

Biological Survey Report

Shively, Humboldt County, California

APN 209-191-018

Prepared for:

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May 22, 2019



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I. Summary of Findings and Conclusions

The Project at parcel APN 209-191-018, located in Shively in Humboldt County, California (Figure 1), involves proposed new *Cannabis* cultivation totaling 30,000 square feet (Figure 2). The proposed cultivation method is full-term outdoor *Cannabis* cultivation, involving no use of greenhouses, lights, fans, or permanent structures of any kind (see Section II).

This Biological Report reviews the project at the above APN to determine to what extent wildlife species currently listed, proposed for listing, or of special concern would be affected (see Table 4). This Report also reviews potential effects on sensitive plant species (Table 3) and sensitive natural communities.

No sensitive wildlife species, sensitive plant species, or sensitive natural communities were identified in the proposed Project area during the field survey. It has been determined that the project and operations are unlikely to affect northern spotted owl, marbled murrelet, willow flycatcher, or any sensitive plant species or sensitive natural communities.

II. Introduction, Background, and Project Understanding

The purpose of this Biological Report is to review the project in sufficient detail to determine potential impacts to wildlife species currently listed or formally proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA) or designated as sensitive by the California Department of Fish and Wildlife (CDFW); these species are hereinafter referred to as special status species. Species with potential habitat present, or whose presence was not confirmed but potentially occur in the general area, are considered in further detail and include northern spotted owl, marbled murrelet, and willow flycatcher. All species with the potential to occur in the area are reviewed in Section IV.

This report also reviews potential impacts to any plant species that are listed, candidates for listing, or proposed for listing under the ESA, CESA and the California Native Plant Protection Act and or meet the definition of rare or endangered under the California Environmental Quality Act (CEQA), hereinafter referred to as sensitive plants. Sensitive plant species known to occur in the 9-Quad area surrounding the Project are listed in Table 3.

Furthermore, this report reviews existing or potential impacts to sensitive natural communities, riparian plant communities, and to riparian vegetation function.

Project Site

The project is located on a 53-acre parcel (APN 209-191-018-000) in Shively, Humboldt County, approximately 0.5 miles east of US Highway 101, immediately adjacent to the main stem Eel river corridor. The site is within the USGS 7.5' quadrangle Redcrest, T01N, R02E, Sec 29 HB&M. This parcel primarily includes historic farmland within the 100-year floodplain of the Eel river, at an

approximate elevation of 120 feet above sea level. The parcel is located on Shively Flat, a fluvial terrace of the Eel river and an agricultural community (Photo 1). The surrounding parcels on the flat are primarily in active agricultural production with some residences, and the surrounding forest to the north, east and south are in private timber production. Humboldt Redwoods State park (HRSP) lies across the Eel River to the west.

There are 10,000 square feet of existing California state-licensed *Cannabis* cultivation on the parcel. This operation includes no use of greenhouses, lights, or fans (Photo 5). Additionally, New Moon Organics, a CCOF-certified organic produce farm, operates on the parcel, with approximately 40 acres under cultivation with fruit and vegetable crops (Photo 4).

Project Description

The proposed Project includes 30,000 square feet of full-term outdoor *Cannabis* production. The proposed cultivation methods include no lights, generators, or fans. Propagation will occur in temporary structures with no lights. Drying will occur in temporary structures, utilizing fans and dehumidifiers powered by grid electricity from PG&E. As a full-term operation, drying activity will only occur in the fall. No irrigation is required for cultivation, as the operators utilize dry farming techniques. Dry farming is a traditional agricultural practice where specific tillage and planting techniques allow crops to access and utilize water occurring naturally in the soil profile. Water utilized for propagation is supplied from an existing 3,000-gallon supply of rainwater catchment. No soil amendments, fertilizers, or pesticides, or support netting materials are proposed for use.

Biological Description

The project parcel, located on the east side of the Eel River, has been farmed for over 100 years, with over 40 acres in active produce production for the last 15 years. The westernmost 10 acres of the parcel are vegetated by riparian forest and scrub, composed primarily of black cottonwood (*Populus trichocarpa*), California bay (*Umbellularia californica*), red alder (*Alnus rubra*), coast redwood (*Sequoia sempervirens*), arroyo willow (*Salix lasiolepis*), and coyote brush (*Baccharis pilularis ssp. pilularis*), with an understory of poison oak (*Toxicodendron diversilobum*) and California blackberry (*Rubus ursinus*). A railroad easement bisects the parcel east to west, and the elevated track is heavily vegetated by big leaf maple (*Acer macrophyllum*) and poison oak. Panther creek flows west across the northern parcel boundary before it flows into the Eel river. Shively Creek is shown to flow along the south side of the railroad easement on the USGS Topo Quad map (Figure 1), but was redirected by the U.S. Army Corps of Engineers to flow directly to Panther Creek over 50 years ago (Figure 2). No evidence of the former channel remains. The proposed project footprint is located on the southwest side of the railroad easement and is over 200 feet from any watercourses and is over 300 feet from the bank of the Eel. The proposed project footprint lies entirely within an actively farmed portion of the parcel, which is tilled and planted with vegetable and cover crops annually. No natural vegetation communities occur within this area. See Figure 2 and Photos 2 and 3.

