth descriptions of each prime agricultural soil site. Assessment for all sites follow methodology contained in Appendix A. Each site description includes the final Storie Index score, total area of site, a boundary description of the site perimeter, as well as details of soil characteristics for each Storie Index parameter. Maps of each site are in Appendix C and a table containing all Storie Index scoring for each site is located in Appendix D.

3.1 SITE 1A (HOLE 1)

Storie Index Score: 85.5

The total area mapped for Site 1 (a, b & c) is 245,782 square feet (5.6 acre). This acreage is spread across a single site with some variability in slope, but cohesively similar in vegetation, and soil characteristics. This site is adjacent to a previously mapped site that can be matched up from a previous assessment. Appendix C contains a map showing the delineated area, area total in square feet, and plot holes. Appendix D contains a summary of the Storie Index rating for this site. Detailed findings for this prime agricultural soil assessment are included below.

Boundary Description

Site 1 (Hole 1) is on a moderately sloping upland terrace atop consolidated sedimentary parent material. The slope across the area is complex, averaging 8-% with most of it falling below 8% and some above 12%. Slopes over 15% were not included in this site. A downslope greater than 15% marks the boundary to the North. Forest boundary (veg change) demarcates the East, south boundaries while a downslope greater than 11% demarcates the boundary to the east, with a subsequent fence, drawing a hardline on the east and south boundaries.

Factor A – Physical Profile

Storie Index Characteristic VIII – Upland areas underlain by consolidated sedimentary rocks. Soil depth between 4 and 6-feet.

Factor B – Surface Texture

Texture by Feel: Loam.

Factor C – Slope

Average slope of 8%. Moderately Sloping

Factor X -

Drainage: Well drained. No redoximorphic features or restrictive layers throughout profile.

Alkali: Measured pH of 4.8 indicates no accumulation of alkaline minerals in soil. Well leached soil.

Nutrient: No accumulation of phytotoxic nutrients. EC measured at 0.15 dS/m.

Acidity: Very Strongly Acid. Measured pH, 4.8.

Erosion: No erosion features observed.

Microrelief: No significant microrelief observed.

3.2 SITE 1B (HOLE 2)

Storie Index Score: 82.9

The total area mapped for Site 1 (a, b & c) is 245,782 square feet (5.6 acre). This acreage is spread across a single site with some variability in slope, but cohesively similar in vegetation, and soil characteristics. This site is adjacent to a previously mapped site that can be matched up from a previous assessment. Appendix C contains a map showing the delineated area, area total in square feet, and plot holes. Appendix D contains a summary of the Storie Index rating for this site. Detailed findings for this prime agricultural soil assessment are included below.

Boundary Description

Site 1 (Hole 2) is on a moderately sloping upland terrace atop consolidated sedimentary parent material. The slope across the area is complex, averaging 8% with most of it falling below 8% and some above 12%. Slopes over 15% were not included in this site. This hole (Hole 2) connects the top to the bottom of this polygon. There is no boundary to the north and south for H3 and H1 Respectively. The Forest boundary (veg change) demarcates the east and west. The west boundary is also defined by a road as well as an upslope greater than 15%.

Factor A – Physical Profile

Storie Index Characteristic VIII – Upland areas underlain by consolidated sedimentary rocks. Soil depth between 4 and 6-feet.

Factor B – Surface Texture

Texture by Feel: Loam.

Factor C – Slope

Average slope of 8%. Moderately Sloping

Factor X -

Drainage: Well drained. Moderately Well drained. Redoximorphic features begin at 86.4cm.

Alkali: Measured pH of 4.9 indicates no accumulation of alkaline minerals in soil. Well leached soil.

Nutrient: No accumulation of phytotoxic nutrients. EC measured at 0.16 dS/m.

Acidity: Very Strongly Acid. Measured pH, 4.9.

Erosion: No erosion features observed.

Microrelief: No significant microrelief observed.

3.3 SITE 1c HOLE 3

Storie Index Score: 82.9

The total area mapped for Site 1 (a, b & c) is 245,782 square feet (5.6 acre). This acreage is spread across a single site with some variability in slope, but cohesively similar in vegetation, and soil characteristics. Appendix C contains a map showing the delineated area, area total in square feet, and plot holes. Appendix D contains a summary of the Storie Index rating for this site. Detailed findings for this prime agricultural soil assessment are included below.

Boundary Description

Site 1 (Hole 3) is on a moderately sloping upland terrace atop consolidated sedimentary parent material. The slope across the area is complex, averaging 8% with most of it falling below 8% and some above 12%. Slopes over 15% were not included in this site. This site is adjacent to a previously mapped site that can be matched up from a previous assessment which defines the boundary to the North. A downslope greater than 25%, coupled with a fence line, marks the boundary to the east. The southern boundary is portion of this section connects to the second hole on this site (Site 1). The western boundary is defined by a road and a downslope greater than 15%.

Factor A – Physical Profile

Storie Index Characteristic VIII – Upland areas underlain by consolidated sedimentary rocks. Soil depth between 4 and 6-feet.

Factor B – Surface Texture

Texture by Feel: Loam.

Factor C – Slope

Average slope of 8%. Moderately Sloping

Factor X -

Drainage: Moderately Well drained. Redoximorphic features begin at 86.4cm.

Alkali: Measured pH of 4.7 indicates no accumulation of alkaline minerals in soil. Well leached soil.

Nutrient: No accumulation of phytotoxic nutrients. EC measured at 0.27 dS/m.

Acidity: Very Strongly Acid. Measured pH, 4.7.

Erosion: No erosion features observed.

