



Biological Report

Hydesville, Humboldt County, California

APN 204-331-019

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I. Summary of Findings and Conclusions

The project at parcel APN 204-331-019, located in Hydesville in Humboldt County, California (Figure 1), involves the development of *Cannabis* cultivation infrastructure (Figure 2). The current landowner(s) purchased the parcel in 2018, and are applying for a cultivation permit under the Humboldt County Commercial Cannabis Land Use Ordinance (HCCCLUO) 2.0 as a new cultivator for 7,000 square feet within two hoophouses (3,000 square feet each) and up to 1,000 square feet of propagation area.

This Biological Report reviews the project at the above APN to determine to what extent wildlife species currently listed or proposed for listing would be affected (see Table 3).

Habitat for the following sensitive species was identified in the vicinity of the project area: northern spotted owl (*Strix occidentalis caurina*). See Table 1 for a list of reviewed species.

No sensitive wildlife species were identified during the field survey, with the exception of a yellow-breasted chat (*Icteria virens*). It has been determined that the project and operations are likely to have little to no effect on the above listed species if they are present in the project vicinity. Potential impacts are outlined in the Species Accounts section of this report.

Summary of Further Surveys Needed and Mitigation Recommendations

- Strict adherence to Riparian Setback Requirements for Humboldt County and State Water Board are required to maintain quality habitat for amphibians and anadromous fish. All cultivation should be well inside these setbacks once permitting allows.
- Strict adherence to Humboldt County Commercial Cannabis Land Use Ordinance (HCCCLUO) 2.0 regarding performance standard for noise at cultivation sites (55.4.12.6) for generator use, if implemented into operations in the future.
- Strict adherence to Dark Sky Association Standards to avoid light pollution effects on nocturnal and diurnal wildlife. Hoophouses requiring lighting (mixed-light greenhouses or propagation areas) before sunrise or after sunset MUST be covered to avoid any effects on nocturnal wildlife. It is recommended that professional, automated light-deprivation greenhouses be used to ensure adherence with these regulations.
- Keeping noise levels at a minimum during cultivation operations will help maintain habitat quality for all wildlife species. If generators are used at any point, they will be shielded with a noise-reduction housing and a noise study will be conducted.

II. Introduction, Background, and Project Understanding

The current landowner(s) purchased the parcel in 2018, and are applying for a cultivation permit under the Humboldt County Commercial Cannabis Land Use Ordinance (HCCCLUO) 2.0 as a new cultivator for 7,000 square feet within two hoopouses (3,000 square feet each) and up to 1,000 square feet of propagation area.

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 could potentially occur in the general area, are considered in further detail and include northern spotted owl (*Strix occidentalis caurina*).

A biological assessment of the project area and the surrounding habitat was conducted to evaluate any potential habitat for special status animal species or other environmental issues. In addition, these areas were surveyed in order to describe any terrestrial and aquatic animals occurring in and around the project area. Cannabis cultivation will be occurring within existing hoopouses, where no new ground will be disturbed. In addition, there are no CNDDDB listed plants occurring in the vicinity of the project area, therefore, no botanical surveys are required at this time.

Project Site

The project is located in Humboldt County at APN 204-331-019, approximately a mile south of the community of Hydesville, and 2 miles west of the community of Carlotta, in the Van Duzen watershed. The legal description of the site is within the USGS 7.5' quadrangle Hydesville, T02N, R01E, Section 29 HB&M. The parcel is approximately 19 acres in size and within the 100-year flood zone of the Van Duzen River; approximately 3 to 5 acres are river bar. The parcel is immediately adjacent to what appears to be an overflow channel during high water events within the extensive river bar of the Van Duzen River (Figures 1 and 4).

There is a residence with permitted septic and leach field, an agricultural barn that will be used for drying and potentially processing *Cannabis*, and other small outbuildings and penned areas that house chickens and goats (Photos 1-4). Historic imagery shows the residential area, barn, and outbuildings occupy the same footprint. The new landowner(s) have a multi-use approach to the parcel, producing flowers (lavender, dahlia) and agricultural products related to their current livestock (meat, milk).

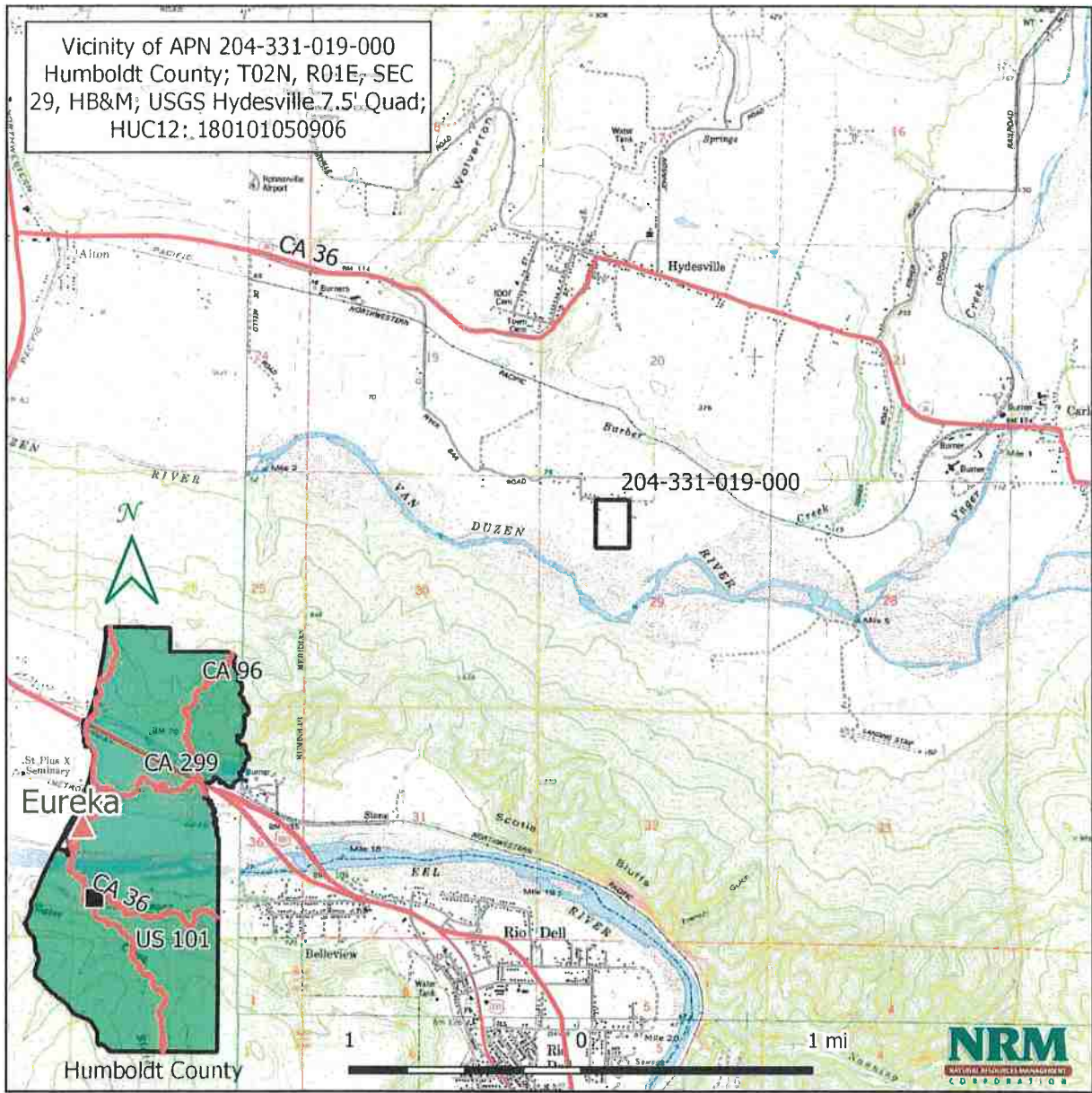


Figure 1. Vicinity Map for APN 204-331-019

Topography and Hydrology

Located approximately one mile south of Hydesville and two miles west of Carlotta, this parcel is adjacent to an extensive river bar of the Van Duzen River and accessed from State Highway 36. The parcel and surrounding area are within the 100-year flood zone and have historically been farmland. Elevation on this 19-acre parcel is approximately 80 feet with no visible slope. The residence and hoopouses, one that is currently used for propagating lavender plants, are on naturally existing flats. Satellite imagery (Google Earth Pro) beginning in 1998 show little change on the parcel and surrounding area through 2014.