Soils within the site are described by the NRCS as Map Unit 187—Pepperwood-Shivelyflat complex, 0 to 2 percent slopes (NRCS 2019). These soils have parent materials of alluvium derived from mixed sedimentary sources (NRCS 2019). See Appendix B for soil maps.

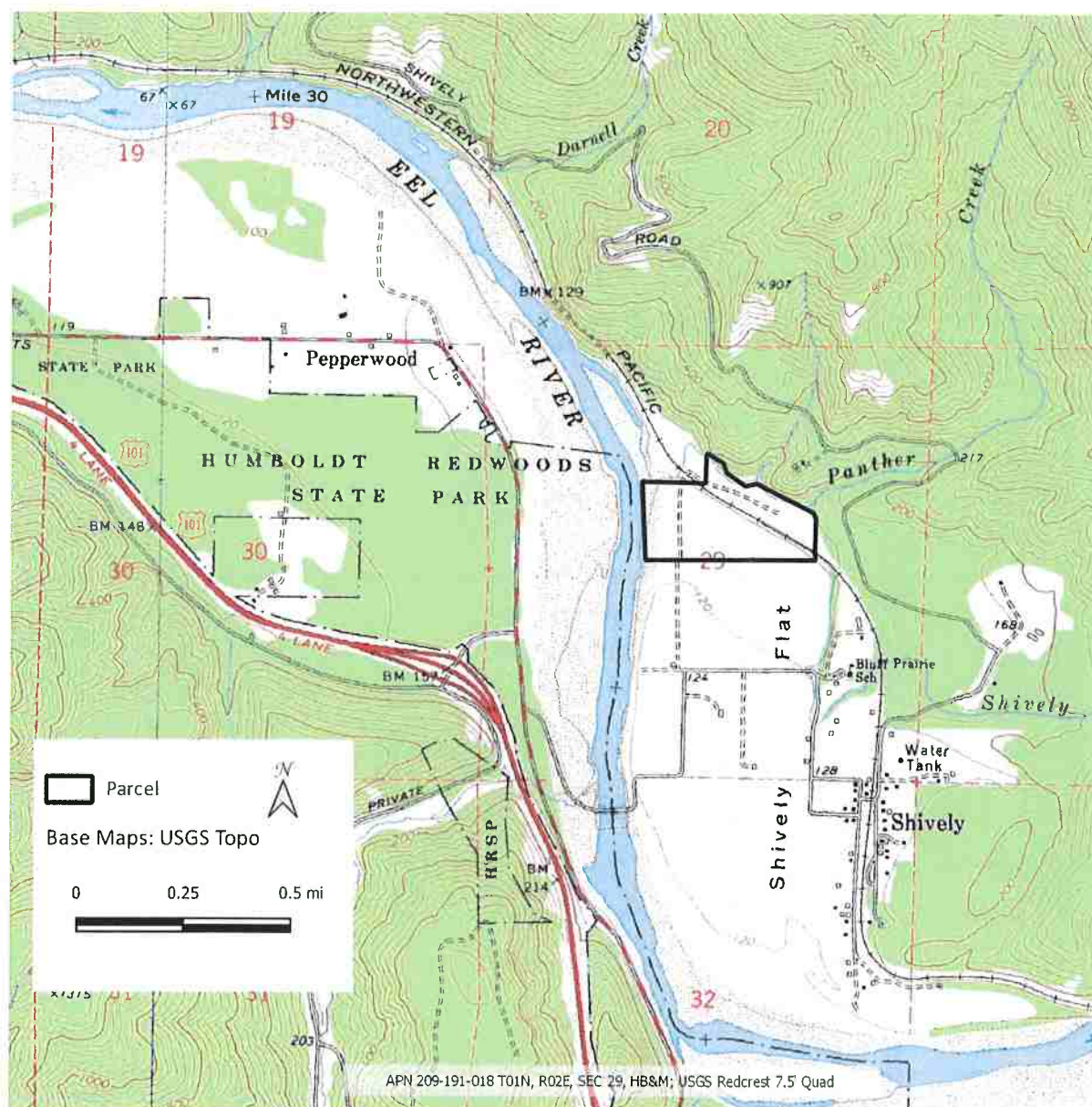


Figure 1. Vicinity map for APN 209-191-018



Figure 2. Project map for APN 209-191-018

III. Methods

Pre-Field Review

Wildlife

Prior to the survey, the CDFW California Natural Diversity Data Base (CNDDDB 2019) of wildlife species occurrences for Humboldt County was queried for a nine-quad area around the parcel, to determine which special status species may occur and to compile a target species list (Table 1).