Microrelief: No significant microrelief observed.

3.3 SITE 2

Storie Index Score: 81.2

The total area mapped for Site 2 is 17,869 square feet (0.4 acres). This acreage is spread across a single site with cohesive similarities in slope, vegetation, and soil characteristics. Appendix C contains a map showing the delineated area, area total in square feet, and plot holes. Appendix D contains a summary of the Storie Index rating for this site. Detailed findings for this prime agricultural soil assessment are included below.

Boundary Description

Site 2 is on a moderately sloping upland soil atop sedimentary parent material. A vegetative change, from grass to forest, marks the boundary to the North, Northeast and West. An upslope greater than 11% marks the South/Southeast boundaries.

Factor A – Physical Profile

Storie Index Characteristic VIII – Upland areas underlain by consolidated sedimentary rocks. Soil depth between 4 and 6-feet.

Factor B – Surface Texture

Texture by Feel: Loam.

Factor C – Slope

Average slope of 8%. Moderately Sloping

Factor X -

Drainage: Moderately Well drained. Redoximorphic features begin at 71.1cm.

Alkali: Measured pH of 5.0 indicates no accumulation of alkaline minerals in soil. Well leached soil.

Nutrient: No accumulation of phytotoxic nutrients. EC measured at 0.16 dS/m.

Acidity: Very Strongly Acid. Measured pH, 5.0.

Erosion: No erosion features observed.

Microrelief: No significant microrelief observed.

3.3 SITE 3

Storie Index Score: 81.2

The total area mapped for Site 3 is 29,593 square feet (0.7 acres) This acreage is spread across a single site with cohesive similarities in slope, vegetation, and soil characteristics. Appendix C contains a map showing the delineated area, area total in square feet, and plot holes. Appendix D contains a summary of the Storie Index rating for this site. Detailed findings for this prime agricultural soil assessment are included below.

Boundary Description

Site 3 is on a flat to gently sloping upland soil atop sedimentary parent material. The slope across the area is complex and all slopes above 12% were not included in this polygon. Areas excluded are above 11% which would drop the storie index rating below 80%. The downslope increases quickly to the North and

West boundaries with an upslope defining the Southern boundary. A vegetative change, from grass to forest, marks the boundary to the East/Northeast.

Factor A – Physical Profile

Storie Index Characteristic VIII – Upland areas underlain by consolidated sedimentary rocks. Soil depth between 4 and 6-feet.

Factor B – Surface Texture

Texture by Feel: Loam.

Factor C – Slope

Average slope of 8%. Moderately Sloping

Factor X -

Drainage: Moderately Well drained. Redoximorphic features begin at 63.5cm.

Alkali: Measured pH of 4.9 indicates no accumulation of alkaline minerals in soil. Well leached soil.

Nutrient: No accumulation of phytotoxic nutrients. EC measured at 0.14 dS/m.

Acidity: Very Strongly Acid. Measured pH, 4.9.

Erosion: No erosion features observed.

Microrelief: No significant microrelief observed.

4.0 CONCLUSION

This report disclosed the findings and justifications for the prime agricultural soil assessments that were conducted on Maple Creek Ranch Corporation September 6th, 2019. These assessments adhered to the detailed methods and measurements of the Storie Index as set forth in the attached methodology (Appendix A). Landscape details and soil characteristics varied a little from site-to-site, but most were relatively similar with regards to the Storie Index parameters. There were three unique sites mapped, for a total area of 293,244 square feet (6.7 acre), that met with the standards set forth by the CMMLUO (i.e., Storie Index of 80% or higher).

Appendix A. Methodology for Prime Agricultural Soil Assessment

Methodology for Determining Prime Agricultural Soils

Desktop Assessment

Existing soil data can be found through the Humboldt County GIS portal which is based on Humboldt County's 1967 soil survey as well as the NRCS Web Soil Survey (WSS) which is based on Humboldt County's most recent soil survey. Surveyed soils are mapped at the third-order, which means boundaries are plotted by observation and interpretation of remotely sensed data. The soil boundaries are verified by traversing representative areas and by some transects. Third-order surveys are made for land uses that do not require precise knowledge of small areas or detailed soils information. Delineations have a minimum size of up to 40-acres (USDA, 1993).

It is important to note that although the Humboldt County soil survey ground mapping has been finished, it has not yet been completely published on the WSS. When a soil survey query in WSS yields a "NOTCOM" result, it means no digital data is available for the project area. Standard practice in "NOTCOM" areas is to contact the local NRCS Soil Survey Field Office to identify if any data exists within the area of interest.

Field Assessment

The Storie Index and LCC are methods for rating soils on their potential for use and productivity. Both methods look at the same characteristics: slope, soil profile depth, drainage, salinity, etc. The Storie Index derives its rating from current conditions; while the Land Capability Classification derives its rating not only from current conditions, but on the potential to overcome those conditions using proper management techniques. LCC Class I soils are broadly defined as soils that "have few limitations which restrict their use." In contrast, LCC Class II soils are those that "have some limitations that reduce the choice of plants or require moderate conservation practices." (Storie, 1978; USDA SCS, 1961). Due to the nature of the Storie Index to assess only the current conditions, the parameters and ratings are generally more rigid in their interpretation than the LCC.

The Storie Index method of soil rating is based on soil characteristics that govern the land's potential utilization and productive capacity and is independent of other physical or economic factors that might determine the desirability of growing certain plants at a given location (Storie, 1932). A rating, between 0% and 100%, is assigned to definable soil properties that are measured either in the field or in the lab. The overall Storie Index Rating is determined by factoring all the ratings together:

$$\text{Storie Index Rating} = \left[\frac{(\text{Factor A})}{100} \times \frac{(\text{Factor B})}{100} \times \frac{(\text{Factor C})}{100} \times \frac{(\text{Factor X})}{100} \right] \times 100$$

Table 1 describes the Storie Index parameters and general conditions for ratings. More detail on methodology for each parameter and the results for the assessed site are provided below.

