BIOLOGICAL SURVEY

26921 North Highway One
Fort Bragg CA 95437

Prepared by: Dark Gulch Environmental Consulting ~ Fort Bragg CA

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Project and Location Description

Project Description:

- Create the CAL Fire prescribed 100-foot defensible space including the removal of tan oak (*Notholithocarpus densiflorus* var. *densiflorus*) trees infected with Sudden Oak Death (*Phytophthora ramorum*) and other diseased and dying trees.
- Widen the easement on the property to accommodate fire apparatus and other necessary emergency equipment.
- Maintain the utility easement on the north, east and south boundaries of the property by clearing brush and pruning trees as needed to decrease fire risk.
- Replant trees including white alder (*Alnus rhombifolia*) in the riparian zone and plant berries and fruit-bearing trees to create orchards on the project site.
- Repair and replace the existing relic fence with a six-foot tall fence around the perimeter of the property, using a design that is wildlife-friendly.
- Maintain the riparian zone on the western boundary of the property

The current property owners purchased this property with the intent of creating fruit-producing gardens and orchards in areas that were already disturbed and planted with non-native vegetation. Most of the project site has been graded and the native vegetation removed, most likely to create a suitable pad for the house and other structures. Much of the vegetation that had regrown or was replanted consisted of ornamental shrubs and plants and invasive species.

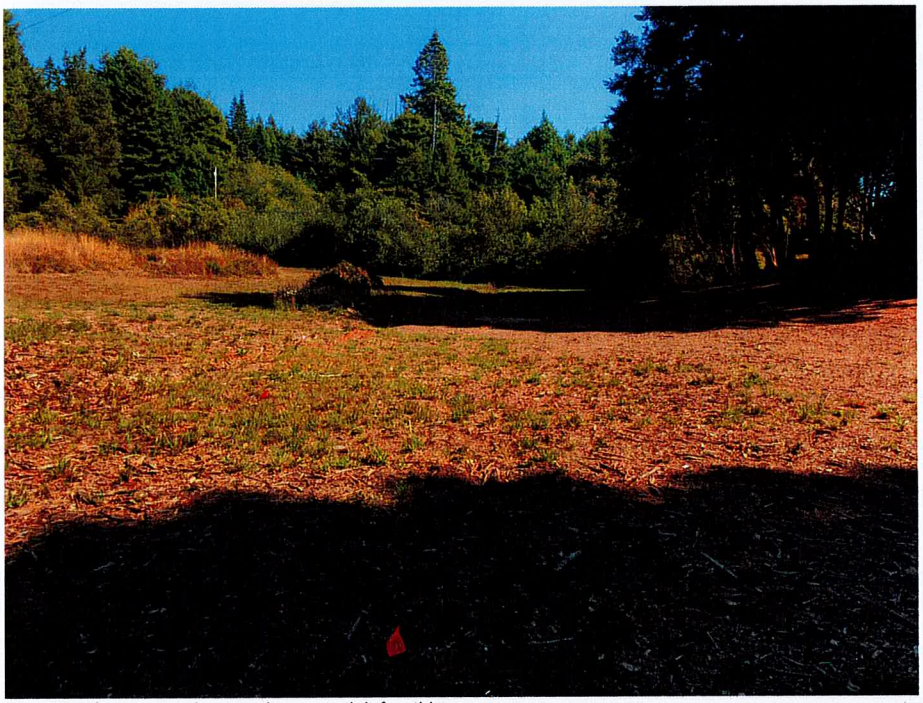
Solanum aviculare, one of many non-native plants found on the project site.

Many of the native tan oak (*N. densiflorus* var. *densiflorus*) had died due to Sudden Oak Death. The property was overgrown with no defensible space around the house and other buildings. The Google Earth image from 2005 shows a different vegetation pattern than later images (Attachment 1). Later Google Earth images show differing vegetation patterns, but clearly show the lack of defensible space around any building (Attachments 2 & 3). With the large number

Project and Location Description

of wildfires throughout the state in the last several years, the owners were very concerned about the potential fire danger and lack of access for fire equipment and personnel (BOF 2006).

The current owners began removing vegetation within one hundred feet of the house and other structures to create the required defensible space (BOF 2006).



East side of property, showing the created defensible space.

They also removed trees that were dead, broken or split. This included tan oaks (*N. densiflorus var. densiflorus*), bishop pines (*Pinus muricata*) and one grand fir (*Abies grandis*). Many of the dead and/or diseased *N.densiflorus* var. *densiflorus* were located within the utility easement, creating a safety concern for not only the property owner, but for surrounding properties as well. The owners intend to continue to keep the brush and trees pruned to help reduce the fire risk in this area. Finally, restrictions were removed from adjacent to the property easement to ensure that fire equipment and personnel could navigate the easement. This work was done at the suggestion of Fort Bragg Fire Department.

It is the intention of the property owners to replant areas on the west and east sides of the house with approximately 3000 blueberry bushes. They wish to revegetate the riparian areas near the western edge of the property with native plants including the twelve white alders (*A. rhombifolia*) that were removed. The remainder of the flat area will be planted with berries and fruit trees, to be harvested. The other areas of the property that have been cleared will be maintained as open space, planted with grasses and kept mowed short. This area will serve as defensible space to insure fire safety for the house and other structures.

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Currently, a relic wire fence exists on the perimeter of the parcel. It is falling down and currently serves no purpose other than marking the property boundary. The west, north and east sides of the parcel are marked by fence posts with vestige barbed wire, delineating the property boundary. The owners wish to repair this existing fence and enhance it by installing a six-foot tall woven wire or hog panel fence. This fence will allow the owners dogs to roam the property, but will keep them from leaving the property, potentially creating a hazard on the state highway or impacting other property owners. It will also prevent the dogs from chasing wildlife and causing environmental degradation. Simply, responsible pet owners fence their property to protect their pets. The fence will allow small wildlife to pass through the wire and will still allow other animals to jump or climb over.

Relic fence located along south boundary of property.