A permanent pond located approximately 450 feet southeast of the residence, and over 1,300 feet from the Van Duzen River, was not visible in 1998 imagery but can be seen in the next available imagery of 2004. The current landowner(s) were told this pond was historic, which may be undetectable due the poor quality of the 1998 imagery. This pond is strictly for aesthetics.

There is an extensive gravel bar extending from the parcels' southern boundary approximately 1,300 feet to the present river channel. Historic satellite imagery since 1998 show the Van Duzen River and gravel bar in their current locations. Between the south boundary of the parcel and the gravel bar is a narrow riparian strip of tall cottonwoods (Photos 5-6). Satellite imagery starting in 2005 show pathways on the gravel bar made by wildlife or humans; by 2014 a two-tire track is clearly visible from the Van Duzen River bank north through the riparian zone and onto the parcel to connect to River Bar Road (Photos 7-8). The current landowner(s) do not use this track, do not have an all-terrain vehicle on the parcel, and have informed the neighbor previously using this track for access to the main road that it is not an option.

There are no watercourses on the property. The nearest watercourse is Barber Creek, north of the parcel boundary approximately 1,700 feet, flowing west to the confluence with the Van Duzen River about one mile from the parcel boundary. The Van Duzen River flows in a westerly direction from the parcel to confluence with the Eel River, approximately 3 miles west of the parcel and 3 miles south of the town of Fortuna; the Eel River then continues in a northwesterly direction for approximately 8.5 air miles to the Pacific Ocean. The Van Duzen River consists of about 73 river miles, with headwaters in the Six Rivers National Forest, entering the Eel River at about river mile 13, near the town of Alton.

The Van Duzen River, a Class I, fish bearing watercourse, has been declared as impacted by low streamflows due to high concentrations of *Cannabis* cultivation, particularly further upstream in the Larabee Valley area, and is critical to the recovery of coho salmon, a Federal and State listed species.

Biological Description

This parcel immediately adjacent to the Van Duzen River bar is historic farmland. Previous landowner(s) planted multiple varieties of trees that are grouped among the open space of the parcel (Figures 2 and 3). The 65 large trees along the northern parcel boundary (Figure 2) are on the Pacific Gas and Electric (PG&E) powerline and slated to be removed within the next five years by PG&E (Photo 9).

Approximately 3 to 5 acres of the parcel is occupied by gravel bar (Photo 10) with the remainder acreage remaining primarily open (Photos 11-13). The pond (Photos 14-15) is approximately 150 feet by 120 feet and located on the southeast portion of the parcel; it likely retains water year-round (pond level similar when parcel was visited by current landowner(s) in October of 2018). The previous owner said the pond was stocked around 2015 with bass and catfish. A survey of the pond edge revealed a single adult Pacific treefrog and hundreds of small fish, suggesting it is unsuitable for local herpetofauna.

Project Description

There is currently no *Cannabis* cultivation on this parcel. The proposed project includes applying for a *Cannabis* Cultivation Permit under Humboldt County Ordinance No. 2599 (*Cannabis* Ordinance 2.0). The total cultivation square footage will be 7,000 square feet within two hoopouses (3,000 square feet each) and up to 1,000 square feet of propagation area (Photos 16-18).

Associated infrastructure would include the utilization of the existing agricultural barn for drying and potentially processing. A containment shed for a potential backup generator will be built within the existing agricultural barn (see Photo 2) and will include proper ventilation. The parcel is connected to PG&E and electricity for the operation will be provided by PG&E, although the landowner(s) may look into alternative sources in the future as a cost-saving measure. The proposed cultivation method is mixed-light and consists of tarped hoopouses with low-wattage lighting during the early growing stage for the propagation of young plants and then no use of artificial lights for the remaining season. The landowner(s) stated intention is to completely cover the hoopouses at night to prevent light pollution and will not be using generators since this parcel has access to PG&E utilities. Nutrients use for *Cannabis* cultivation will be organic teas, foliar sprays, and beneficial bacteria.

The project footprint on the parcel is occupied by two hoopouses, equipped with 12 solar fans for cooling during summer months, that are currently used to propagate lavender plants. Contingent upon permitting, these hoopouses will be used for *Cannabis* cultivation and the mature lavender plants moved outdoors. The hoopouses are located approximately 2,300 feet

north of the Van Duzen River, 460 feet north of the cottonwood riparian zone, and 2,300 feet south of Barber Creek.

There is a functioning well on the parcel used for residential water drilled in 1956 (Appendix B, Well Report and Photos) that the current landowner(s) had inspected by an engineer, who concluded this well is not hydrologically connected to the Van Duzen River (Appendix C, Engineer Letter). This letter also attests to the resilience of the hoopouses to withstand hydrostatic forces, which reside within the 100-year flood zone. Another well on the parcel is not used. There is 6,000 gallons of water storage in hard-sided plastic tanks on the parcel that currently support the lavender cultivation that the landowner(s) may expand to two acres. Any additional water storage needed for *Cannabis* cultivation will be purchased pending permitting.

III. Methods

Pre-Field Review

Prior to the survey, the CDFW California Natural Diversity Data Base (CNDDDB, 2019) record of wildlife species occurrences for Humboldt County was queried for a nine-quad area around the project site, to determine which special status species may occur within the project area and to compile a target species list (Table 1). *Due to the proximity to the Pacific Ocean, several species occur on this list for which no habitat exists on the parcel.

Table 1. CNDDDB list of potential special status wildlife species in the Hydesville nine-quad area

Common Name	Scientific Name	Federal / State Listing
northern spotted owl	<i>Strix occidentalis caurina</i>	Federal Threatened, State Threatened
golden eagle	<i>Aquila chrysaetos</i>	Fully Protected, Watch List, USFWS Bird of Conservation Concern (BCC)
bald eagle	<i>Haliaeetus leucocephalus</i>	State Endangered
American peregrine falcon	<i>Falco peregrinus anatum</i>	Delisted, Fully Protected
northern goshawk	<i>Accipiter gentilis</i>	State Species of Special Concern (SSC)
Cooper's hawk	<i>Accipiter cooperii</i>	Watch List
sharp-shinned hawk	<i>Accipiter striatus</i>	
osprey	<i>Pandion haliaetus</i>	Watch List
marbled murrelet	<i>Brachyramphus marmoratus</i>	Federal Threatened, State Endangered
California brown pelican*	<i>Pelecanus occidentalis californicus</i>	Fully Protected
double-crested cormorant*	<i>Phalacrocorax auritus</i>	Watch List
western snowy plover*	<i>Charadrius alexandrinus nivosus</i>	Federal Threatened, SSC
mountain plover*	<i>Charadrius montanus</i>	SSC
bank swallow	<i>Riparia riparia</i>	State Threatened
willow flycatcher	<i>Empidonax traillii</i>	State Endangered

tricolored blackbird	<i>Agelaius tricolor</i>	Candidate State Endangered, SSC
black-capped chickadee	<i>Poecile atricapillus</i>	Watch List
yellow warbler	<i>Setophaga petechia</i>	SSC
grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC
Humboldt marten	<i>Martes caurina humboldtensis</i>	Candidate State Endangered, SSC
fisher- west coast DPS	<i>Pekania pennanti</i>	State Threatened, SSC
American badger	<i>Taxidea taxus</i>	SSC
Sonoma tree vole	<i>Arborimus pomo</i>	SSC
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SSC
pallid bat	<i>Antrozous pallidus</i>	SSC
northern red-legged frog	<i>Rana aurora</i>	SSC
foothill yellow-legged frog	<i>Rana boylei</i>	Candidate State Threatened, SSC
Pacific tailed frog	<i>Ascaphus truei</i>	SSC
Del Norte salamander	<i>Plethodon elongatus</i>	Watch List
southern torrent salamander	<i>Rhyacotriton variegatus</i>	SSC
western pond turtle	<i>Emys marmota</i>	SSC
coast cutthroat trout	<i>Oncorhynchus clarkii clarkii</i>	SSC
coho salmon – s. OR, n. CA ESU	<i>O. kisutch pop. 2</i>	Federal Threatened, State Threatened
coho salmon – central CA coast	<i>O. kisutch pop. 4</i>	Federal Endangered, Federal Threatened
steelhead – Klamath Mtn	<i>O. mykiss irideus pop. 1</i>	SSC
steelhead – n. CA	<i>O. m. irideus pop. 16</i>	Federal Threatened
summer-run steelhead	<i>O. m. irideus pop. 36</i>	State Endangered
chinook salmon - CA coastal ESU	<i>O. tshawytscha pop. 17</i>	State Threatened
green sturgeon	<i>Acipenser medirostris</i>	Federal Threatened, SSC
tidewater goby*	<i>Eucyclogobius newberryi</i>	Federal Endangered, SSC
longfin smelt*	<i>Spirinchus thaleichthys</i>	Federal Candidate, State Threatened, SSC
eulachon*	<i>Thaleichthys pacificus</i>	Federal Threatened
Pacific lamprey	<i>Entosphenus tridentatus</i>	SSC

The survey protocol for NSO Activity Centers (USFWS Revised 2012) in redwood (coastal) habitat (USFWS 2011) requires a 0.7-mile habitat protection area and analysis buffer for determining potential project effects. The nearest Activity Center to the project areas is 1.6 miles southeast of the parcel (Figure 4). Recent NSO data for the nearest Activity Centers are displayed in Table 2, below.