A CNDDDB database search for all special status species within a 1-mile radius of the project revealed a polygon, covering the entire USGS 7.5' Redcrest quadrangle, representing the American peregrine falcon (*Falco peregrinus anatum*). This occurrence, from 2017, was reported from within a timber harvest plan area. Additional occurrences in the vicinity include foothill yellow-legged frog (*Rana boylei*) from the confluence of the Eel river and Bear creek, 0.3 miles south of the parcel (2017); a marbled murrelet (*Brachyramphus marmoratus*) occurrence reported from the same confluence (1992; presumed extant); and a southern torrent salamander (*Rhyacotriton variegatus*) reported one mile west of Shively on the opposite of the Eel river from the parcel (1994; presumed extant).

Table 1. CNDDDB list of potential special status wildlife species in the Redcrest 9-Quad area.

Common Name	Scientific Name	Federal / State Listing
golden eagle	<i>Aquila chrysaetos</i>	Fully Protected
northern goshawk	<i>Accipiter gentilis</i>	State Special Concern (SSC)
American peregrine falcon	<i>Falco peregrinus anatum</i>	Delisted, Fully Protected
Cooper's hawk	<i>Accipiter cooperii</i>	Watch List
sharp-shinned hawk	<i>Accipiter striatus</i>	Watch List
osprey	<i>Pandion haliaetus</i>	Watch List
northern spotted owl	<i>Strix occidentalis caurina</i>	Federal and State Threatened
marbled murrelet	<i>Brachyramphus marmoratus</i>	State Endangered
bank swallow	<i>Riparia riparia</i>	State Threatened
Humboldt marten	<i>Martes caurina humboldtensis</i>	State Endangered
fisher- West Coast DPS	<i>Pekania pennanti</i>	Proposed & Candidate Threatened
Sonoma tree vole	<i>Arborimus pomo</i>	SSC
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SSC
western red bat	<i>Lasiurus blossevillei</i>	SSC
western pond turtle	<i>Emys marmota</i>	SSC
Pacific tailed frog	<i>Ascaphus truei</i>	SSC
northern red-legged frog	<i>Rana aurora</i>	SSC
foothill yellow-legged frog	<i>Rana boylei</i>	Candidate State Threatened
southern torrent salamander	<i>Rhyacotriton variegatus</i>	SSC
coast cutthroat trout	<i>Oncorhynchus clarkii clarkii</i>	SSC

There are four northern spotted owl (NSO) activity centers (ACs) located in the vicinity of this project, the closest being HUM0167 at 0.73 miles to the northwest. This AC, along with HUM0521, is located on the same side of the Eel river as the parcel; the remaining ACs are located on the opposite side of the Eel river, to the west of the parcel (Figure 3). The concentration of northern spotted owl ACs is not unexpected given the proximity of old growth redwood trees in HRSP. Nesting pairs have not been reported for any of these ACs in recent years (Table 2) but habitat remains, and therefore they are considered potentially occupied.

The survey protocol for NSO ACs in redwood (coastal) habitat (US Fish and Wildlife Service, Revised 2012) requires a 0.7-mile disturbance buffer. However, the Humboldt County Commercial Cannabis Land Use Ordinance 2.0 states that a 1.3-mile disturbance buffer is required, which is consistent with the NSO protocol for non-redwood (inland) habitats. For the purposes of this report, we delineate the smaller disturbance buffer (Figure 3) since the parcel is within the redwood habitat but discuss all ACs within the larger buffer.

Table 2. Northern spotted owl ACs in the vicinity of APN 209-171-003 (CNDDB 2019)

NSO Activity Center	Reported Positive Data	Reported Negative Data	Approximate Distance to Project (miles)
HUM0167	1988-2000, 2006, 2013-2014 nesting pair; 2015 single male	none	0.73
HUM0521	1991-2005, 2008-2009 nesting pair; 2012 single female	2006, 2010-2011, 2013-2016	0.90
HUM0715	1994-1995, 2003, 2005-2006 nesting pair; 2008-2009 single male	1998-2000, 2010-2016	1.24
HUM0616	2009, 2013 pair; 2011 nesting pair; 2012, 2015 single female	2014-2017	1.30