Finally, the riparian zone on the eastern boundary of the property will be maintained as a riparian zone. The area has been marked with T-post-style stakes from the center of the creek/stream to a distance of 50 feet. This area will be expanded to encompass the entire wetland/riparian area as delineated by US Fish and Wildlife Service (Attachment 4). These stakes will remain in place to ensure that this area is not further impacted by mowing or other activities. The white alder (*A. rhombifolia*) will be replanted at a rate of two trees for each one that was removed. The trees will be purchased from a reputable nursery to ensure that the soil the trees are grown in does not contain seeds or other invasive species. Other native plant will be planted in the area as well, to provide nutrients and habitat for species such as monarch butterflies and for other native pollinators. These will include *Achillea millifolium* and other species of yarrow. While this area is not designated as a riparian zone on the "Wetland Map National Wetlands Inventory" (Attachment 4), it has been designated as a riparian zone by

Project and Location Description

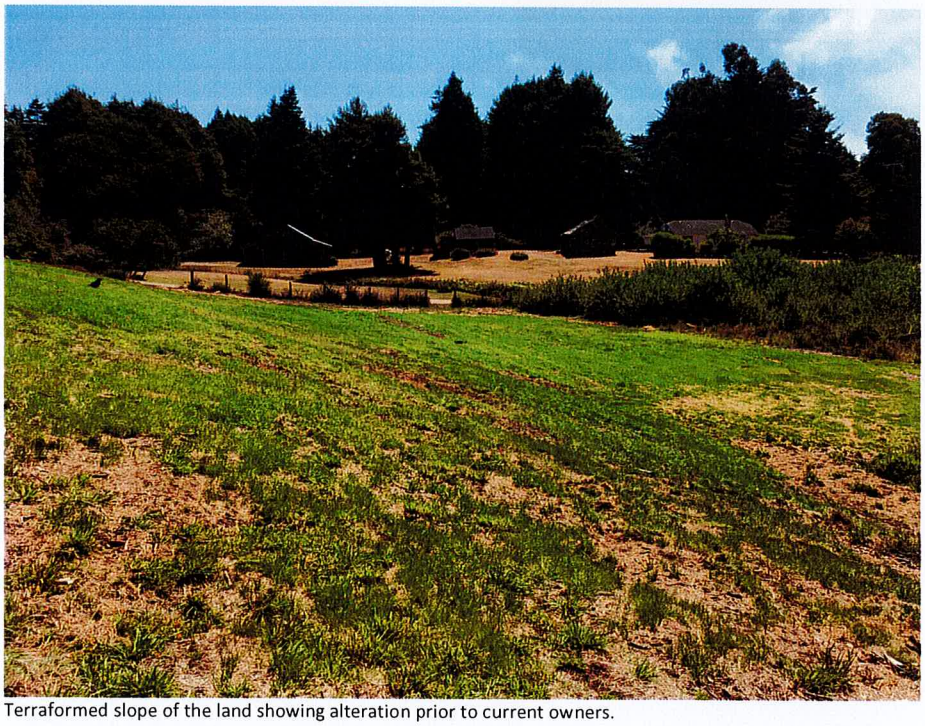
California Department of Fish and Wildlife and will be treated and maintained as such (Attachment 5).

Riparian area along west boundary of property. Many species are invasive and exotic in nature.

Biological Setting ~ 26921 North Highway One, Fort Bragg CA 95437

The project site has a physical address of 26921 North Highway One, approximately six miles north of the city of Fort Bragg. This site is located approximately one mile east of the Pacific Ocean, with dunes and forest separating this location from the water. The area is comprised of other homesites ranging in size from 1.6 acres to more than 80 acres (Attachment 6). Several of the larger parcels have timber harvest plans in place and have been logged in the last ten years. An unnamed seasonal stream crosses the property from south to northwest in the front quadrant of the property and drains into Inglenook Creek. Another drainage crosses the property from south to northwest, bisecting the rear quadrant of the property. This drainage does not appear on any watershed or watercourse maps and appears to be manmade. It transports water from the neighboring properties to the south across the project site and into a drainage ditch that is parallel to the south side of the driveway on the north side of the property.

The topography of the project site has been drastically terraformed, ostensibly to create a large flat area for the home site and surrounding gardens (Attachment 7).



Terraformed slope of the land showing alteration prior to current owners.

The slope of the land does not match with the surrounding properties, showing a clear pattern of large-scale terraforming and an alteration of the natural topography and impacting the flow of water across the property. The home was built in the 1990's and all inspections and permits were filed and finalized as required by law. A map of the soils is included for reference (Attachment 8).

The previous owners of the property planted much of the acreage with ornamental and non-native vegetation. There was a large stand of bamboo to the south of the house, estimated to

encompass .25 acres. Evidence of extensive plantings of ornamental and invasive plants remains throughout the property. As the previous owners aged, it appears that they stopped maintaining the plantings and left the property to grow naturally. This led to large areas of invasive Himalayan blackberries, Scotch broom and other non-native, aggressive species that populated much of the property.

Remnant bamboo stand, on the south-east corner of the property.

This lack of attention also led to quite a few dead trees being left standing, increasing the fire danger for a property that was already overgrown and virtually indefensible with regards to fire.

The current owners removed the dead and dying trees as well as removing the invasive bamboo stand to the south of the house. They also had many of the trees that were in the Pacific Gas and Electric power line right of way removed or trimmed to reduce fire danger. Vegetation along the driveways and close to the house was removed to create the required minimum one hundred feet of defensible space. Vegetation, mainly invasive and exotic species, was removed within fifty feet of the unnamed creek, leaving a wide riparian area. A contract

employee did remove approximately twelve white alder (*A.rhombifolia*) trees from the bottom of the hillside on the west side and several within the riparian zone.

A vegetation map of potentially occurring sensitive natural communities was supplied by California Department of Fish and Wildlife (Attachment 9). This map was used as a reference for some of the communities and plant taxa that might occur within the project site. It is important to note that this project site was largely cleared of vegetation prior to any surveys being performed.

Survey Methodology

Sarah Bradley is the primary investigator for this Biological Assessment of 26921 North Highway One, Fort Bragg CA 95437. I have a Master of Science in Ecology & Sustainability from California State University Stanislaus. I have a minor in Botany, with extensive experience in identifying species by use of dichotomous keys.

John Huff acted as an assistant to the primary investigator. He has extensive forestry experience from his ten years of experience with CalFire and the US Forest Service. Mr. Huff assisted by taking measurements of cleared land, identification of trees by the remaining stumps. He also assisted by acting as a scribe to leave the PI's hands free.

Surveys were conducted on:
May 25, 2018 – overview of entire site, identifying features and other noteworthy landmarks. Identified primary vegetation types and patterns and investigated the extent of vegetation removal from locations throughout the property. Total of 4.5-man hours.

May 28, 2018 – PI focused on riparian area on the west side of the project site. Identification of species present as well as identifying and quantifying the tree species that were cut down previously. The assistant measured and flagged the cleared area around the homesite that is considered defensible space. No survey is being done within this area. Total of 4.5-man hours.