Table 2. NSO activity centers in the vicinity of APN 204-331-019

NSO Activity Center	CNDDDB Reported Positive Data	CNDDDB Reported Negative Data	Approximate Distance to Nearest Project Area (miles)
HUM0975	2011 AC established with nesting pair 1999, 2001, 2004 non-nesting pair 2011 nesting pair 2012 single male only	1998, 2002, 2003, 2005	2.0
HUM1109	2016, 2017, 2018 NSO pair with young	--	1.6

A CNDDDB database search for all special status species within a 1-mile radius of the project revealed wildlife records for bank swallow (*Riparia riparia*) and western pond turtle (*Emys marmorata*) (Figure 5).

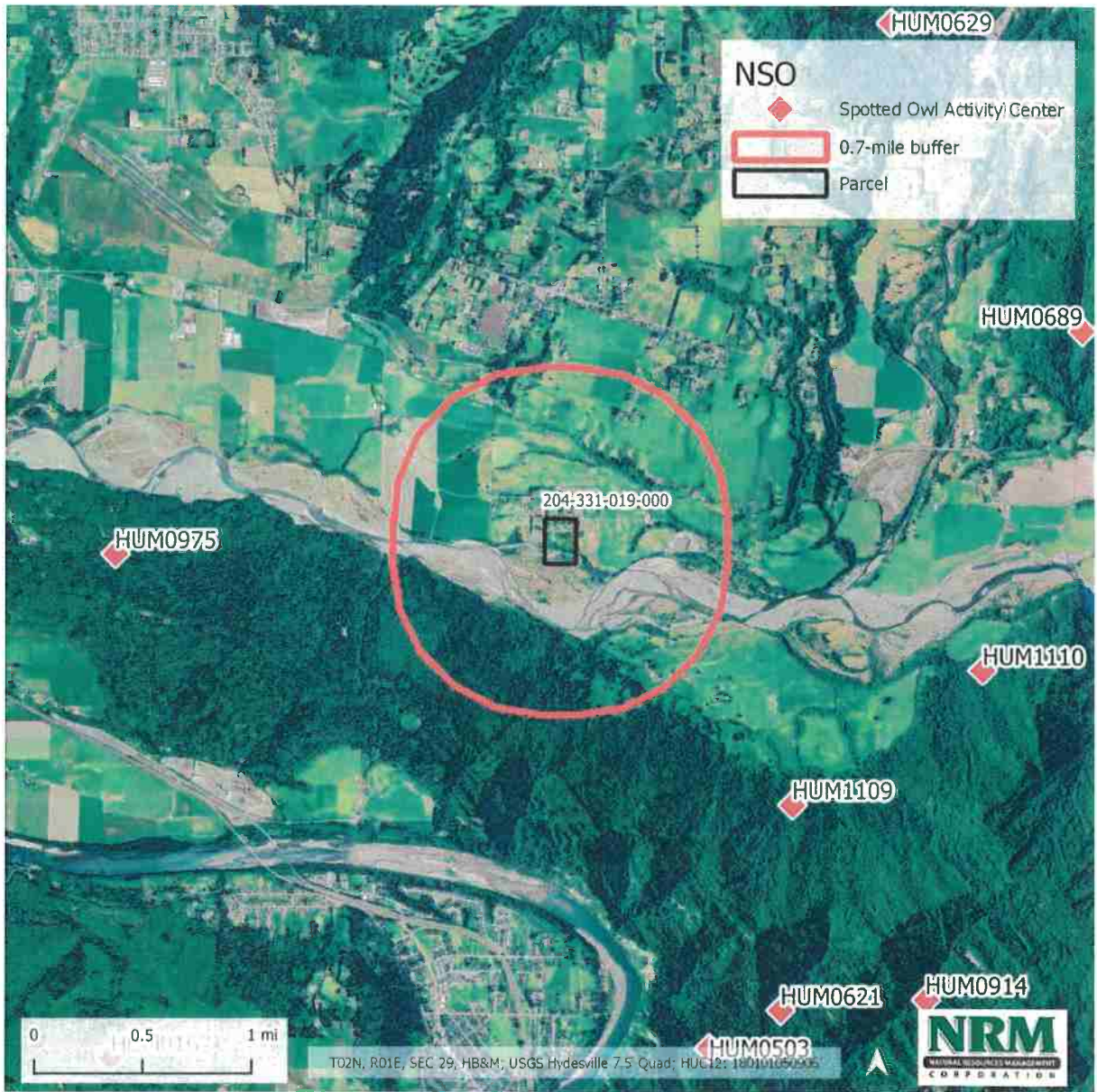


Figure 4. NSO Activity Centers in the vicinity of APN 204-331-019

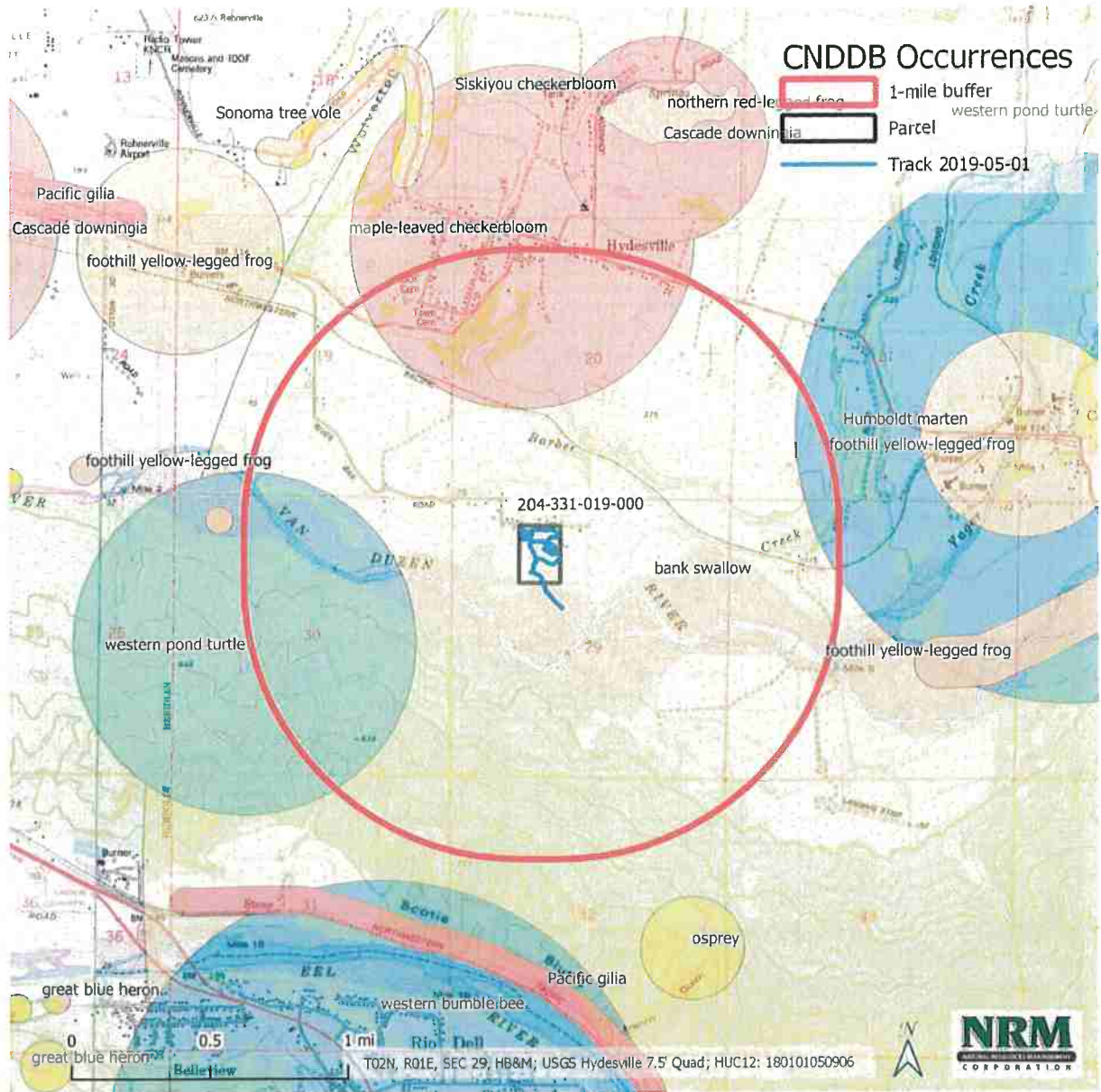


Figure 5. CNDDDB species within a 1-mile radius of APN 204-331-019 (track file in blue)

Field Survey

On May 1st, 2019 NRM wildlife biologist Michelle McKenzie conducted a site visit to survey the project and surrounding area for all terrestrial and aquatic species present. The survey was conducted for approximately 2 hours on a warm (72°F/22°C), sunny morning.