Table 1. Storie Index soil properties and field methods (Storie, 1978).

Factor	Property	Highest Rating	Lowest Rating
A	Physical Profile Group	Based on landform type and soil development	
B	Surface Texture	Loamy Soils	Stony Soils, Dense Soils
C	Slope	Nearly Level/Gently Sloping (0 to 8%)	Steep/Very Steep (30 to over 45%)
X	<i>Rating of conditions other than A, B, or C</i>		
	Drainage	Well-drained	Waterlogged
	Alkali	Alkali-free	Strongly affected
	Nutrient (Fertility) Level	Very Low - Optimal	Detrimental nutrient accumulations
	Acidity	Neutral/Slight	Extremely Acidic/Extremely Basic
	Erosion	None/Slight	Severe
	Microrelief	Smooth	Hummocks and dunes

Methodology

Plots to undergo a complete Storie Index rating are found by slope measurements between 0 and 15%, vegetation (mostly open space, no wetland vegetation), and an examination of surface gravels. Locations that undergo a Storie Index rating are chosen because it has been determined to be the most representative part of the plot being evaluated. A soil core is excavated using a hand auger and the Storie Index rating is conducted. A sample of surface soil is taken for lab analysis, as well as the location being recorded with a Garmin GPS unit (accuracy < 15 meters). These rated soil holes are included on the site map.

The total number of holes excavated, rated, and sampled is based on the size of the plot area, uniformity of landscape surface, and vegetation within the plot area. Generally, inclusions of approximately an acre or less, if landscape variables (surface, vegetation) are consistent throughout, one hole is rated. If the plot exceeds an acre 1-2 holes per acre are rated and sampled or a transect is made.

Additionally, within each plot, confirmation holes are dug to evaluate the uniformity of the soil within a specific area and assist in the decision to include or exclude a portion from the plot. Confirmation holes are dug in areas where there is potential soil variation (i.e., in areas of vegetation change or topographic changes). For plots approximately one acre or less, 1-2 confirmation holes are dug. For plots over an acre, 1-4 confirmation holes per acre are dug. If a transect was made, confirmation holes are not necessary since a transect spans the entire plot. The confirmation holes are noted on field data sheets and the location is recorded with a Garmin GPS unit. These confirmation hole locations are included on the site map.

Plot boundaries are delineated by changes in land surface. Slope, soil type, gravel increases, vegetation change, and geomorphological features can all impact perimeter delineations. Field data sheets are used to record perimeter descriptions and these descriptions are included on the site maps along with a plot boundary and total square footage of passing area.

Factor A – Physical Profile Group

Factor A of the Storie Index rates the development of a soil profile. In alluvial soils, a high score indicates a younger undeveloped profile with an absence of gravelly subsoils and no Bt horizon (a horizon containing an accumulation of translocated clay). A lower score is given to older alluvial fans, plains and terraces when the presence of a Bt horizon or other restrictive features (i.e., clay pan, duripan, hardpan) can be confirmed (Storie, 1978; UC ANR,2008).

Upland soils that are formed from bedrock are rated based on depth to lithic (consolidated geologic material) or paralithic (softly consolidated or unconsolidated geologic material) contact (Storie, 1978; UC ANR,2008). The deeper the profile the higher the Storie Index score with a 100 being scored for upland soils that have profile of more than 6 feet (Storie, 1978). It should be noted that soil mapping parameters for Prime Farmland and Farmland of Statewide Importance have been established since the publication of the Storie Index in 1978. Both Prime Farmland and Farmland of Statewide Importance require an examination of effective rooting depth and other soil characteristics up to a depth of 40 inches (FMMP, 2016). Additionally, the LCC I requires a rooting depth of at least 36 inches and the LCC II requires a rooting depth of 20-36 inches (USDA SCS, 1961). These requirements demonstrate a consensus within the USDA and California Department of Conservation that farmland mapping include soils with profile depths of 40 inches or more as prime or agriculturally significant. Table 2 shows a revised scoring for upland soils to include effective rooting depth definitions of Prime Farmland and Farmland of Statewide Importance.

Table 2. Upland Soils/Effective Rooting Depth Score

Rooting Depth	Storie Index Score
>40 inches	100
30-40 inches	95
20-30 inches	90

Factor B – Surface Texture

Surface soil texture is determined using the texture by feel method. This method is the USDA standard field protocol for particle size analysis. If necessary, samples are sent to a lab for further particle size analysis using the hydrometer or micro-pipette method (USDA, 2014). Scoring rubric from Storie, 1978 is used for this rating.

Factor C – Slope

Slopes are measured in the field with clinometer (NRCS, 2012). Table 3 shows scoring rubric based on Storie 1978 but this scoring index removes the ranges for a more reproducible scoring method.