June 4, 2018 – PI focused on area between the riparian zone to the west and the defensible space to the east. Much of this area was recently cleared. Total of 4.0-man hours.

June 7, 2018 – PI again focused on riparian area on the west side of the project site. Total of 4.0-man hours.

June 15, 2018 - PI focused on drainage area that parallels the driveway on the north side of the project site. Total of 1.5-man hours.

June 21, 2018 – PI focused on previously flagged species that were in question, to determine if they were flowering or displaying other identifying characteristics. Total of 2.0-man hours.

July 5, 2018 – PI again focused on previously flagged species that were in question. Total of 2.0-man hours.

July 23, 2018 – PI focused on wooded area to the east of the project site. 2.0-man hours

July 24, 2018 – PI focused on apparently man-made drainage ditch that runs south to northwest on the rear quadrant of the project site. Total 2.0-man hours

August 10, 2018 – PI focused on revisiting all areas of project site and confirming species identification from previous surveys. All flagging of unidentified species or species that were only identified to Family level were GPS tagged and photographed. These photos and GPS tags are attached to this report.

Survey Methodology

A search of the California Native Data Base was made and a list was compiled for the Inglenook quadrant to determine the potential special status species that may occur (Attachment 10). All special status species were then confirmed by use of *The Jepson Manual – Vascular Plants of California* (2012). A further internet search was made to find reputable photographs to aid in identification (Attachment 11). These photos were all taken from the website www.calphotos.berkeley.edu. This website, managed by UC Berkeley, has strict standards and guidelines and is considered to be a verifiable source for identifying photographs.

A further investigation and research into soil types and habitat definitions as used by the California Native Plant Society and throughout *The Jepson Manual* was made, to ensure that the investigators were clear on defining characteristics of habitats.

List of all plant taxa occurring in the project area:

Scientific Name	Common Name
Alnus rhombifolia	White alder
Anagallis arvensis	scarlet pimpernel
Arctostaphylos glandulosa	manzanita
Argyranthemum spp.	margariete daisy
Cirsium occidentale	thistle
Collinsia gladiflora	Chinese houses
Conium maculatum	poison hemlock
Cyperus eragrostis	flat sedge
Cytisus scoparius	Scotch broom
Digitalis purpurea	foxglove
Equisteum arvense	horsetail reed
Gaultheria shallon	salal
Juncus effusus var. *pacificus*	Pacific rush
Leucanthemum vulgare	shasta daisy
Notholithocarpus densiflorus var. *densiflorus*	tanoak
Oxalis oregana	Redwood sorrel
Pinus muricata	Bishop pine
Pinus radiata	Monterey pine
Polystichum californicum	sword fern
Pteridium aquilinum var. *pubsecens*	Bracken fern
Rubus armeniacus	Himayayan blackberry
Rubus parviflorus	Thimbleberry
Rubus ursinus	California blackberry
Lolium spp.	Ryegrass species
Salix spp.	Willow species

Survey Methodology

Sequioa sempervirens	Redwood
Solanum aviculare	nightshade
Taraxacum erythrospermum	red-seeded dandilion
Taraxacum officinale	common dandilion
Tsuga heterophylla	western hemlock
Vaccinium ovatum	California huckleberry
Vicia sativa sub. *sativa*	spring vetch

A false negative is possible because approximately 1.5 acres were cleared of most of the vegetation prior to any surveys being conducted. The current owners state that the trees that were removed were "bull pine", a local commonly used name for Bishop pine (*P. muricata*) and tan oak (*N. densiflorus* var. *densiflorus*); the remaining stumps give validity to that statement. The owners also state that the vegetation that they removed was a combination of Himalayan blackberries (*R. armeniacus*), various ornamental shrubs and several varieties of bamboo. A large area around the house has been planted with sod, removing the ability to determine what, if any, native plants may have existed. This area was cleared more than two years ago in an attempt to create defensible space in the case of a wildfire. The area between the top of the man-made slope and the riparian area was cleared more recently; the area has since been re-seeded to reduce the risk erosion. The remaining vegetation suggests that the majority of the removed vegetation was invasive and/or non-native ornamental plantings. The regrowth observed on August 10, 2018 supports this assumption

In the last two years, there has been above-average rainfall, following a five-year period of drought conditions. Temperatures have been average, however there have been less foggy days that normal for this year. The effect of these conditions is impossible to ascertain because much of the land had been altered prior to any surveys.

These surveys were conducted during the late spring and summer months, therefore theoretically providing the best opportunity to see species during a period of inflorescence. There were only two species that were not able to be identified due to lack of identifying characteristics.

Previous studies were not located; information obtained from the California Department of Fish and Wildlife's BIOS system and CNDDB system was used to help determine possible sensitive species. No voucher species were collected.

Assessment of Potential Project Impacts

This study showed no special status species and/or no sensitive plant communities are located on this project site. Large areas of the project site were cleared of vegetation prior to any survey's being conducted which hampers the investigation of special status species. However, the remaining vegetation shows a pattern of large-scale disturbance. This is evidenced by the large willow tract located near the south west corner of the project site. This area is heavily vegetated with willow all of similar size.

Salix spp. all of similar height indicating large disturbance.

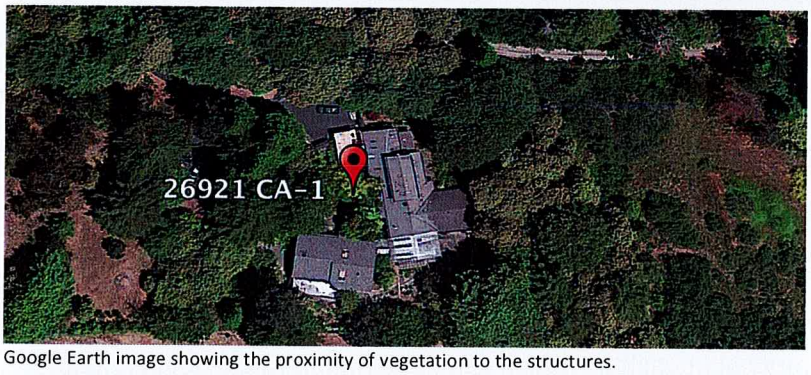
The lack of spatial difference suggests that a disturbance impacted this area and the regrowth is all of the same age. The current stand of willows shows no distinction between young, new growth and mature trees. This project will not impact the riparian zone that has remain vegetated; therefore, no survey of that area was performed. The riparian/wetland area that was disturbed by removal of vegetation was surveyed and is included in this report. This area will be replanted with white alders (*A. rhombifolia*) and other native species, with particular attention being given to species that are found in wetland and riparian areas and provide nutrients for pollinator species.