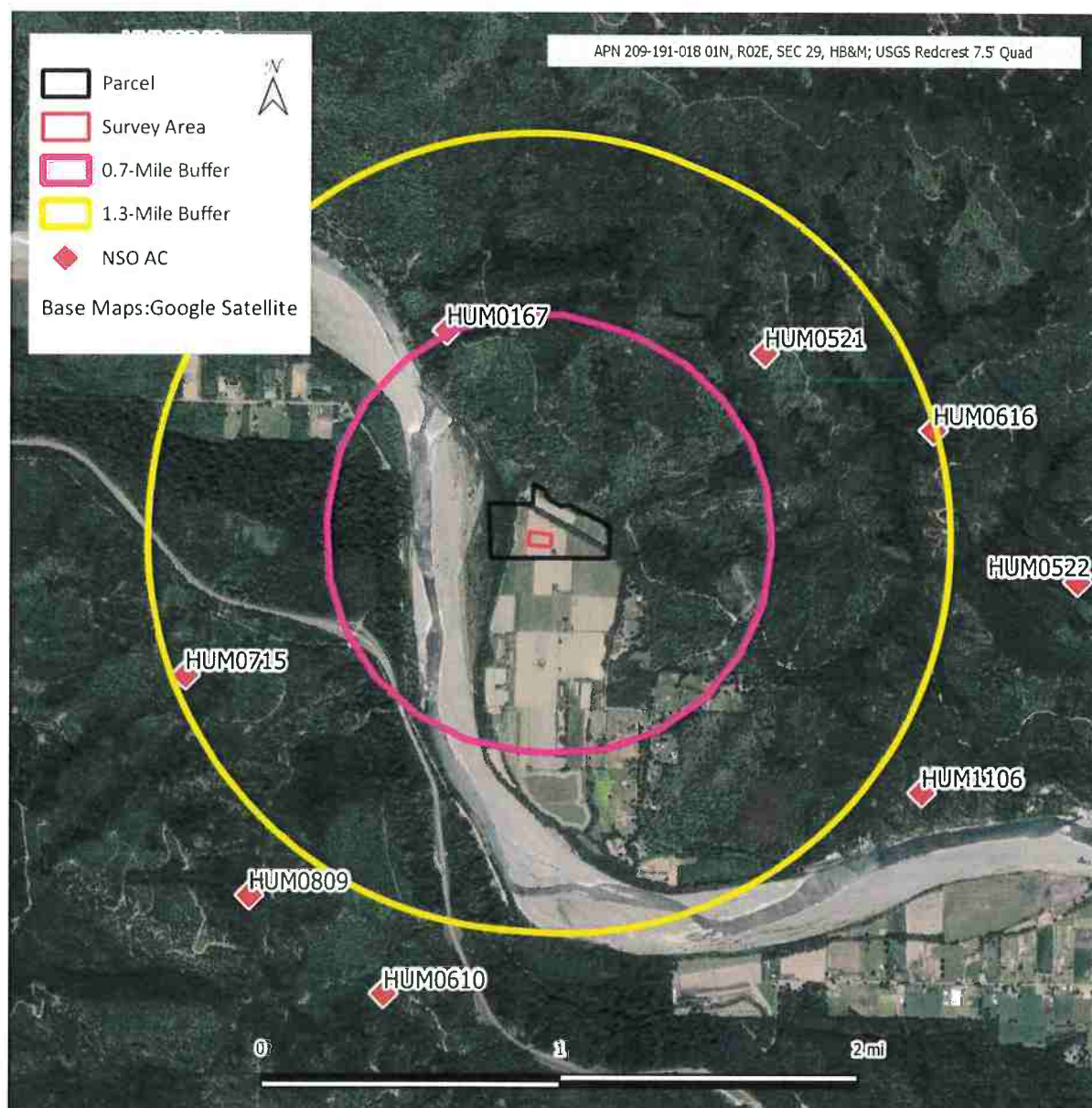


Figure 3. Northern spotted owl ACs in the vicinity of APN 209-191-018

Plants

Additionally, the current inventories of the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2019a), the CNDDDB were consulted to determine which special status plant species may occur within the project area and to compile a target species list. A nine-quad query of CNDDDB and CNPS Inventory records resulted in 27 special status vascular and nonvascular plant species (Table 3). These scoping strategies are consistent with

California Department of Fish and Wildlife protocols (CDFW 2018a) and the California Environmental Quality Act (State of California 2001).

Botanical taxonomy and nomenclature conform to *The Jepson Manual, 2nd Edition* (Baldwin et al. 2012) and recent circumscriptions in the Jepson eFlora (Jepson Flora Project 2019). Common names of plant species are derived from The Calflora Database (Calflora 2019). Nomenclature for special-status plant species conforms to the *Inventory of Rare and Endangered Plants of California* (CNPS 2019) and *Special Vascular Plants, Bryophytes and Lichens List* (CDFW 2018c).

Vegetation communities described herein conform to *California Vegetation* (Holland and Keil 1995), the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and/or *A Manual of California Vegetation* (Sawyer et al. 2009).

Table 3. Target species list: CNPS Rare Plant Rank (CNPR) 1-4 plants known to occur in the Redcrest 9-Quad area (CNPS 2019a).

Scientific Name	Common Name	CRPR	SRank	Blooming Period	Habitat	Elevation Low (ft)	Elevation High (ft)
<i>Astragalus agnicidus</i>	Humboldt County milk-vetch	1B.1	S2	Apr-Sep	Broadleafed upland forest, North Coast coniferous forest	390	2625
<i>Calamagrostis foliosa</i>	leafy reed grass	4.2	S3	May-Sep	Coastal bluff scrub, North Coast coniferous forest	0	4005
<i>Carex arcta</i>	northern clustered sedge	2B.2	S1	Jun-Sep	Bogs and fens, North Coast coniferous forest (mesic)	195	4595
<i>Castilleja ambigua</i> var. <i>ambigua</i>	johnny-nip	4.2	S3S4	Mar-Aug	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins	0	1425
<i>Collomia tracyi</i>	Tracy's collomia	4.3	S4	Jun-Jul	Broadleafed upland forest, Lower montane coniferous forest	980	6890
<i>Coptis laciniata</i>	Oregon goldthread	4.2	S3?	(Feb)Mar-May(Sep-Nov)	Meadows and seeps, North Coast coniferous forest (streambanks)	0	3280
<i>Downingia willamettensis</i>	Cascade downingia	2B.2	S2	Jun-Jul(Sep)	Cismontane woodland (lake margins), Valley and foothill grassland (lake	45	3640