Table 3. Slope Scoring

Storie Index Class	Description	Score
A	Nearly Level (0-2%)	100
AA	Gently Undulating 0%	100
	Gently Undulating 1%	98
	Gently Undulating 2%	95

B	Gently sloping 3%	100
	Gently sloping 4-6%	98
	Gently sloping 6-8%	95
BB	Undulating 3%	100
	Undulating 4-6%	93
	Undulating 6-8%	85
C	Moderately Sloping 9-11%	95
	Moderately Sloping 12-14%	90
	Moderately Sloping 15%	80
CC	Rolling 9-11%	95
	Rolling 12-14%	90
	Rolling 15%	80

Factor X - Rating of conditions other than A, B, or C

Drainage – The subjectivity of the Storie Index drainage ratings has been addressed by an application of the natural drainage classes (i.e., the prevailing wetness conditions) as determined by the NRCS Soil Survey Manual (USDA, 1993) and the Drainage in Soil Surveys of California (USDA, 1989). Drainage is determined by observation to a four-foot depth of wetness, redoximorphic features, restrictive subsurface soil features (claypans, hardpans, etc...), increase in bulk density with depth, depth to bedrock, depth to unconsolidated bedrock (USDA, 1989). The Storie Index Rating, for various drainage classes is summarized in Table 4.

Table 4. Natural Drainage Classes and associated Storie Index Rating.

NRCS Classes	Storie Index Classes	Storie Index Rating (%)
Well Drained (WD)	Well Drained	100
Moderately Well Drained (MWD)	Fairly Well Drained	90
Somewhat Poorly Drained (SPD)		85
Poorly Drained (PD)	Moderately Waterlogged	40-80
Very Poorly Drained (VPD)	Badly Waterlogged	10-40

USDA, 1993; USDA, 1989

Alkali – If a pH value is 7.3 or more, it is considered alkaline (NRCS, 1998) and a carbonate test is conducted to quantify alkalinity (WREP, 2005). Generally, pH values for this region's soils are neutral to acidic, thus the alkali factor generally receives high scores.

Nutrient – Electrical conductivity (EC) and Sodium Absorption Ratio (SAR) are used to measure nutrient concentration in the soil. Having a low EC and SAR indicates a quality agriculture soil as management issues center mainly around accumulation of detrimental nutrients in soils (UC ANR, 2008). To evaluate nutrient levels, an EC measurement is taken from a saturation paste extract (WREP, 2005). If the EC result is 4 dS/m or lower, no SAR measurement is needed and a Storie Index rating of 100 is given. In this region, the heavily leached soils generally do not have high nutrient content, and typically receive high Storie Index ratings for nutrient level.

Acidity – pH is used to measure the acidity of the soil and is determined with a saturation paste (WREP, 2005). The Storie Index Rating, for various pH classes, is summarized in Table 5.

Table 5. Acidity Class, pH range and associated Storie Index Rating.

Classes	pH Range	Storie Index Rating (%)
Extremely acidic	3.5 – 4.4	40-90
Very strongly acidic	4.5 – 5.0	90
Strongly acidic	5.1 – 5.5	90-100
Moderately acidic	5.6 – 6.0	100
Slightly acidic	6.1 – 6.5	100
Neutral	6.6 – 7.3	100

NRCS, 1998; UC ANR 2008 (Figure 5A); FMMP

Erosion – Interpretation of erosion features in the field is conducted following the NRCS Field Book (NRCS, 2012) to properly evaluate erosion rating. Erosion types include none to slight, detrimental deposition, sheet erosion, gullies, and wind erosion.

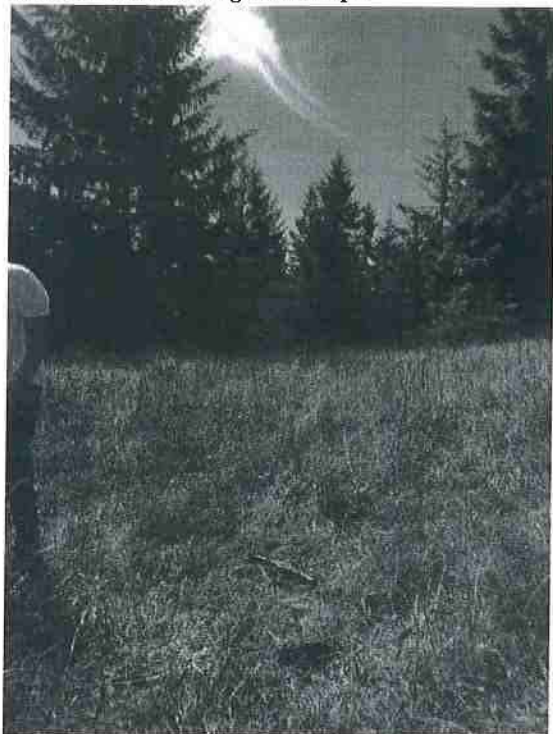
Microrelief – Microrelief is small, relative differences in elevation between adjacent areas. Interpretation of the site's microrelief was conducted following the NRCS Field Book (NRCS, 2012) to evaluate microrelief features. Examples include smooth, channels, hummocks, and dunes.

Citations

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- FMMP, 2016 - California Department of Conservation Farmland Mapping and Monitoring Program. Important Farmland Mapping Categories and Soil Taxonomy Terms.
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- NRCS, 2012 – Field Book for Describing and Sampling Soils, Version 3. National Soil Survey Center, Natural Resources Conservation Service, U. S. Department of Agriculture. 2012.
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http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052208.pdf
- WREP, 2005 - Gavlak, Ray; Horneck, Donald; Miller, Robert O. Plant, Soil and Water Reference Methods for the Western Region, Third Ed. 2005.