The man-made slope of the land clearly indicates that the vegetation that did exist in this area was not sensitive natural communities; it was a semi-natural alliance dominated by ornamental shrubs and invasive species. All terraforming was performed prior to the current owners purchasing the property. It is assumed that all grading and land alteration was done as part of the grading to develop the homesite prior to construction. The historical Google Earth images

do not show any sort of disturbance since 1998, the first image available. The current owners have not done any sort of land moving, grading or terrain alteration. While these areas may hold some small habitat benefit, there overall value is minimal at best. These communities tend to exist in areas that are already disturbed and are dominated by exotic and potentially invasive species. They tend to out-compete native communities and do not offer the necessary habitat and nutritional value to native fauna.

The overall non-native condition of the project site lends itself well to the project proposal as presented by the owners. While the site was largely covered with vegetation when the current owners purchased it, this vegetation was not sensitive natural communities. The altered slope of the land clearly shows that the property was largely terraformed and therefore the natural communities forever altered. Any vegetation that existed was ornamentals plants and invasive species. Sensitive natural communities rely on alliances of plants, not a single species.

The removal of vegetation in the creation of defensible space is a necessity with the high risk of fire that we are facing. While currently, the project location is within an area deemed "moderate" fire risk by Cal Fire, it was also heavily overgrown and would have been deemed "undefendable" in an assessment for structure protection in the case of an emergency for a wildland fire. Had one of the structures caught on fire with the overgrowth of vegetation, there was a high potential for spread to other structures and to the surrounding forests.



Google Earth image showing the proximity of vegetation to the structures.

Dead trees lead to an increase in wildland fire danger. Tan oaks (*Notholithocarpus densiflorus* var. *densiflorus*) that are impacted by Sudden Oak Disease are often standing with dead leaves still on the branches. There were more than thirty-five dead and dying trees on the project site, with many of them very close to the houses or in the easement for the utilities. In the case of a fire, these dead, diseased trees would burn very easily and rapidly, acting as ladder fuels in an area with extensive vegetation (Valachovic, et al., 2009). The removal of these trees has not been shown to help stop the spread of the disease, however it does decrease the risk to life and property from fire danger (Sudden Oak Death, 2010).

The remnant riparian area that is on the western boundary of the project site will be maintained, with the exception of replanting of white alder (*Alnus rhombifolia*) trees. A total of twelve white alders were removed from the riparian area and they will be replanted at a rate of

Assessment of Potential Project Impacts

two to one. This will give the new trees a good chance of survival without greatly altering the community structure. The stumps from the previously felled trees are showing regrowth and will be left in place. The riparian area that was previously cleared will be replanted with native species and will be maintained as habitat for wildlife.

Alnus rhombifolia showing regrowth after being cut down several months ago.

The owners of the property wish to establish a blueberry orchard in the cleared area on the east and west sides of the homesite. These plants will provide food for various species of bees including the non-native European honey bees that are being threatened by a variety of environmental and anthropogenic factors. The pollen produced by the berries can provide needed nutrients for native bumble bees, as well as for butterflies and other species that feed on pollen. These plants will be irrigated using a drip-style system to direct the irrigation to the target plants while being mindful of excessive water use.

The south side of the project site is currently fenced by a relic wire fence. There are posts, with barbed wire still attached in various locations along the other three sides of the property. This fence is clearly not functional and the owners desire to repair this existing fence and make is a usable barrier. A woven wire fence will not prevent wildlife from going over it or through it

but will prevent the owner's dogs from escaping. This is not only imperative to keep the dogs safe but is also a means to keep the dogs from impacting wildlife outside of the property. It is the hope of the owners that the fence will allow the deer and other ungulates to still enter the property while preventing the dogs from escaping.

The project as proposed does not negatively impact sensitive habitats or special status species. It will help protect this property from wildfire and consequently will protect surrounding habitat from spreading of a structure fire. This project addresses the concerns presented by the local Fire Department related to access and increased fire danger and the danger of fire starting in a utility easement. Gusty winds in excess of 70 miles an hour are not uncommon on the coast; these are the same conditions that are responsible for the Redwood Complex fires in 2017 (Attachment 12).

Neighboring parcels have been cleared of most native vegetation and/or logged recently, therefore negating the cumulative impact on sensitive natural communities in the area. The open space created by the current owners is not unlike the surrounding properties, therefore it is does not create an eyesore.

After spending many hours surveying this project site, investigating the previous land use and comparing the topography with the neighboring parcels, it is reasonable to conclude that the actions of the current owners did not cause wide-scale disturbance to sensitive natural communities. While the changes that have occurred do appear drastic when compared with the overgrown and unmanaged state of the property that was allowed to exist by the previous owners, they did not affect sensitive natural communities. The habitat was already disturbed and infested with non-native species. It was overgrown and presented a clear fire danger to the entire area. The removal of the continuous fuel-loading from a likely ignition point on Highway One will help prevent the spread of a wildland fire to adjoining parcels and structures. The owner's removal of noxious and invasive species will only benefit the surrounding habitat, leading to a more healthy and stable community structure.

Unidentified Plant

Unidentified plant.

References

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, Editors. 2012. *The Jepson Manual: vascular plants of California, second edition.* University of California Press, Berkeley, CA.

BIOS Database. California Department of Fish and Wildlife.

Bossard, C.C., J.M. Randall and M.C. Hoshovsky. 2000. *Invasive Plants of California's Wildlands.* University of California Press, Berkeley, CA.

California Native Plant Society Rare Plants Database.

Hickman, J.C., Editor. 1993. *The Jepson Manual: higher plants of California.* University of California Press, Berkeley, CA.

Johnson, J., R.Digitale and J.D. Morris. 2018. Cal Fire: PG & E Equipment Caused 12 Northern Californi Fires During October Firestorm. Santa Rosa Press Democrat.