					margins), Vernal pools		
<i>Epilobium septentrionale</i>	Humboldt County fuchsia	4.3	S4	Jul-Sep	Broadleafed upland forest, North Coast coniferous forest	145	5905
<i>Erythronium oregonum</i>	giant fawn lily	2B.2	S2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps	325	3775
<i>Erythronium revolutum</i>	coast fawn lily	2B.2	S3	Mar-Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	0	5250
<i>Gilia capitata ssp. pacifica</i>	Pacific gilia	1B.2	S2	Apr-Aug	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland	15	5465
<i>Lathyrus glandulosus</i>	sticky pea	4.3	S3	Apr-Jun	Cismontane woodland	980	2625
<i>Lilium kelloggii</i>	Kellogg's lily	4.3	S3	May-Aug	Lower montane coniferous forest, North Coast coniferous forest	5	4265
<i>Lilium rubescens</i>	redwood lily	4.2	S3	Apr-Aug(Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	95	6265
<i>Listera cordata</i>	heart-leaved twayblade	4.2	S4	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	15	4495
<i>Lycopodium clavatum</i>	running-pine	4.1	S3	Jun-Aug(Sep)	Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic)	145	4020
<i>Mitellastra caulescens</i>	leafy-stemmed mitrewort	4.2	S4	(Mar)Apr-Oct	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	15	5575

<i>Montia howellii</i>	Howell's montia	2B.2	S2	(Jan-Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools	0	2740
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	2B.2	S2S3	(Jan-Apr)May-Jul(Aug)	Coastal scrub, North Coast coniferous forest	95	2135
<i>Piperia candida</i>	white-flowered rein orchid	1B.2	S3	(Mar)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	95	4300
<i>Pityopus californicus</i>	California pinefoot	4.2	S4	(Mar-Apr)May-Aug	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	45	7300
<i>Pleuropogon refractus</i>	nodding semaphore grass	4.2	S4	(Mar)Apr-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest	0	5250
<i>Ribes roezlii</i> var. <i>amictum</i>	hoary gooseberry	4.3	S4	Mar-Apr	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	390	7545
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	4.2	S3	(Mar)Apr-Aug	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland	0	2395
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	1B.2	S2	(Apr)May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	45	2885
<i>Tiarella trifoliata</i> var. <i>trifoliata</i>	trifoliolate laceflower	3.2	S2S3	(May)Jun-Aug	Lower montane coniferous forest, North Coast coniferous forest	555	4920
<i>Usnea longissima</i>	Methuselah's beard lichen	4.2	S4		Broadleafed upland forest, North Coast coniferous forest	160	4790

*Listing codes are as follows: CRPR 1B = rare, threatened, or endangered in CA and elsewhere; CRPR 2B = rare, threatened, or endangered in CA, but more common elsewhere; CRPR 3 = plants about which more information is needed; a review list; CRPR 4 = of limited distribution or infrequent throughout a broader area in California. Ranks at each level also include a threat rank and are determined as follows: 0.1-Seriously threatened in California; 0.2-Moderately threatened in California; 0.3-Not very threatened in California (CNPS 1, 2018). **S1: Fewer than 6 viable occurrences worldwide/ statewide, and/ or up to 518 hectares; S2: 6-20 viable occurrences worldwide/ statewide, and/ or more than 518-2,590 hectares; S3: 21-100 viable occurrences worldwide/ statewide, and/ or more than 2,590-12,950 hectares; S4: Greater than 100 viable occurrences worldwide/ statewide, and/ or more than 12,950 hectares; S5: Demonstrably secure because of its worldwide/ statewide abundance. Additional Threat Ranks: 0.1=Very threatened; 0.2=Threatened; 0.3= No current threat known.

Field Survey

On May 20th, 2019, biologist Claire Brown conducted a site visit to survey the proposed Project area for all plant and animal species present, and for potential habitat for any sensitive plant or animal species. Claire has a B.S. in Ecology and Evolutionary Biology from the University of Tennessee and has been conducting biological field work in California for 7 years. The survey was conducted for approximately 2.5 hours on a cool (67°F/19°C), cloudy afternoon. The Survey Area includes the proposed project area and a 150-foot buffer. The entire Survey Area was comprehensively traversed, and all plant and animal species observed within the Survey Area, the surrounding vegetation types, and landforms were recorded. The survey timing was seasonally appropriate for detection of sensitive plant species with the potential to occur within the habitat found within the Survey Area, including maple-leaved checkerbloom (*Sidalcea malachroides*), Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*), nodding semaphore grass (*Pleuropogon refractus*) (Table 3). A phenology reference site for Siskiyou checkerbloom, located in Hydesville, CA, was visited on May 9 and found to be in bloom and detectable. This survey was floristic in nature, and all species were identified to the taxonomic level necessary to determine status.