While walking the area all auidial detections of bird and mammal species were noted and the entire area traversed (an approximate 100-foot buffer around the proposed project area, see track, Figure 5) was scanned for wildlife sign (tracks and scat). In addition, trees were inspected for activity or sign of use by wildlife (cavities, nests, scrapes or accumulated vegetation), and cover objects were inspected for potential amphibian species. The site was assessed for visual indications of wetland habitat. Basic vegetation types were noted and recorded across the project site. No botanical survey was performed during this visit due to no new ground disturbance on the parcel for the purposes of *Cannabis* cultivation.

IV. Results and Discussion

Summary of Findings

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.

No listed wildlife species or special status species were detected during the survey with the exception of a yellow-breasted chat (Species of Special Concern) immediately adjacent to the Van Duzen River. Special status and additional species of interest, and the potential for project impacts, are presented in Table 3. Impacts to species from the proposed projects, either directly or indirectly, are expected to be minimal if light restrictions and all other management recommendations included are adhered to. All species detected during the survey are listed in Table 4. There is no optimal NSO habitat within the vicinity of the project area. Although no trees will be removed, potential disturbance due to noise and light pollution is addressed in the Management Recommendations section.

Survey Results and Discussion

Special status and additional species of interest, and the potential for project impacts, are presented in Table 3, below. Species are considered on a case-by-case basis as to the project's affect based on considerations such as home range, habitat and sensitivity to disturbance. All species detected onsite are recorded in Table 4.

Due to the proximity to the Pacific Ocean, several species occur on this list for which no habitat exists on the parcel and, therefore, no longer considered within this report. These species include western snowy plover, mountain plover, California brown pelican, double-crested cormorant, tidewater goby, longfin smelt, and eulachon.

There are two northern spotted owl (NSO) Activity Centers in the vicinity of the parcel. Both are located on the forested ridge between the Van Duzen and Eel Rivers: HUM1109 is approximately 1.6 miles southeast of the project area, and HUM0975 is approximately 2 miles west of the parcel (Figure 4). All Activity Centers are considered active as long as habitat is still present. It is unclear if habitat still exists in the area of the HUM0975 Activity Center since the CNDDDB has no reported survey data since 2012, however, a nesting pair of NSOs were reported the previous year.

The forest habitat between the two mainstem rivers is punctuated with roads and areas of past timber harvest operations. Overall, the habitat encompassed within 0.7 miles of the project area appears suboptimal and limited to drainages or small tributaries where larger trees may still persist. Otherwise, habitat for NSOs occurs in the vicinity of current Activity Center locations, where there are what appears to be more extensive patches of larger trees.

Given the ambient noise related to the Van Duzen River, local farm and ranch operations, and potentially Highway 36, disturbance to NSOs in the vicinity is expected to be minimal or at least not additive. In addition, no generators will be used on the parcel, and no lighting beyond early-season compact fluorescent bulbs will be utilized in a portion of one of the hoopouses (for propagation), that the landowner(s) have stated will be tarped. These measures will greatly reduce any potential for noise and light pollution disturbance to wildlife residing in the general area.

There is insufficient forested habitat, canopy cover, large trees, or rock outcrops on the parcel to support breeding populations of special status species from Table 1, such as peregrine falcon, Humboldt marten, and fisher. The cottonwoods that form the barrier between the usable portion of the parcel and the river bar are tall, with an understory of seasonal vegetation growing in the overflow channel (Photos 4-7), which may or may not support nesting habitat for species such as Cooper's hawk and sharp-shinned hawk. Habitat potentially suitable for breeding likely occurs within the forested ridge between the mainstem rivers, in the vicinity of NSO Activity Centers and other smaller drainages, for northern goshawk, Humboldt marten and fisher.

Although golden eagle may use coastal riverine areas in the winter, this species likely breeds further inland within the Van Duzen watershed. It is also expected that bald eagle, osprey and marbled murrelet use the Van Duzen corridor for hunting and accessing breeding sites further upstream.

Songbirds such as willow flycatcher, yellow warbler and black-capped chickadee would likely find optimal habitat on the extensive river bar where there are large patches of willow interspersed with alder, cottonwood and berry bushes. Although some nesting by tri-colored

blackbirds in the general area has occurred in the past, it is believed this species is primarily a visitor from fall through spring. The open nature of the river corridor in the vicinity of the parcel precludes any river bank habitat for bank swallow although some may exist on the south side of the Van Duzen River. Another rare fall and winter visitor, the mountain plover is found in bottomlands on occasions and may feed in the vicinity of the project area. The grasshopper sparrow, found in grassland habitats during breeding season, is unlikely to nest in the vicinity of the parcel due to the persist human activity on the historic farmlands, and the fact the grass on the parcel is mowed on a regular basis.

Structures were inspected that may provide roosting or breeding habitat for bats; no sign of guano or use was detected, but foraging in the vicinity is presumed likely due to the proximity of the Van Duzen River. Due to the historic land use, badger was not expected on the parcel and no evidence was seen of use by badger (burrows). There are no Douglas-fir trees on the parcel large enough to support Sonoma tree vole, an arboreal rodent that feeds on the needles.

Use of the Van Duzen River corridor is expected by the remaining special status aquatic-related wildlife species, with optimal riparian habitat, basking substrate, and slow backwater areas for western pond turtle, foothill yellow-legged frogs, and potentially northern red-legged frogs. The ornamental pond on the parcel was inspected for all life stages of frogs, but only a single Pacific treefrog was observed. The lack of tadpoles suggests the stocked fish (by previous owner in 2015) prevent red-legged frogs, a species found primarily in ponds and slow backwaters, from establishing. Hundreds of small fish were observed during the site visit.

Smaller, cooler tributaries to this Class I watercourse is where habitat for Pacific tailed frog and southern torrent salamander is expected, and the area appears too open to provide habitat for Del Norte salamanders.

Anadromous fish species (coast cutthroat trout, coho salmon, steelhead, summer-run steelhead trout, chinook salmon) utilize the Van Duzen River. Deep pools of the Van Duzen River, particularly upstream of confluences with the Little Larabee Creek and the Little Van Duzen River, provide primary habitat for summer-run steelhead, recently updated to State Endangered. The remaining species generally spawn in smaller streams and tributaries of the Klamath, Trinity, and Eel Rivers, or the lower reaches of major rivers such as the Eel. Other fish species, including green sturgeon, tidewater goby, longfin smelt, eulachon, and Pacific lamprey, are primarily associated with the nearby ocean and bay habitats, however, green sturgeon and Pacific lamprey do seasonally migrate into freshwater river systems and use of the Van Duzen River is expected.

No watercourses exist on the parcels, therefore contamination of the river from operations on the parcel is not expected. The Humboldt County 100-foot setback (buffer) requirement from a Class I watercourse top of bank or riparian drip-line, whichever is greater, and the State Water Board Order setback requirement of 150 feet from bankfull stage measurement are easily met.

The project area has been historic farmland within the flood zone of the Van Duzen River for many decades. The parcel is mostly open and grassy with groups of native and non-native tree species planted by the previous landowner(s), with residential parcels immediately adjacent to the west, north and east. The area between the Van Duzen River channel and the project site on the parcel is primarily extensive river (gravel) bar (Photos 6, 10, 19, 20) that has shown little change in the available satellite imagery, although occasional high-water years appears to send water down the channel near the cottonwood riparian zone.