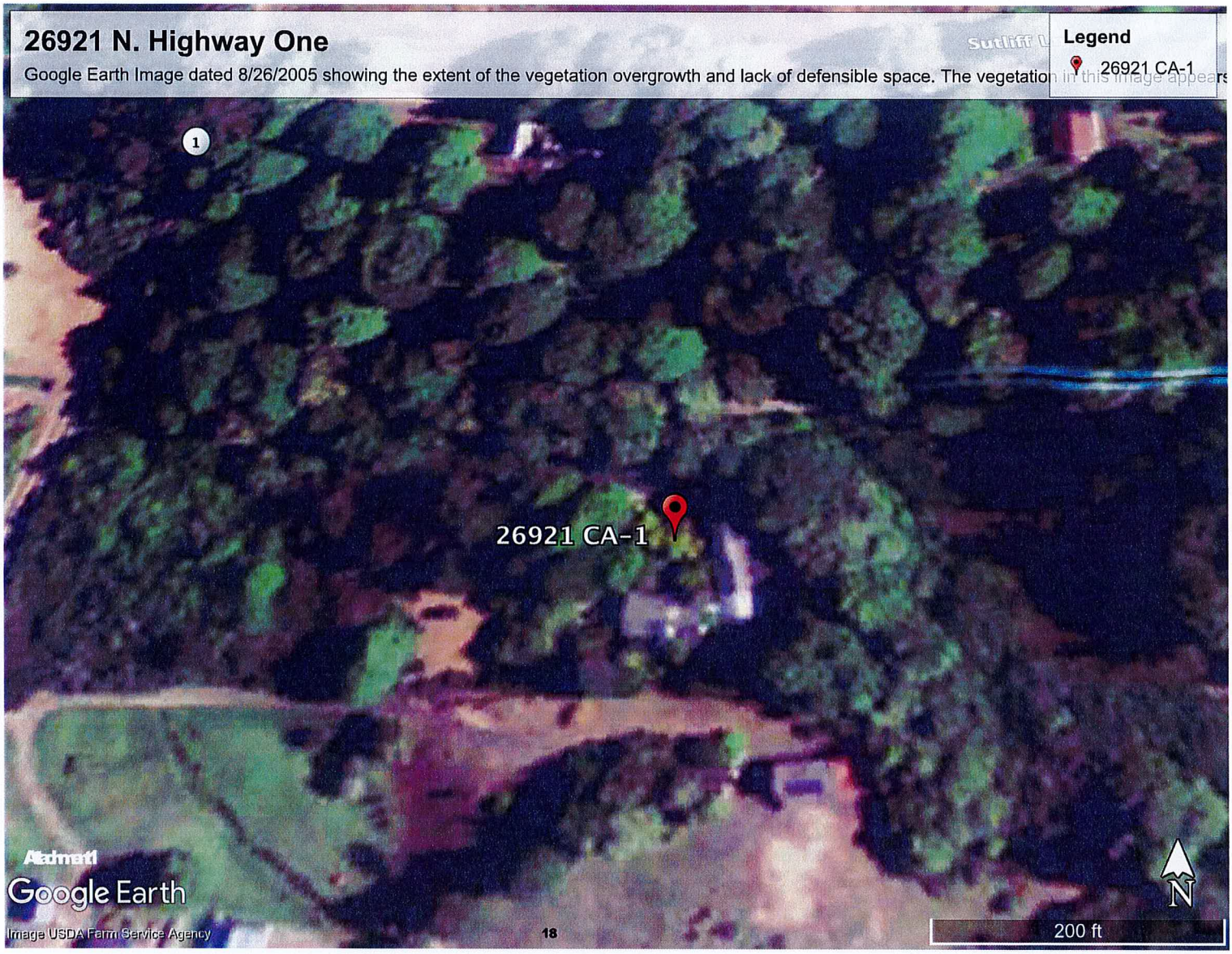
State Board of Forest and Fire Protection (BOF). 2006. General Guidelines for Creating Defensible Space.

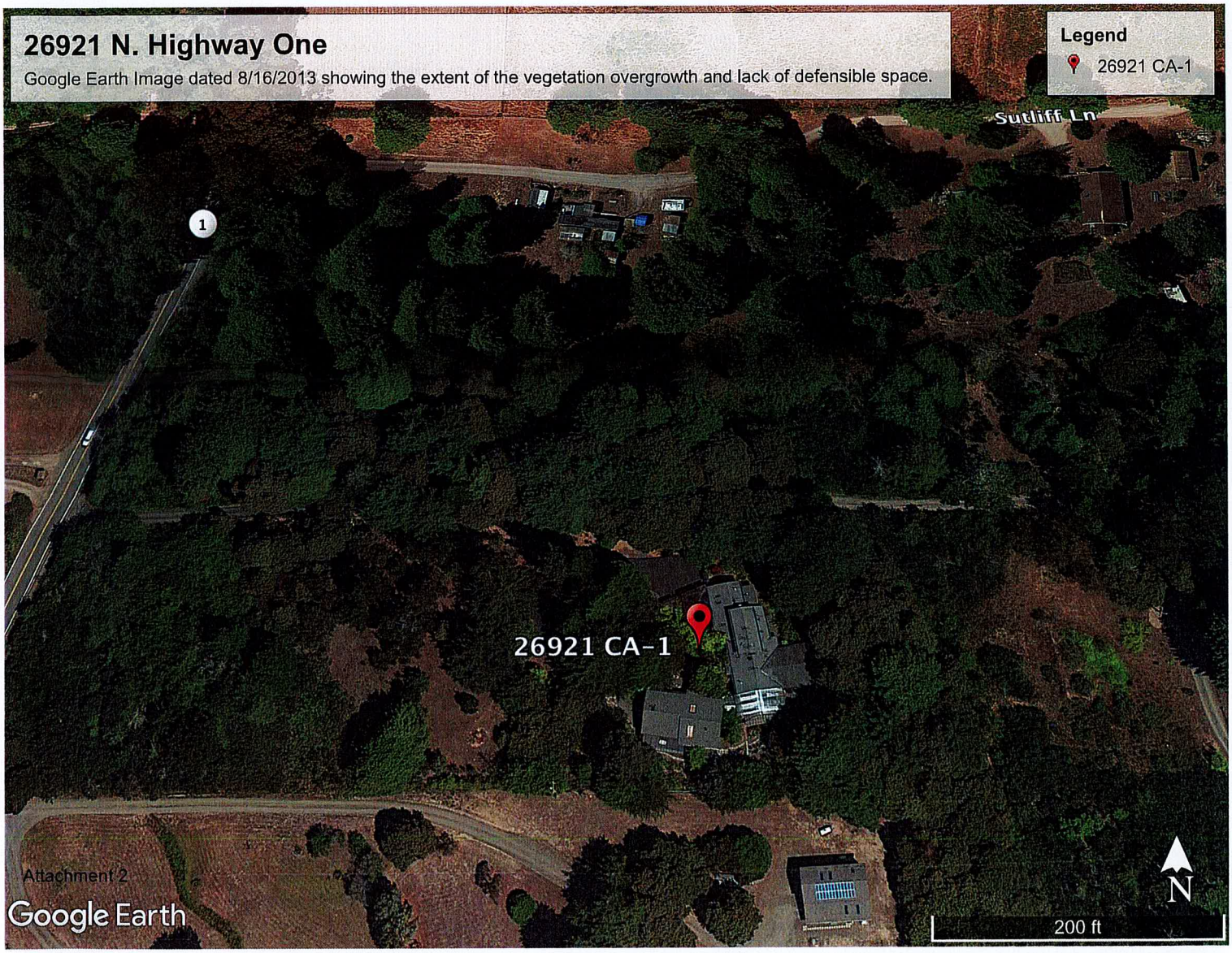
Sudden Oak Death. 2010. Statewide Integrated Pest Management Program. University of California.