IV. Results and Discussion

Summary of Findings

No listed or special status plant or animal species were detected during the survey. The potential for project impacts on special status and additional wildlife species of interest is presented in Table 4, below, where the project's potential effects on species are considered on a case-by-case basis, considering home range, habitat, and sensitivity to disturbance. All species detected during the survey are listed in Table 5. No spotted owl or marbled murrelet nesting habitat exists on the parcel, despite the proximity of northern spotted owl ACs (Figure 3). Some portions of the riparian forest on the western portion of the parcel could potentially provide willow flycatcher habitat, but this area will not be impacted and is over 200 feet away from all proposed Project activity. Furthermore, this project will not generate any additional noise or light disturbances and

will not alter the existing ambient noise or light conditions on the area. Therefore, given the proposed operation methods, the Project is not likely to impact northern spotted owl, marbled murrelet, or willow flycatcher if they are present in adjacent habitat. No sensitive plants or special status plants, or potential habitat was found within the Survey Area. No sensitive natural communities were found within the project footprint.

Survey Results and Discussion

Habitat Description

The Survey Area includes a flat (less than 2% slope) open area under active annual vegetable crop production. At the time of the survey, the proposed footprint had recently been tilled to incorporate a cover crop mix composed of oats, bell beans, vetch clover and other crops. No surface water cover materials were found within the survey area. No natural vegetation communities exist within the Survey Area. See Photos 2, 3, and 4.

Wildlife

The approximately 10 acres of riparian forest on the western portion of the parcel, between the Survey Area and the Eel River, could provide some nesting habitat for sharp-shinned hawk in the cottonwood overstory. However, there is not sufficient forested habitat on the parcel or in the riparian area to support the species of concern from Table 1 (golden eagle, northern goshawk, Coopers hawk, Humboldt marten, fisher, Sonoma tree vole) nor any permanent structures that may provide additional habitat for bat species (Townsend's big-eared bat, western red bat), although foraging in the vicinity is presumed likely by most of these species due to the proximity of the Eel River, and Humboldt Redwoods State Park. There is not aquatic habitat to support pacific tailed frog, foothill Yellow legged frog or southern torrent salamander, but it is presumed habitat exists in the adjacent tributaries to the Eel river, such as Bear creek and Panther creek. Humboldt Redwoods State Park is located directly across the Eel river from the parcel (Figure 3) and is expected to have the habitat necessary to support riparian species.

Use of the Eel river corridor is expected by the remaining special status wildlife species: osprey, American peregrine falcon, bank swallow, western pond turtle, northern red-legged frog and coast cutthroat trout.

No NSO Activity Centers occur within the 0.7-mile coastal habitat buffer. Three of the four ACs within the 1.3-mile buffer are located across the Eel river and west of HRSP, suggesting any potential disturbance created by this project will be minimized by highway and, to a lesser extent, river noise. The two ACs north of the parcel also likely experience ambient noise related to the Eel river prior to low summer flows.

Table 4. Special status and additional species of interest and potential project impacts

Common Name <i>Scientific Name</i>	Listing Status	General Habitat Description	Presence of Suitable Habitat w/in Site?	Potentially Affected by Project?	Comments
BIRDS					
golden eagle	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert	No	No	Parcel may be in vicinity of habitat; project impacts unlikely
northern goshawk	SSC	Within, and in vicinity of, coniferous forest; uses old nests, and maintains alternate sites	No	No	Some nesting/foraging may be present, but unlikely; project impacts unlikely
American peregrine falcon	FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures	No	No	Some large rock outcrops typically for nesting for this species may be in the vicinity; project impacts unlikely
Cooper's hawk	WL	Woodland, chiefly of open, interrupted or marginal type	No	No	Some nesting/foraging habitat may be present, but unlikely to have any impacts
sharp-shinned hawk	WL	Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas.	No	No	Likely to use riparian areas of the Eel river corridor; project impacts unlikely
osprey	WL	Ocean shore, bays, freshwater lakes, and larger streams	No	No	Likely uses Eel river corridor for nesting, feeding, roosting; project impacts unlikely
northern spotted owl	FT, ST	Old-growth forests or mixed stands of old-growth and mature trees; occasionally in younger forests with patches of big trees	No	No	Closest AC within 0.9 miles, current status unknown. Optimal habitat in adjacent HRSP; project impacts unlikely
marbled murrelet	FT, SE	Partial to coastlines with stands of mature redwood and Douglas-fir for nesting/roosting. In breeding season, may be seen regularly 6-8 km (4-5 mi) inland in dense, mature forests	No	No	Optimal habitat in adjacent HRSP; project impacts unlikely