Special status and additional species of interest, and the potential for project impacts, are presented in Table 3, below. The site is defined as the project footprint and surrounding area to 100 feet from project; species are considered on a case-by-case basis as to the project's affect based on considerations such as home range, habitat, and sensitivity to disturbance.

Table 3. Special status species, suitable habitat in project area, and potential impacts

Common Name	Listing Status	General Habitat Description	Presence of Suitable Habitat w/in Site?	Potentially Affected by Project?	Habitat Present with No Effects Expected	Comments
BIRDS						
northern spotted owl	FT, ST, SSC	Old-growth forests or mixed stands of old-growth and mature trees; occasionally in younger forests with patches of big trees	No	Yes	--	Recently active AC site within 1.6 mi of project area. Project area not forested, but is adjacent to forested ridge of NSO habitat; no impacts expected if Management Recommendations adhered to
golden eagle	FP, WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	No	No	--	No nesting or foraging habitat available in the vicinity; no impacts expected
peregrine falcon	FP	Nests near wetlands, lakes, rivers, or other water; on cliffs, banks, bluffs and rock outcrops; also, human-made structures	No	No	--	Potential habitat on ridge between Van Duzen and Eel Rivers, across Van Duzen from project area; no impacts expected
bald eagle	SE, FP	Requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches. Nests in large, old-growth, or dominant live tree, especially ponderosa pine.	No	No	--	Parcel adjacent to Van Duzen. Possible nesting trees 0.5 mi from project area. Could fly overhead, would not use project area. Likely to use river corridor for foraging. No impacts expected
osprey	WL	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	No	No	--	Parcel adjacent to Van Duzen with minimal nesting habitat, although cottonwoods in riparian zone may be adequately sized. Likely uses river corridor for foraging. No impacts expected

Cooper's hawk	WL	Woodland, chiefly of open, interrupted or marginal type	Yes	Yes	Yes	Project area adjacent to woodland habitat across Van Duzen; no impacts expected
sharp-shinned hawk	WL	Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas.	Yes	Yes	Yes	Riparian deciduous habitat may be well developed enough for nesting and foraging. Unlikely to use project area; no impacts expected
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	--	No habitat in vicinity of parcel; likely to use Van Duzen corridor to access habitat upstream; no impacts expected
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	Yes	No	Potential for suitable bank habitat on south side of Van Duzen River	No habitat within site or immediate surrounding area. Unlikely to forage on parcel; no impacts expected
willow flycatcher	SE	Breeds in moist brushy thickets, open second-growth, and riparian woodland, especially with willow	Yes	No	Likely optimal habitat on river bar between Van Duzen and parcel	No impacts expected due to distance from habitat to project area
tricolored blackbird	SC, SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	No	No	--	No habitat within site or surrounding area for this species that likely no longer breeds in the area; no impacts expected

black-capped chickadee	WL	Year-round resident of coastal riparian habitats	Yes	No	Common and expected in most riparian habitats along coastal plain	No impacts expected due to optimal habitat in general vicinity and distance from project site to nesting habitat
yellow warbler	SSC	Requires dense willow thickets nesting and roosting up to 8000 feet	Yes	No	Optimal habitat exists on river bar adjacent to project area	No impact expected due to distance from project site to nesting habitat
grasshopper sparrow	SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	No	No	--	Although portion of parcel is grassland, habitat not optimal as it is mowed on a regular basis; no impacts expected
MAMMALS						
Humboldt marten	SE	Only in the coastal redwood zone from the Oregon border south to Sonoma County. Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	No	No	--	Best potential denning and foraging habitat within vicinity of NSO Activity Centers and forested habitat on ridge between Van Duzen and Eel Rivers; no impacts expected
fisher	FC, SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure	No	No	--	Best potential denning and foraging habitat within vicinity of NSO Activity Centers and forested habitat on ridge between Van Duzen and Eel Rivers; no impacts expected
badger	SSC	Requires dry, friable soils in grass and shrub and open forest habitats to dig burrows	No	No	--	No suitable habitat in this historically farmed area; no impacts expected

Townsend's big-eared bat	SSC	Throughout California in a wide variety of habitats; most common in mesic sites. Typically found in caves, mines, manmade structures	No	No	--	Possible roosting sites on parcel checked for guano, no sign; foraging in the area expected due to proximity to Van Duzen; no impacts expected
pallid bat	SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	No	No	--	Possible roosting sites on parcel checked for guano, no sign; no impacts expected as this species is likely to occur in more inland, drier habitats
Sonoma tree vole	SSC	North coast fog belt from Oregon border to Sonoma County; in Douglas-fir, redwood & montane hardwood-conifer forests	No	No	--	Although this species most often occurs within Douglas-fir forests in the fog belt, no habitat exists on the parcel; 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 6000 ft elevation	No	No	--	Ornamental pond on parcel previously stocked with fish, and no flowing water; not ideal habitat and none observed during site visit. This species expected in the Van Duzen River corridor; no impacts expected due to distance from river and no over-wintering habitat on parcel
Pacific tailed frog	SSC	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats. This species is restricted to perennial streams of low temperature in steep-walled valleys with dense vegetation.	No	No	--	No breeding habitat within site or surrounding area on the parcel; expected in cooler tributaries to the Van Duzen River; no impacts expected
foothill yellow-legged frog	SC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Apparently will also use shallow/ephemeral mid-elevation ponds	No	No	--	Optimal habitat in the Van Duzen River; no impacts expected due to distance from project area to river

northern red-legged frog	SSC	Humid forests, woodlands, grasslands, and stream sides in northwestern California, usually near dense riparian cover. Highly aquatic, little movement from streams/pond	Yes	No	Ornamental pond on parcel stocked with non-native fish, unsuitable for tadpoles to establish	Optimal habitat for this species expected in the backwater areas of the Van Duzen River or the ornamental pond; no impacts expected due to distance from river to project area
southern torrent salamander	SSC	Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats; Old growth forests. Generally found in headwaters, seeps/springs but can be located on damp forest floor	No	No	--	No Douglas fir/conifer habitat; expected in cooler tributaries to the Van Duzen River; no impacts expected
Del Norte salamander	WL	Old-growth associated species with optimum conditions in the mixed conifer/hardwood ancient forest ecosystem. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	No	No	--	No habitat (cover) exists on this historically farmed parcel; no impacts expected
FISH						
coast cutthroat trout	FT	Small coastal streams from the Eel River to the Oregon border.	No	No	--	No watercourses exist on the parcel; parcel is flat, with little to no potential for runoff issues to Van Duzen River; no impacts expected

coho salmon - populations 2, 4	FE, FT, ST	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters. Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California.	No	No	No	--	No watercourses exist on the parcel; parcel is flat, with little to no potential for runoff issues to Van Duzen River; no impacts expected
steelhead - northern California DPS	SSC	Coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.	No	No	No	--	No watercourses exist on the parcel; parcel is flat, with little to no potential for runoff issues to Van Duzen River; no impacts expected
summer-run steelhead trout	SSC	Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer.	No	No	No	--	No watercourses exist on the parcel; parcel is flat, with little to no potential for runoff issues to Van Duzen River; no impacts expected
chinook salmon - California coastal ESU	FT	Federal listing refers to wild spawned, coastal, spring & fall runs between Redwood Cr, Humboldt Co & Russian River, Sonoma Co	No	No	No	--	No watercourses exist on the parcel; parcel is flat, with little to no potential for runoff issues to Van Duzen River; no impacts expected
green sturgeon	FT, SSC	These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, & Trinity Rivers.	No	No	No	--	No watercourses exist on the parcel; parcel is flat, with little to no potential for runoff issues to Van Duzen River; no impacts expected

Pacific lamprey	SSC	Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining.	No	No	--	No watercourses exist on the parcel; parcel is flat, with little to no potential for runoff issues to Van Duzen River; no impacts expected
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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)

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

Species, or their sign, observed during the survey are summarized below. No listed wildlife species were detected during the site visit, with the exception of a territorial male yellow-breasted chat singing from a willow patch immediately adjacent to the Van Duzen River. There were no direct sightings of mammal species, all were inferred from sign.