Appendix B. Representative Landscape/Auger Photographs

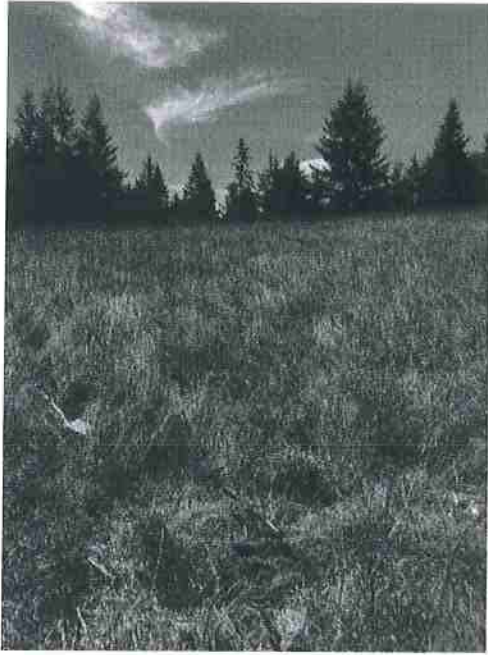
Site 1a. South Facing Landscape



Site 1a. Auger Profile



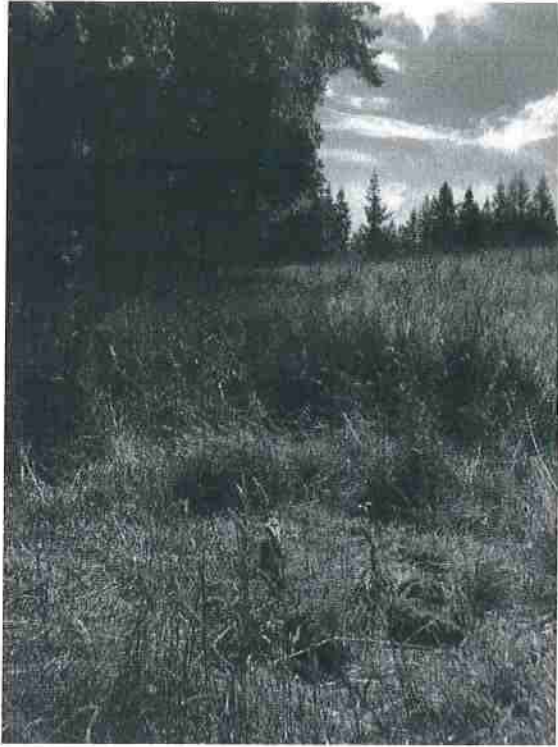
Site 1b. South Facing Landscape



Site 1b. Auger Profile



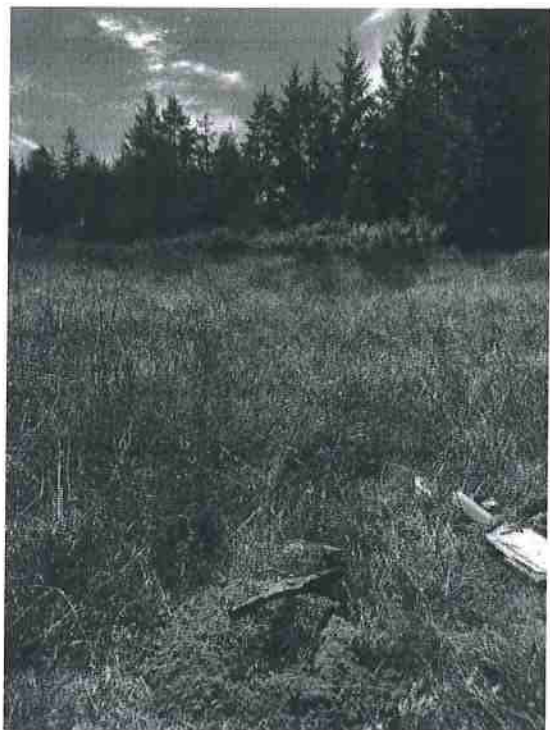
Site 1c. West Facing Landscape



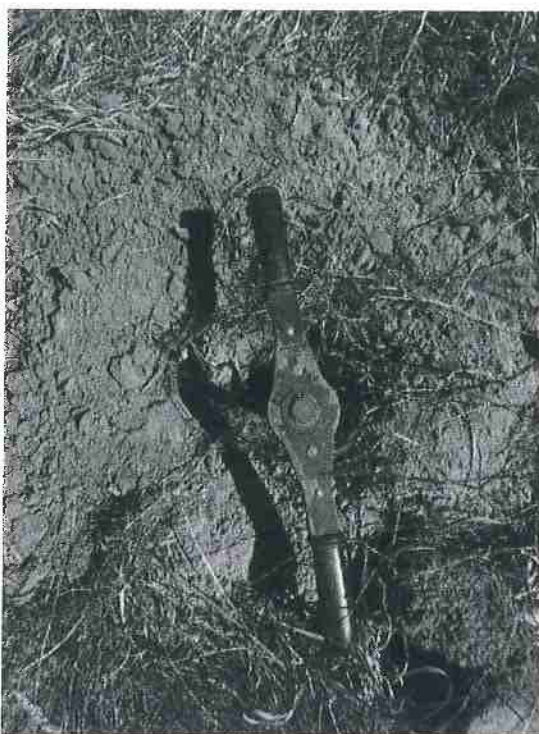
Site 1c. Auger Profile



Site 2. West Facing Landscape



Site 2. Auger Profile



Site 3. West Facing Landscape

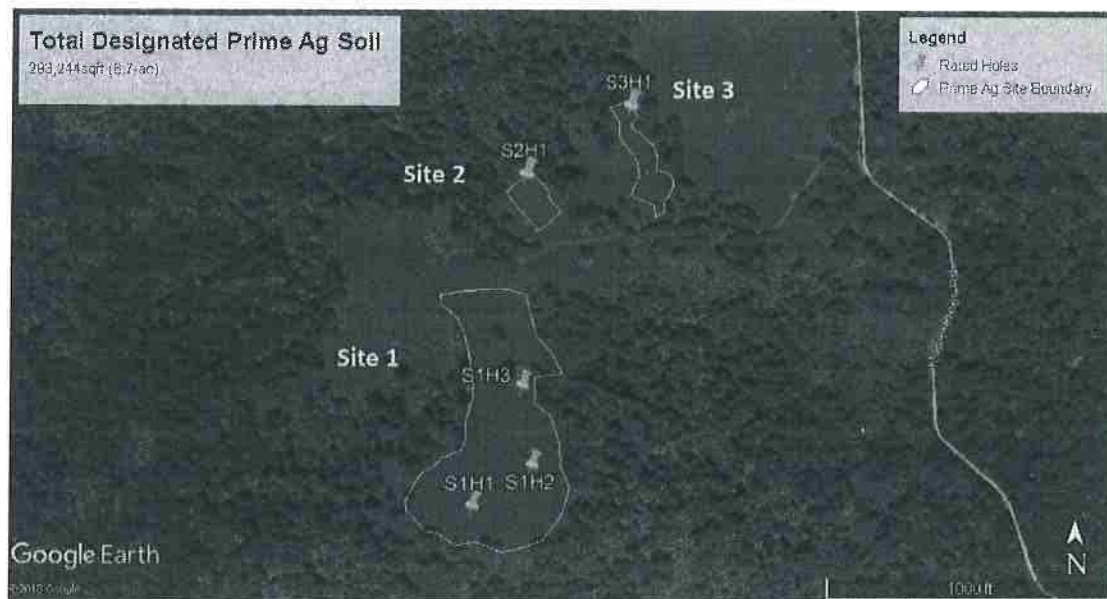


Site 3. Auger Profile



Appendix C. Site Maps

Comprehensive Map: Sites 1-3



The information on this map was derived from digital data from sources referenced above. Care was taken in the creation of this map, but depictions of boundaries are not authoritative. DBS cannot accept any responsibility for errors, omissions, or positional accuracy. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this image.

Site 1



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Site 2



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Site 3



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Appendix D. Storie Index Scoring

Site Name	Factor A Physical Profile		Factor B Surface Texture		Factor C Slope		Factor X												*Final Storie Score (%)
	Characteristic	Score (%)	Characteristic	Score (%)	Characteristic	Score (%)	Drainage		Alkali		Nutrient Level		Acidity		Erosion		Microrelief		
							Characteristic	Score (%)	Characteristic	Score (%)	Characteristic	Score (%)	Characteristic	Score (%)	Characteristic	Score (%)	Characteristic	Score (%)	
Site 1 - Hole 1	IIIV - Upland, Underlain by sedimentary PM	100	Loam	100	B - Gently Sloping, avg. 8%	95	WD	100	Not alkaline	100	Low, EC = 0.15	100	Very Strongly Acid, pH = 4.8	90	None	100	Smooth	100	85.5
Site 1 - Hole 2	IIIV - Upland, Underlain by sedimentary PM	100	Loam	100	B - Gently Sloping, avg. 8%	95	MWD	97	Not alkaline	100	Low, EC = 0.16	100	Very Strongly Acid, pH = 4.9	90	None	100	Smooth	100	82.9