bank swallow	ST	Found primarily in riparian and other lowland habitats; restricted to lacustrine, riparian, and coastal areas with vertical banks, bluffs, cliffs to dig nest holes	No	No	There is no bank structure/habitat for this species on the Eel river in the vicinity; project impacts unlikely
willow flycatcher	SE	Breeds in moist brushy thickets, open second-growth, and riparian woodland, especially with willow	No	No	Potential habitat exists in riparian area adjacent to project; project impacts unlikely
MAMMALS					
Humboldt marten	SE	Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County	No	No	Habitat likely present in adjacent HRSP; project impacts unlikely
fisher	CT	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure	No	No	Habitat likely present in adjacent HRSP; project impacts unlikely
Sonoma tree vole	SSC	North coast fog belt from Oregon border to Sonoma County; in Douglas-fir, redwood & montane hardwood-conifer forests	No	No	No Douglas fir habitat, the food source of this species; no impacts expected
Townsend's big-eared bat	SSC	Throughout California in a wide variety of habitats; most common in mesic sites, typically in caves, mines, manmade structures, tree cavities	No	No	No habitat in riparian area, no buildings on site; no impacts expected
western red bat	SSC	Throughout California west of the Sierra Nevada/Cascade mountains; mixed conifer forests and woodlands, often in edge habitats	No	No	May roost in adjacent riparian cottonwood trees; no impacts expected
HERPETOFAUNA					
western pond turtle	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 ft elevation	No	No	Nesting habitat likely in Eel river corridor; no impacts expected
Pacific tailed frog	SSC	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats	No	No	No creeks or Eel river steep or cool enough for this species; no impact expected
foothill yellow-legged frog	CT	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats; rarely	No	No	Habitat likely still exists in nearby Bear creek, tributary to

		encountered far from rocky streams			Eel river; no project impacts expected
northern red-legged frog	SSC	Humid forests, woodlands, grasslands, and stream sides in northwestern California, usually near dense riparian cover	No	No	Habitat likely exists on Eel river; project impacts unlikely
southern torrent salamander	SSC	Cold, well-shaded permanent water in coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats; Old growth forests. Stays in splash zone; headwaters, seeps, springs	No	No	Habitat likely exists on Eel river or tributaries; project impacts unlikely
FISH					
coastal cutthroat trout	SSC		No	No	Likely present in the Eel river; no impacts expected

Federal:
FC Candidate
FE Endangered (legally protected)
FT Threatened (legally protected)

State:
FP Fully protected (legally protected)
SC Candidate
SE Endangered (legally protected)
SSC Species of special concern (no formal protection other than CEQA consideration)
ST Threatened (legally protected)

Table 5. Species detected at APN 209-191-018 on May 20, 2018

Common Name	Scientific Name	Federal/ State Listing	Detection Method
American kestrel	<i>Falco sparverius</i>	No	Visual
turkey vulture	<i>Cathartes aura</i>	No	Visual
common raven	<i>Corvus corax</i>	No	Auditory
Steller's jay	<i>Cyanocitta stelleri</i>	No	Visual & Auditory
Oregon junco	<i>Junco hyemalis</i>	No	Visual
black phoebe	<i>Sayornis nigricans</i>	No	Visual

Plants

No populations or habitat for maple-leaved checkerbloom, Siskiyou checkerbloom, nodding semaphore grass or any other sensitive plant species (Table 3) were found within the Survey Area, due to annual tillage and cultivation of annual crops. The Survey Area had been planted with a winter cover crop, and most plant species encountered were actively sowed in the area in October 2018 (Photos 2 and 3) and mostly tilled in in late April, with only a few still detectable. The Survey Area included no fencerows or other fallow areas in which sensitive plant species could have persisted. The riparian forest on the western side of the parcel constitutes black cottonwood forest, or the *Populus trichocarpa* Forest Alliance (S3*), a sensitive natural community. However, the proposed project footprint is over 200 feet away from and will not impact this vegetation type. A floristic species list can be found in Table 6.

Table 6. Plant species encountered within the Survey Area on May 20, 2019

Scientific Name	Common Name	Lifeform	Family
<i>Bellis perennis</i>	English lawn daisy	Perennial herb	ASTERACEAE
<i>Brassica rapa</i>	Common mustard	Annual herb	BRASSICACEAE
<i>Medicago sativa</i>	Alfalfa	Perennial herb	FABACEAE
<i>Vicia faba</i>	Broad bean	Annual herb, Vine	FABACEAE
<i>Vicia sativa</i>	Spring vetch	Annual herb, Vine	FABACEAE
<i>Avena sativa</i>	Oat	Annual grass	POACEAE
<i>Dactylis glomerata</i>	Orchardgrass	Perennial grass	POACEAE
<i>Festuca perennis</i>	Italian rye grass	Annual, Perennial grass	POACEAE
<i>Poa trivialis</i>	Rough blue grass	Perennial grass	POACEAE

Species Accounts - Potential Impacts or Effects

The following species were noted in CNDDDB as having historically occurred, or to have the potential to occur due to habitat, in the vicinity of the project: northern spotted owl, marbled murrelet, and willow flycatcher. Species with potential habitat present, or whose presence was not confirmed but potentially occur in the general area, are considered in further detail and include sharp-shinned hawk, Humboldt marten, and fisher.