Table 4. Species detected at APN 204-331-019 on May 1st, 2019

Common Name	Scientific Name	Federal/State Listing	Detection Method
red-tailed hawk	<i>Buteo jamaicensis</i>	None	visual (pair calling)
red-shouldered hawk	<i>Buteo lineatus</i>	None	visual
common raven	<i>Corvus corax</i>	None	visual
turkey vulture	<i>Cathartes aura</i>	None	visual
common raven	<i>Corvus corax</i>	None	auditory
northern flicker	<i>Colaptes auratus</i>	None	visual, auditory
rufous hummingbird	<i>Selasphorus rufus</i>	None	visual, auditory
black phoebe	<i>Sayornis nigricans</i>	None	visual, auditory
American robin	<i>Turdus migratorius</i>	None	visual
yellow-breasted chat	<i>Icteria virens</i>	SSC	auditory
yellow-rumped warbler	<i>Setophaga coronata</i>	None	visual
rough-winged swallow	<i>Stelgidopteryx serripennis</i>	None	visual
Pacific slope flycatcher	<i>Empidonax difficilis</i>	None	auditory
Oregon junco	<i>Junco hyemalis</i>	None	visual
wrentit	<i>Chamaea fasciata</i>	None	auditory
song sparrow	<i>Melospiza melodia</i>	None	visual, auditory
white-crowned sparrow	<i>Zonotrichia leucophrys</i>	None	visual, auditory
house finch	<i>Haemorhous mexicanus</i>	None	visual
gray fox	<i>Urocyon cinereoargenteus</i>	None	scat, tracks
black-tailed deer	<i>Odocoileus hemionus</i>	None	scat, tracks
western fence lizard	<i>Sceloporus occidentalis</i>	None	visual

Species Accounts - Potential Impacts or Effects

The following species were noted either by CNDDDB as having historically occurred in the area or have the potential to occur due to habitat, or during the course of this assessment were considered most likely to occur in the area and potentially be impacted.

Northern Spotted Owl

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

Habitat Requirements and Natural History: Found in dense, old growth, multi-layered mixed conifer, redwood and Douglas-fir habitats. Nests in tree or snag cavity or broken top of large trees, from March through June; peak activity in April and May.

Potential for Occurrence within the Project Area: This species likely uses forested habitats with adequate canopy cover in the general area for foraging. Otherwise, remaining potential nesting habitat likely only occurs in the areas of known Activity Centers.

Short Term Project Impacts - Construction

There is no construction phase to this project.

Direct Effects: No direct effects expected.

Indirect Effects: No indirect effects expected.

Determination: There is no construction associated with this project, therefore, no short-term impacts are expected.

Ongoing Activity Impacts - Cannabis

The long-term impacts to northern spotted owl are unknown, as this is a species in decline due to numerous factors including nesting habitat removal and the invasion of the barred owl, a related, larger and more aggressive species originating from the eastern US. This operation is expected to be conducted in a low impact manner, with future mixed light option run by PG&E; there will be no industrial fans or dehumidifiers used.

Direct Effects: If northern spotted owls are occupying the historic Activity Centers, the distance from the project areas should be sufficient to not disturb nesting birds with day to day operations.

Indirect Effects: No indirect effects expected.

Determination: It is determined that the projects will have little to no impacts or effects on this species due to the distance from the known Activity Centers to the project areas. To ensure minimal impacts, strict adherence to Dark Sky Association Standards are recommended, which include lighting only what you need, using energy efficient bulbs at minimum wattage necessary, shield lighting and direct downwards, place on timer so light is used only when needed, and choosing warm white light bulbs.

Cumulative Effects

Historic satellite imagery since 1998, the first available imagery (Google Earth Pro 2018) show the Van Duzen River channel and gravel bar in their current locations. This and neighboring parcels appear virtually unchanged, having remained farmland up to the most recent imagery available (2016). In 2014, *Cannabis* cultivation appears to have begun to the north (500 feet),

northeast (1000 feet), and west (650 feet). These cultivation areas appear modest in size at the time, suggesting cumulative impacts in this area of the watershed to be minimal.

Management Recommendations

- Strict adherence to Riparian Setback Requirements for Humboldt County and State Water Board are required to maintain quality habitat for amphibians and anadromous fish. All cultivation should be well inside these setbacks once permitting allows.
- Strict adherence to Humboldt County Commercial Cannabis Land Use Ordinance (HCCCLUO) 2.0 regarding performance standard for noise at cultivation sites (55.4.12.6) for generator use, if implemented into operations in the future.
- Strict adherence to Dark Sky Association Standards to avoid light pollution effects on nocturnal and diurnal wildlife. Hoophouses requiring lighting (mixed-light greenhouses or propagation areas) before sunrise or after sunset **MUST** be covered to avoid any effects on nocturnal wildlife. It is recommended that professional, automated light-deprivation greenhouses be used to ensure adherence with these regulations.
- Keeping noise levels at a minimum during cultivation operations will help maintain habitat quality for all wildlife species. If generators are used at any point, they will be shielded with a noise-reduction housing and a noise study will be conducted.

V. References Cited

- California Natural Diversity Database (CNDDDB). 2019. Rare Find 5 [Internet]. California Department of Fish and Wildlife [Version 5.2.14]. Accessed May 2019.
- California Fish Database. 2004. USDA-Forest Service, Pacific Southwest Region. McClellan, CA. Website: <http://calfish.ucdavis.edu/location>; CALVEG, ESRI personal geodatabase. Accessed June 2019.
- California Wildlife Habitat Relationships (CWHR). 2019. California Department of Fish and Wildlife [Internet] <https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range>. Accessed May 2019.
- Final Environmental Impact Report for the Amendments to Humboldt County Code Regulating Commercial Cannabis Activities. 2018. Humboldt County Planning and Building Department. Eureka, CA.
- Google Earth. 2019. Satellite historical imagery 1988-2016. Website <https://www.google.com/earth/>. Accessed May 2019.
- United States Fish and Wildlife Service (USFWS). 2012 (Revised). Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls.
- United States Fish and Wildlife Service (USFWS). 2011. Attachment A: Take and Avoidance Analysis-Coastal. Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls.

Appendix A: Photos (Taken May 1, 2019)

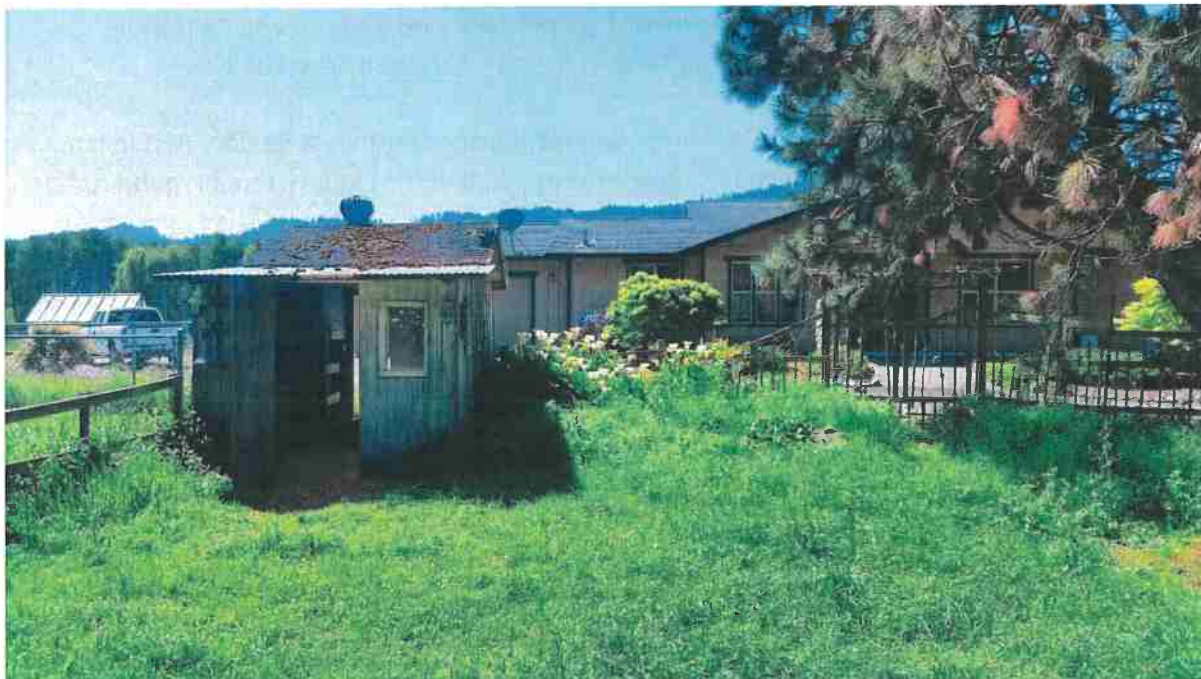


Photo 1. Residence and outbuildings, looking south towards the Van Duzen River corridor