Site 1 - Hole 3	IIIV - Upland, Underlain by sedimentary PM	100	Loam	100	B - Gently Sloping, avg. 8%	95	MWD	97	Not alkaline	100	Low, EC = 0.27	100	Very Strongly Acid, pH = 4.7	90	None	100	Smooth	100	82.9
Site 2	IIIV - Upland, Underlain by sedimentary PM	100	Loam	100	B - Gently Sloping, avg. 8%	95	MWD	95	Not alkaline	100	Low, EC = 0.16	100	Very Strongly Acid, pH = 5.0	90	None	100	Smooth	100	81.2
Site 3	IIIV - Upland, Underlain by sedimentary PM	100	Loam	100	B - Gently Sloping, avg. 8%	95	MWD	95	Not alkaline	100	Low, EC = 0.14	100	Very Strongly Acid, pH = 4.9	90	None	100	Smooth	100	81.2

*Storie Index Rating Calculation = [(Factor A)/100 x (Factor B) /100 x (Factor C) /100 x (Factor X) /100] x 100

Owner's Well Number 1Date Work Began 02/15/1999Date Work Ended 2/22/1999Local Permit Agency Humboldt County

Permit Number _____

Permit Date _____

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. XXXXXXXX

DWR Use Only -- Do Not Fill In

State Well Number/Site Number

Latitude

Longitude

APN/TRS/Other

Geologic LogOrientation ☒ Vertical ☐ Horizontal ☐ Angle Specify _____
Drilling Method Rotary Drilling Fluid Bentonite mud**Depth from Surface****Description**

Feet to Feet Describe material, grain size, color, etc

0	7	Brown Sandy Clay
7	9	Brown Sandy Clay W/ Gravel (Wet)
9	145	Grey Silty Clay
145	149	Grey Silty Clay And Gravel and Sea Shells
		3-4GPMs
149	188	Grey Silty Clay
188	228	Grey Gravel And Sea Shell Dry
228	240	Blue and Grey Sand and Gravel and Silty clay
240	250	Blue Sand, Clean Gravel and lots of Sea Shells
250	260	Green Clay Silty With son pee Gravel

**Well Owner**Name Maple Creek RanchMailing Address P.O. Box 1212City Eureka State Calif Zip 95502**Well Location**Address 14352 Maple Creek Rd.City Korbel County HumboldtLatitude _____ N Longitude _____ W
Deg. Min. Sec. Deg. Min. Sec.