Valachovic, Y., C. Lee, R. Glebocki, H. Scanlon, J.M. Varner and D. Rizzo. 2009. Understanding the Long-Term Fire Risks in Forests Affected by Sudden Oak Death. Gen. Tech. Report PSW-GTR-229.

26921 N. Highway One

Google Earth Image dated 8/26/2005 showing the extent of the vegetation overgrowth and lack of defensible space. The vegetation in this image appears




26921 N. Highway One
Google Earth Image dated 8/16/2013 showing the extent of the vegetation overgrowth and lack of defensible space.
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Sutliff Ln
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Attachment 2
Google Earth
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26921 N. Highway One
Google Earth Image dated 5/28/2014 showing the extent of the vegetation overgrowth and lack of defensible space.
Legend
26921 CA-1
1
26921 CA-1
Attachment 3
Google Earth
20
N
200 ft

Attachment 4

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetland Map National Wetlands Inventory

August 10, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

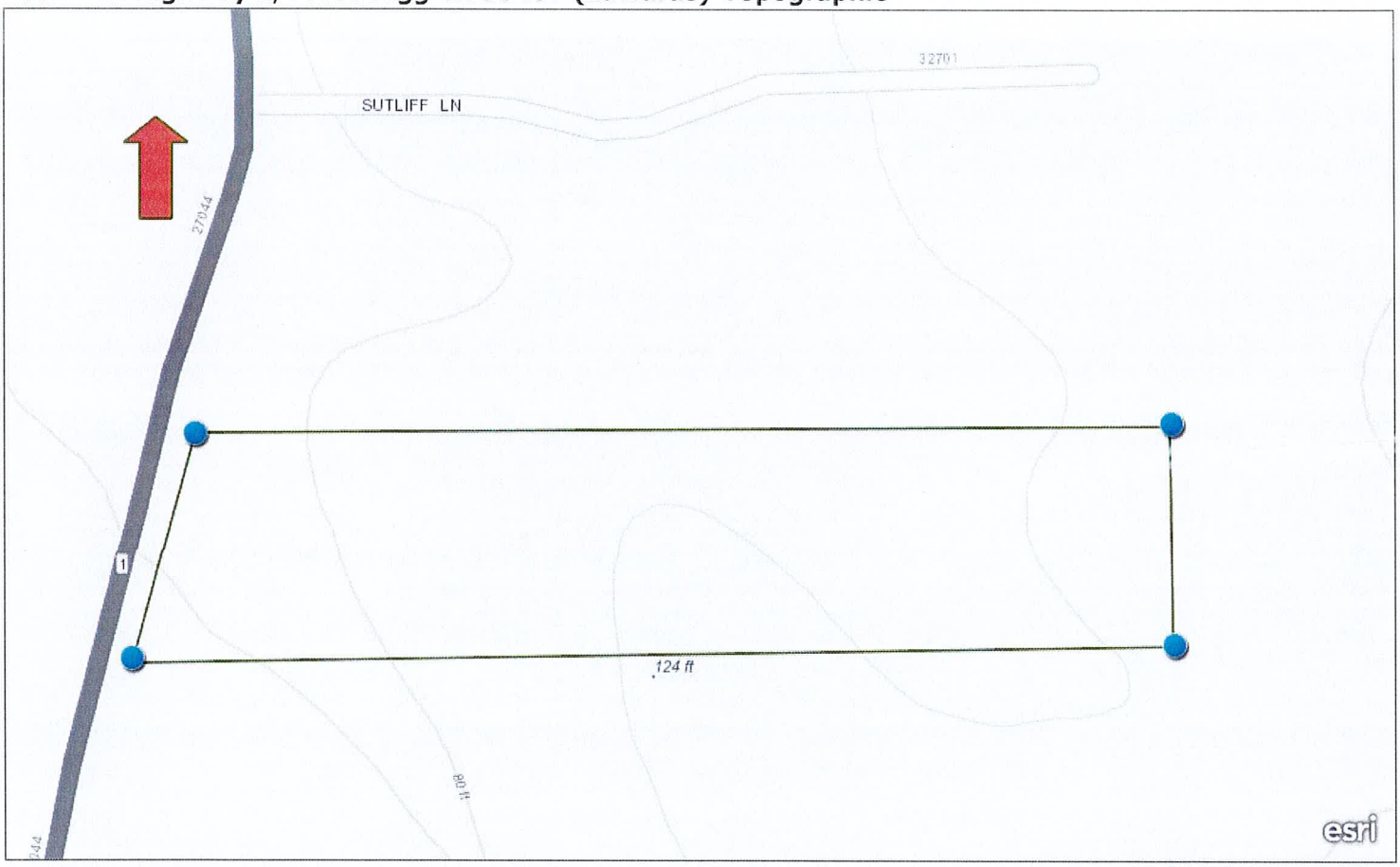
26921 Hwy 1, Fort Bragg

Author: aliebenberg
Printed from http://bios.dfg.ca.gov

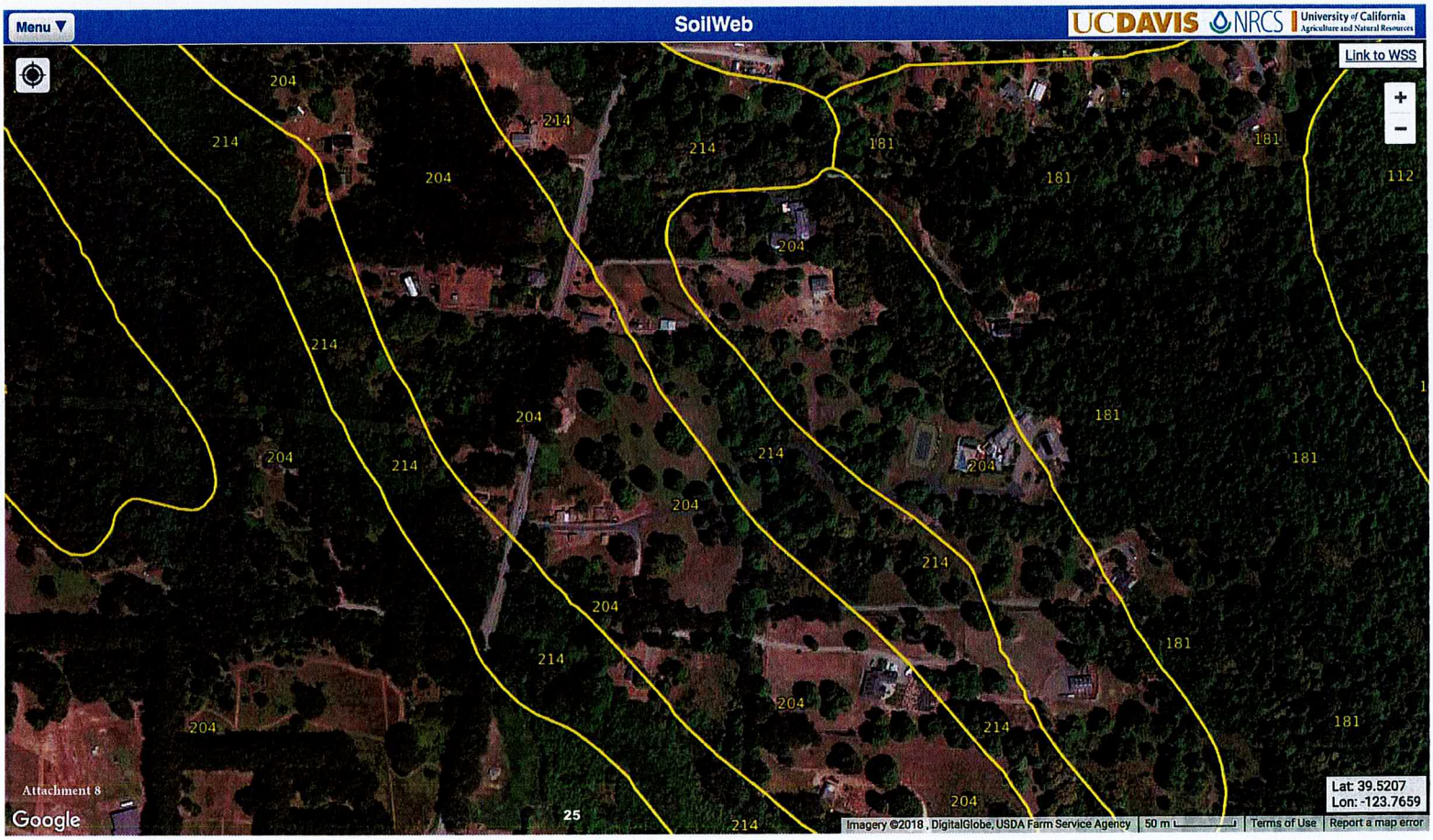
Parcel Map showing surrounding properties 26921 N. Highway One - Edwards

Attachment 6

26921 N. Highway 1, Fort Bragg CA 95437 (Edwards)-Topographic



Attachment 7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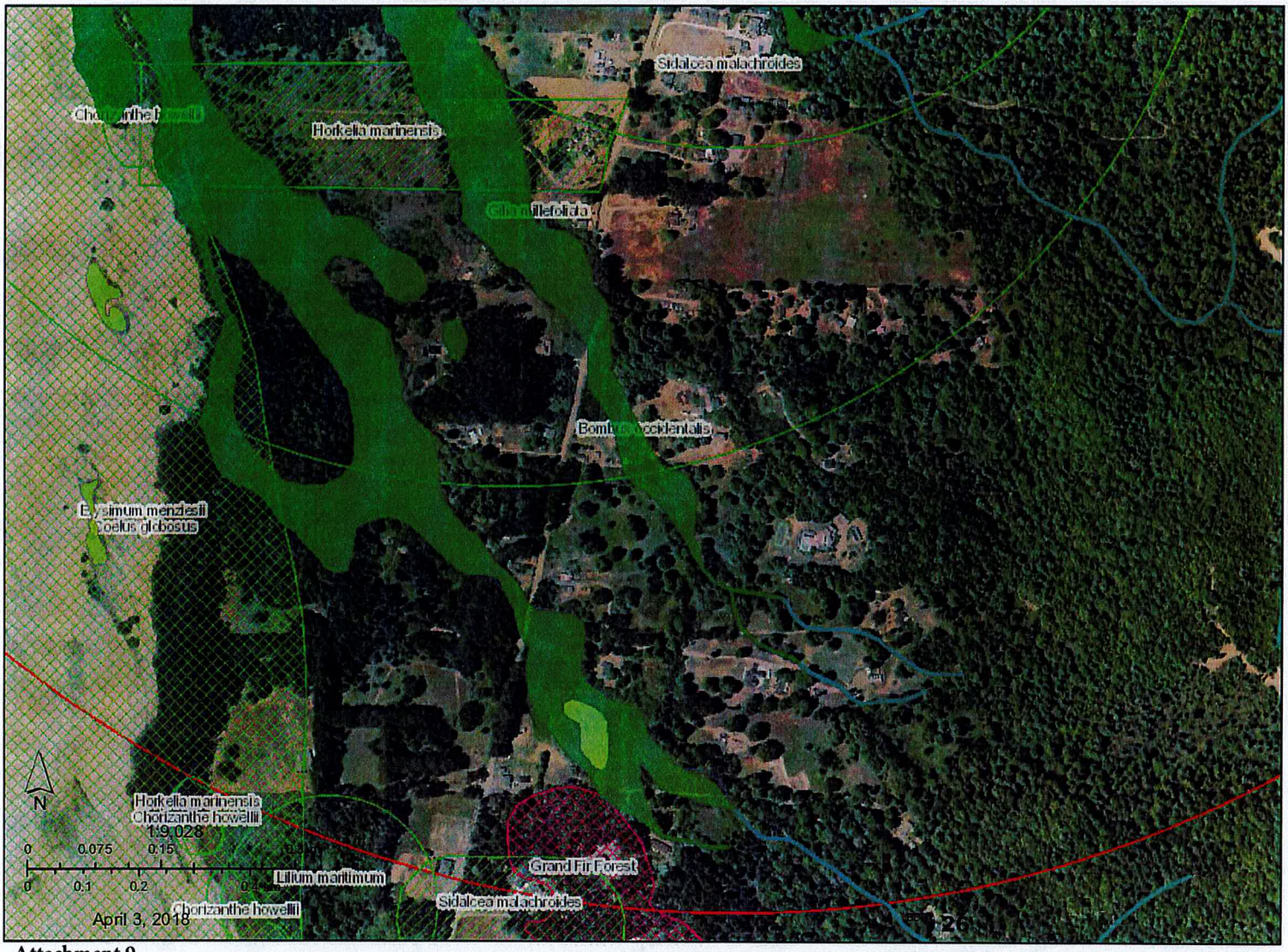
26921 Hwy 1, Fort Bragg