For all species, direct effects are those which are caused by the action (project) and occur at the same time and place. Indirect effects are defined as those effects caused by the proposed action and are later in time, but still reasonably certain to occur.

Northern spotted owl

Regulatory Status: The northern spotted owl is a Federal and State Threatened species.

Habitat Requirements and Natural History: This species is an uncommon, permanent resident that resides in dense, old-growth, multi-layered mixed conifer, redwood and Douglas-fir habitats.

Breeds early March through June, with young independent and dispersing by September/October.

Potential for Occurrence within the Project Area: There are four Activity Centers in a 1.3-mile radius of the project area, none within a 0.7-mile radius. The proposed project area is approximately 2000 feet from HRSP, located across the Eel river between Avenue of the Giants and US Highway 101. Assume nighttime foraging can/will occur in the general vicinity of HRSP. Nesting northern spotted owls have not been reported for the nearest Activity Center (HUM0167, 0.73 miles north) since 2014 but habitat remains, and it is therefore considered to be potentially occupied.

Direct Effects: No direct effects will occur under proposed operations.

Indirect Effects: No generators or lights will be used during daily operations; therefore, no indirect effects are expected.

Determination: It is determined that the project will not have effects on the northern spotted owl, as noise and light will not be produced by the operation.

Marbled murrelet

Regulatory Status: The marbled murrelet is a Federally Threatened and State Endangered species.

Habitat Requirements and Natural History: Breeds April to September with both sexes incubating in alternating 24-hour shifts for 30 days, flying in with food at dusk and dawn. Adults lay one egg per nest and do not nest every year. Spends majority of time on the ocean but comes up to 50 miles inland to nest in forest stands with old growth forest characteristics.

Potential for Occurrence within the Project Area: Project area is approximately 2000 feet from old growth habitat in HRSP, located west of the parcel and main stem Eel river. No nesting habitat exists on the parcel.

Direct Effects: No direct effects will occur under proposed operations.

Indirect Effects: No generators or lights will be used during daily operations; therefore, no indirect effects are expected.

Determination: It is determined that the project will not have effects on the marbled murrelet, as noise and light will not be produced by the operation.

Willow flycatcher

Regulatory Status: The willow flycatcher is a State Endangered species; the little willow flycatcher (*Empidonax traillii brewsteri*) subspecies is expected in this part of California.

Habitat Requirements and Natural History: Breeds April through August; peak activity May through July. Often seen aerially gleaning or hawking insects from exposed perches in moist meadows with perennial streams, dominated by willow or alder; also found in smaller spring-fed or boggy areas with similar vegetation.

Potential for Occurrence within the Project Area: Project area is adjacent to moderately-sized willow patch in the riparian zone between the Project area and the Eel river.

Direct Effects: No direct effects are expected, as no activity occurs within the riparian forest area.

Indirect Effects: Since no generators or lights will be used during daily operations, there should be no disturbance from daily operations of the project.

Determination: It is determined that this project will have no effect on the willow flycatcher.

Sharp-shinned hawk

Regulatory Status: The sharp-shinned hawk is on the CDFW Watch List.

Habitat Requirements and Natural History: Breeds April through August; peak activity May through July. Breeds in dense mixed forests, seems to prefer but not restricted to riparian habitats; requires north facing slopes with plucking perches for consuming prey, mostly birds no larger than jays. Near water with little ground cover and well shaded.

Potential for Occurrence within the Project Area: Project area is immediately adjacent to riparian area with an overstory of cottonwood trees that could support nesting by this species, but riparian is not dense or well-shaded, with extensive ground cover.

Direct Effects: No direct effects are expected.

Indirect Effects: There should be minimal disturbance from daily operations of the project.

Determination: It is determined that this project will have minimal to no effect on the sharp-shinned hawk.

Humboldt Marten

Regulatory Status: The Humboldt marten is a State Endangered species.

Habitat Requirements and Natural History: This species is found in various mixed conifer forests with greater than 40 percent canopy closure that includes large trees and snag; requires variety of different aged stands. Important features include large tree/snag cavities or logs for reproduction and cover. Birth occurs in late March or April, and the young leave the company of their mother and disperse in late summer or autumn.

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Appendix A. Site Photos



Photo 1. View of Shively Flat, Looking southeast. Photo provided by applicant.



Photo 2. Cover crop in Survey Area, looking east. Photo provided by applicant, March 2019.



Photo 3. Cover crop in Survey Area, looking west. Photo provided by applicant, March 2019.



Photo 4. melon crop in Survey Area, looking southeast. Photo provided by applicant, July 2018.



Photo 5. Licensed outdoor dry-farmed Cannabis. Photo provided by applicant, August 2018.

Appendix B: NRCS Soil Maps (NRCS 2019)