Datum _____ Dec. Lat. _____ Dec. Long. _____

APN Book 313 Page 146 Parcel 004

Township _____ Range _____ Section _____

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West

East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- ☒ New Well
☐ Modification/Repair
☐ Deepen
☐ Other _____
☐ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ☒ Water Supply
☒ Domestic ☐ Public
☒ Irrigation ☐ Industrial
☐ Cathodic Protection
☐ Dewatering
☐ Heat Exchange
☐ Injection
☐ Monitoring
☐ Remediation
☐ Sparging
☐ Test Well
☐ Vapor Extraction
☐ Other _____

Total Depth of Boring 260 FeetTotal Depth of Completed Well 257 Feet**Water Level and Yield of Completed Well**Depth to first water 145 (Feet below surface)

Depth to Static _____

Water Level 145 (Feet) Date Measured _____Estimated Yield * 20 (GPM) Test Type Air Lift

Test Length _____ (Hours) Total Drawdown _____ (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	240	12	Blank	PVC Sch. 40	1/4	6.5	
240	250	12	Screen	PVC Sch. 40	1/4	6.5	Milled Slots
250	257	12	Blank	PVC Sch. 40	1/4	6.5	

Annular Material

Depth from Surface Feet to Feet	Fill	Description
0	20	Cement Slurry
20	257	Filter Pack 3/8 Pee Gravel

Attachments

- ☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other _____

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Rich Well Drilling

Person, Firm or Corporation

1251 Rail Road Dr.

Address

Mckinleyville

City

CA

State

95519

Zip

Signed _____

721799

C-57 Licensed Water Well Contractor

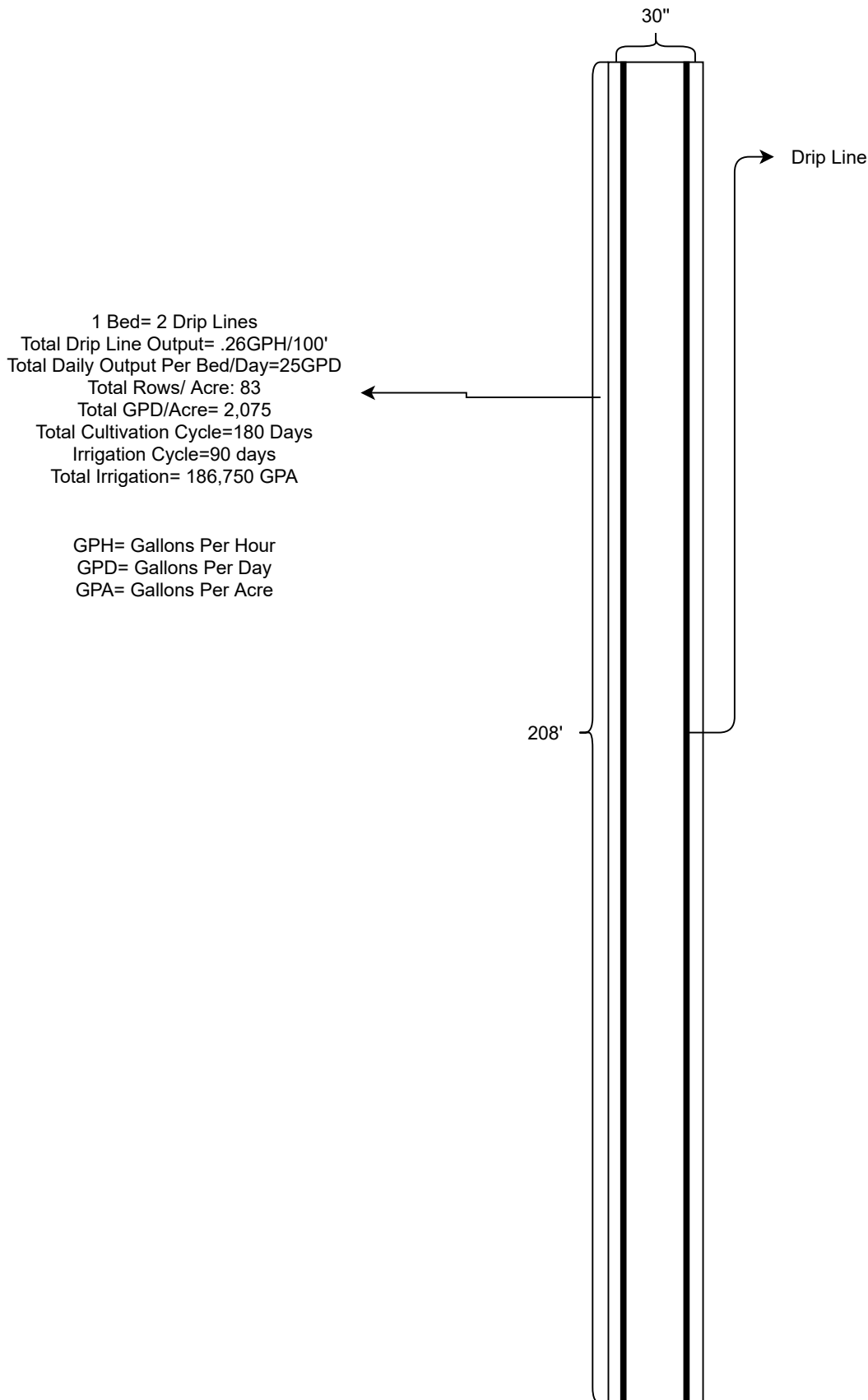
Date Signed _____

C-57 License Number _____

Maple Creek Ranch Corporation
Water Usage Calculations
1 Acre Outdoor Cultivation/Native Soils