Photo 2. Agricultural barn, small greenhouse, and lavender starts in foreground; cottonwoods in riparian area of Van Duzen River in background



Photo 3. Looking east at alternate view of agricultural barn to right and chicken pen to left; one of two hoophouses visible, right of center



Photo 4. Rotating pen for chickens pending processing for meat

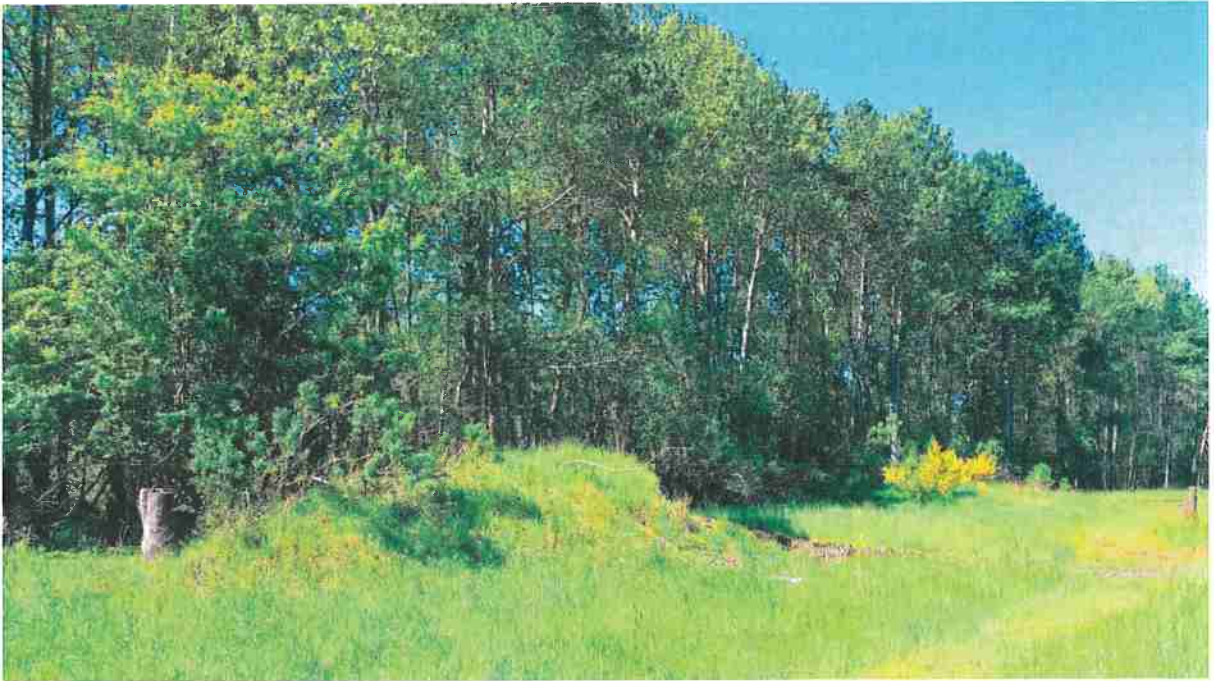


Photo 5. Looking southwest at large cottonwoods forming a narrow riparian zone between the portion of the parcel that is historic farmland, and the portion of the parcel that is gravel bar



Photo 6. Looking north towards the parcel from the gravel bar/high water overflow area of the Van Duzen River



Photo 7. Looking towards the gravel bar on the Van Duzen from the cottonwood riparian zone; this winter's high water floated some woody debris into the area; dying tree cut but not removed by landowner(s)



Photo 8. The same track in Photo 7, looking north towards residential area; hoopouses to right

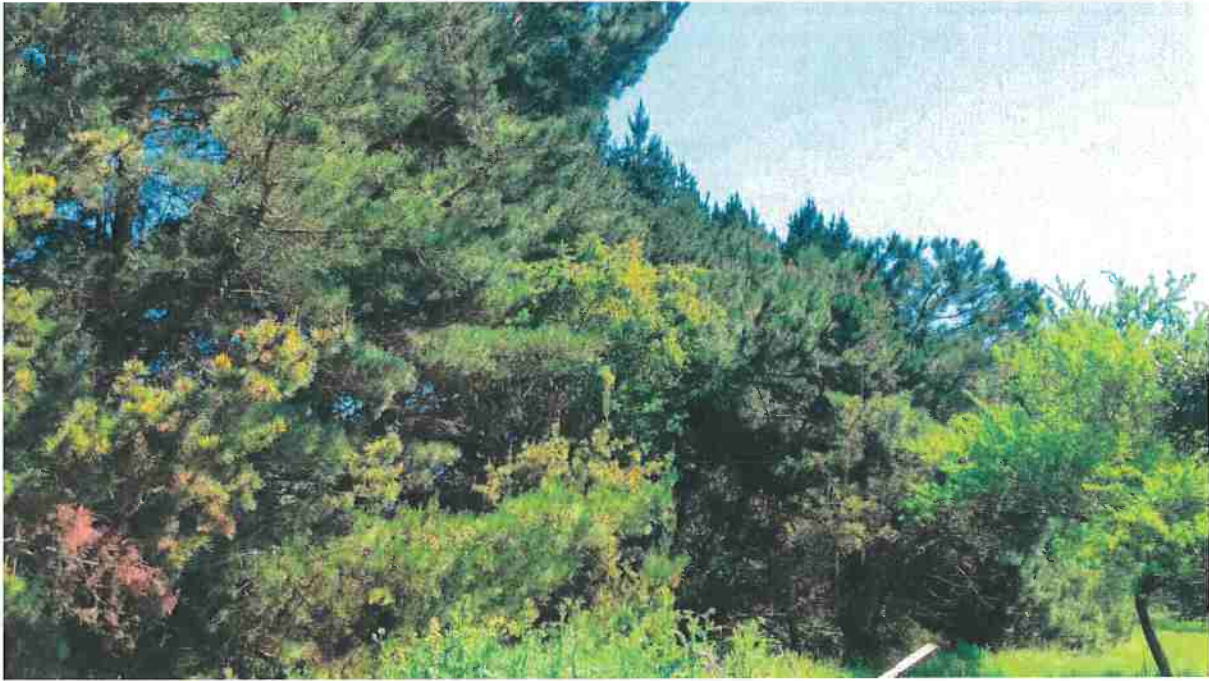


Photo 9. Row of trees on landowner(s) parcel paralleling River Bar Road slated for eventual removal by PG&E



Photo 10. Looking downstream of Van Duzen River (left) at gravel bar and cottonwood riparian zone (right) that are within parcel boundaries



Photo 11. Looking southwest at open portion of parcel



Photo 12. Looking northeast from near Photo 11 to hoopouses and ornamental trees;
residence to left, pond to right

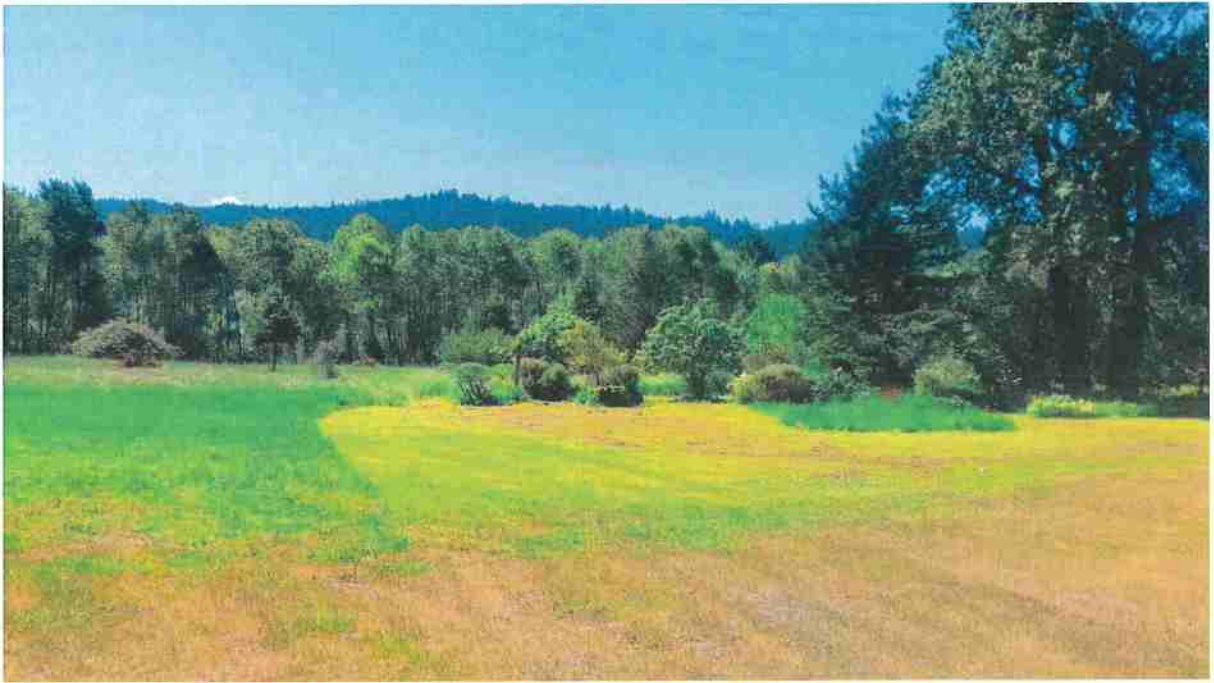


Photo 13. Looking south to Van Duzen river corridor and mowed area that may be used for dahlia production

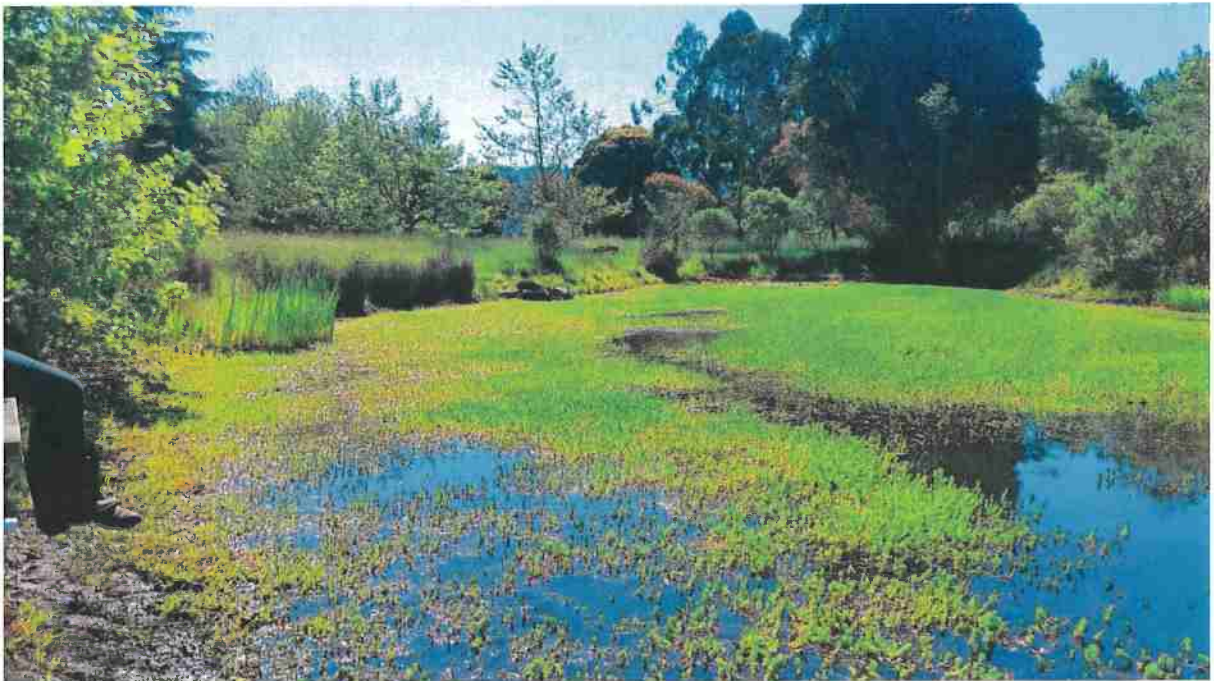


Photo 14. Looking southeast to pond located in the southeast area of the usable portion of the parcel



Photo 15. Alternate view of the pond, looking southwest



Photo 16. Looking west at hoophouses (lavender in left); residential area seen between hoophouses in distance



Photo 17. Second hoophouse under construction



Photo 18. Looking south from portion of parcel between River Bar Road and hoophouses planted by previous owners with a diversity of ornamental, native, and non-native trees



Photo 19. Looking southwest from Van Duzen River channel towards parcel located on far side of cottonwood riparian zone (most distant trees)



Photo 20. On the bank of the Van Duzen River channel

Appendix B: Well Report

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 1
(Insert appropriate number)

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)
STATE OF CALIFORNIA

02N01E-29 H
Do Not Fill In
No. 22888
State Well No. _____
Other Well No. _____
CONFIDENTIAL LOG
Water Control Code 10752

(1) LOCATION OF WELL:
County Humboldt Owner's number, if any: _____
R. F. D. or Section No. _____
One mile southeast on county road #
210, Between Alton, California and
Hydesville, California

(2) LOCATION OF WELL:
County Humboldt Owner's number, if any: _____
R. F. D. or Section No. _____
One mile southeast on county road #
210, Between Alton, California and
Hydesville, California

(3) TYPE OF WORK (check):
New well Deepening Reconditioning Abandon
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic Industrial Municipal
Irrigation Test Well Other

(5) EQUIPMENT:
Rotary
Cable
Dug Well

(6) CASING INSTALLED:
SINGLE DOUBLS
From 0 30 ft. to 12 ft. Diam. 3/16
Type and size of pipe or well ring _____
Ductile joint Welded

If gravel packed
Diameter of bore from _____ to _____
Size of gravel _____

(7) PERFORATIONS:
Type of perforator used torch
Size of perforations 3 in., length by 3/16 in.
From 13 ft. to 28 ft. Perf. per foot _____

(8) CONSTRUCTION:
Was a casing safety seal provided? Yes No To what depth _____ ft.
Were any struts sealed against pollution? Yes No If yes, cover depth of struts _____
From _____ ft. to _____ ft.
Method of Sealing _____

(9) WATER LEVELS:
Depth at which water was first found 10 ft.
Standing level before perforating 81 ft.
Standing level after perforating 181 ft.

(10) WELL TESTS:
Was a pump test made? Yes No If yes, by whom? _____
Yield _____ gal./min. with _____ ft. draw down after _____ hrs.
Temperature of water _____ Was a chemical analysis made? Yes No
Was electric log made of well? Yes No

(11) WELL LOG:
Total depth 30 ft. Depth of completed well 30 ft.
Formation: Describe by color, character, size of material, and structure.

0	ft. to	2	ft.	top soil
2	ft. to	6	ft.	sand
6	ft. to	10	ft.	cemented gravel
10	ft. to	15	ft.	free gravel
15	ft. to	20	ft.	cemented gravel
20	ft. to	30	ft.	free gravel

Work started 5/13/56 LP Completed 5/19/56 LP

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME Olsen Implement Co., Inc.
Address Fairdale, California
[Signed] [Signature] Well Driller
License No. 144127 Dated 5/25/57, 19____
DWR FORM NO. 246 (REV. 3-54)

Well photos



Appendix C: Engineer Letter

Chapman Engineering
P.O. Box 2756
McKinleyville, CA 95519
707-839-0298
Chapman@Tidepool.com

Owner David & Taylor Parris
Address 1806 River Bar Rd
Fortuna
AP # 204-331-019
Date March 27, 2019

I have evaluated the well depth and river level data collected at this site to determine whether the well is influenced by the river level.

There is no correlation between the river water level and the water level in the well. Also the water level in the well is approximately ten feet above the typical water level in the river – which indicates that the water level in the well is due to water moving toward the river and not at all influenced by the level of the water in the river.

I have evaluated the construction of the proposed greenhouses.

These greenhouses are not within an area of moving water (floodway) and will resist all applied hydrostatic forces without suffering from floatation, collapse or lateral movement from the hydrodynamic and hydrostatic forces including the effects of bouyancy.

If you have any questions, please call me.

Thank You
Marvin Chapman



To whom it may concern,

David Parris (APN 204-331-019) contracted with NRM on to complete work required for Cannabis permitting. We will be writing a Site Management Plan for this property and expect this document to be finished and submitted to the State Water Board by October 31st, 2019. This document will summarize the current property and project conditions, as the relate to sediment erosion and control.

Sincerely,



Alicia Heitzman
Cannabis Compliance Supervisor
Wildlife Biologist
NRM Corp.
(707)269-1377



Premises Diagram