Calculations Derived From: Netafim Irrigation

Prepared By:
Six Rivers Development LLC



Water Usage Log

Water Diversion Location:		Maple Creek Investments 315-011-009					
Water Diversion I.D. #:		1B16545CHUM					
County APPS #		12149					
Water Storage Capacity:		14,000 GAL					
Lower Flat							
Date		Time		Gal. Start		Gal. End	Flow Rate
11-Jun		10AM		34,200		35200	1000
14-Jun		10AM		35200		36500	1300
18-Jun		10AM		36500		37800	1300
22-Jun		10AM		37800		39100	1300
24-Jun		10AM		39100		40400	1300
27-Jun		10AM		40400		41900	1500
29-Jun		10AM		41900		43200	1300
2-Jul		10AM		43200		44400	1200
6-Jul		10AM		44400		45625	1225
9-Jul		10AM		45625		46925	1300
13-Jul		10AM		46925		48225	1300
16-Jul		10AM		48225		49427	1300
20-Jul		10AM		49427		50732	1301
23-Jul		10AM		50732		52032	1300
27-Jul		10AM		52032		53332	1300
30-Jul		10AM		53332		54633	1301
3-Aug		10AM		54633		57236	2603
6-Aug		10AM		57236		58550	1314
10-Aug		10AM		58550		59851	1301
13-Aug		10AM		59851		61163	1307
15-Aug		10AM		61163		62563	1400
18-Aug		10AM		62563		63864	1301
21-Aug		10AM		63864		65903	2039
24-Aug		10AM		65903		68116	2213
27-Aug		10AM		68116		69958	1842
30-Aug		10AM		69958		72628	2760
2-Sep		10AM		72628		74736	2108
5-Sep		10AM		74736		76036	1300
8-Sep		10AM		76036		77336	1300
11-Sep		10AM		77336		78735	1399
14-Sep		10AM		78735		80156	1321
17-Sep		10AM		80156		81460	1306

Six Rivers Development LLC
2017-2018

Water Usage Log

24-Sep		10AM		81460		82900		1440
28-Sep		10AM		82900		83200		300
2-Oct		10AM		83200		83500		300
7-Oct		10AM		83500		83800		500
11-Oct		10AM		83800		84100		300
							Total	50181

Water Usage Log

Water Diversion Location:		Maple Creek Investments 315-011-009					
Water Diversion I.D. #:		1B16545CHUM					
County APPS#		12149					
Water Storage Capacity:		14,000					
UPPER FLAT							
Date	Time		Gal. Start		Gal. End		Total Gal
11-Jun	10AM		7300		7800		500
14-Jun	10AM		7800		8075		275
18-Jun	10AM		8075		8300		225
22-Jun	10AM		8300		8550		250
24-Jun	10AM		8550		8800		250
27-Jun	10AM		8800		9100		300
29-Jun	10AM		9100		9400		300
4-Jul	10AM		9400		9650		250
6-Jul	10AM		9650		9950		300
9-Jul	10AM		9950		10200		250
13-Jul	10AM		10200		10358		250
16-Jul	10AM		10358		10658		300
20-Jul	10AM		10658		10958		300
24-Jul	10AM		10958		11253		300
27-Jul	10AM		11258		11558		300
30-Jul	10AM		11558		11858		300
3-Aug	10AM		11858		12458		600
6-Aug	10AM		12458		12758		300
10-Aug	10AM		12758		13065		310
13-Aug	10AM		13065		13370		302
15-Aug	10AM		13370		13670		300
18-Aug	10AM		13670		13975		305
21-Aug	10AM		13975		14356		381
24-Aug	10AM		14356		14714		358
27-Aug	10AM		14714		15057		343
30-Aug	10AM		15057		15451		394
2-Sep	10AM		15451		15857		406
5-Sep	10AM		15857		16156		299
8-Sep	10AM		16156		16457		301
11-Sep	10AM		16457		16857		400
14-Sep	10AM		16857		17256		299
17-Sep	10AM		17256		17557		301

Six Rivers Development LLC.

2017-2018

Water Usage Log

24-Sep		10AM		17557		17865		310
28-Sep		10AM		17865		18300		435
2-Oct		10AM		18300		18600		300
11-Oct		10AM		18900		19200		300
							Total	11594

12154



Projected Ground Disturbance Notice

Maple Creek Ranch Corporation

APN: 313-145-006/APPS: 12154

Maple Creek Ranch Corp. will be planting the crop in native soils using traditional agricultural methods to mend and work the soil. Disking, tilling, plowing, and row/mounding equipment will be used to break soil compaction and provide workable soil for the crop. Estimated depth of the soil preparation for the crop is not estimated to exceed 12" or one foot.

Additionally, soil grading to provide road accessibility will adhere to State and County requirements regarding width and slope. Grading depth for access roads is estimated not to exceed 12" or one foot.

Lastly, irrigation requirements will adhere to California building requirements with regards to plumbing, which require a minimum burial depth of plumbing supply lines on 18" as per title 8 section 536. The excavation of the trench for the irrigation supply will utilize a trencher blade which is 8" wide.

Title 8 Sec. 536:

Underground piping shall be buried not less than 18 inches below the surface of the ground unless otherwise protected. All underground piping shall be protected from corrosion by coating in compliance with Section 533(b) or equivalent. Zinc coatings (galvanizing shall not be considered adequate protection for piping below ground.