Attachment 9

Author: aliebenberg

Special Status Plants

Scientific Name	Common Name	Federal status	State Status	CDFW Status	CA Rare Plant Rank	Notes:
Triquetrella californica	coastal triquetrella	none	none	-	1B.2	possible
Usnea longissima	Methuselah's beard lichen	none	none	-	4.2	possible
Angelica lucida	sea-watch	none	none	-	4.2	on CNPS Inventory of Rare and Endangered Plants; habitat wrong according to Jepsons
Hesperevax sparsiflora var. brevifolia	short-leaved evax	none	none	-	1B.2	possible
Lasthenia californica ssp. bakeri	Baker's goldfields	none	none	-	1B.2	possible - grasslands
Lasthenia californica ssp. macrantha	perennial goldfields	none	none	-	1B.2	possible -scrubs
Erysimum menziesii	Menzies' wallflower	Endangered	Endangered	-	1B.1	wrong habitat type; Coastal Dunes
Campanula californica	swamp harebell	none	none	-	1B.2	possible
Cascuta pacifica var. papillata	Mendocino Dodder	none	none	-	1B.2	wrong habitat type; Coastal Dunes
Carex lyngbyei	Lyngbye's sedge	none	none	-	2B.2	on CNPS Inventory of Rare and Endangered Plants; habitat wrong - no brackish water on project site
Carex saliniformis	deceiving sedge	none	none	-	1B.2	possible
Carex viridula ssp. viridula	green yellow sedge	none	none	-	2B.3	on CNPS Inventory of Rare and Endangered Plants; habitat wrong according to Jepsons - requires sphagnum bog
Rhynchospora alba	white beaked-rush	none	none	-	2B.2	possible in riparian area
Hosackia gracilis	harlequin lotus	none	none	-	4.2	possible
Phacelia insularis var. contenentis	North Coast phacelia	none	none	-	1B.2	on CNPS Inventory of Rare and Endangered Plants; habitat wrong according to Jepsons
Iris longipetala	coast iris	none	none	-	4.2	possible
Lilium maritimum	coast lily	none	none	-	1B.1	possible
Sidalcea malachroides	maple-leaved checkerbloom	none	none	-	4.2	possible
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	none	none	-	1B.2	possible
Veratrum fimbriatum	fringed false-hellebore	none	none	-	4.3	possible in riparian area
Abronia umbellata var. breviflora	pink sand verbena	none	none	-	1B.1	requires coastal dunes; wrong habitat
Clarkia amoena ssp. Whitneyi	Whitney's farewell-to-spring	none	none	-	1B.1	on CNPS Inventory of Rare and Endangered Plants; habitat wrong according to Jepsons
Oenothera wolfii	Wolf's evening-primrose	none	none	-	1B.1	possible in riparian area
Castilleja mendocinensis	Mendocino Coast paintbrush	none	none	-	1B.2	possible
Collinsia corymbosa	round-headed Chinese-houses	none	none	-	1B.2	requires coastal dunes; wrong habitat
Calamagrostis bolanderi	Bolander's reed grass	none	none	-	4.2	possible
Calamagrostis crassiglumis	Thurber's reed grass	none	none	-	2B.1	possible
Gilia capitata ssp. pacifica	Pacific gilia	none	none	-	1B.2	possible
Gilia millefoliata	dark-eyed gilia	none	none	-	1B.2	requires coastal dunes; wrong habitat
Chorizanthe howellii	Howell's spineflower	Endangered	Threatened	-	1B.2	requires coastal dunes; wrong habitat
Coptis laciniata	Oregon goldthread	none	none	-	4.2	elevation too low - higher than 500 m.
Horkelia marinensis	Point Reyes horkelia	none	none	-	1B.2	requires coastal dunes; wrong habitat
Mitellastra caulescens	leafy-stemmed mitrewort	none	none	-	4.2	possible in riparian area

Sensitive Natural Communities

Scientific Name	Common Name	Federal status	State Status	CDFW Status	Notes:
Coastal Brackish Mars	Coastal Brackish Marsh	None	None	-	does not occur on site; elevation too high
Fen	Fen	none	none	-	does not occur on site
Grand Fir Forest	Grand Fir Forest	none	none	-	Located to the south of the site according to BIOS mapping
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	none	none	-	does not occur on site; elevation too high

Special Status Animals

Scientific Name	Common Name	Federal status	State Status	CDFW Status	Notes:
Ascaphus truei	Pacific tailed frog	none	none	SSC	requires rocky streambeds, no habitat on site[4]
Rana aurora	northern red-legged frog	none	none	SSC	possible habitat; does not show on BIOS maps
Rana boylii	foothill yellow-legged frog	none	Candidate Threatened	SSC	possible habitat; does not show on BIOS maps
Rhyacotriton variegatus	southern torrent salamander	none	none	SSC	possible habitat; does not show on BIOS maps
Taricha rivularis	red-bellied newt	none	none	SSC	possible habitat; does not show on BIOS maps
Charadrius alexandrinus nivosus	western snowy pover	Threatened	None	SSC	wrong habitat - requires beaches, sandy flats [1]; location sandy beaches[2]
Pelecanus occidentalis californicus	California brown pelican	Delisted	Delisted	FP	wrong habitat - salt bays, beaches, oceans[1]; location along coasts, foraging in shallow waters of oceans, bays and lagoons[2]
Eucyclogobius newberryi	tidewater goby	Endangered	None	SSC	no habitat - requires shallow bays[3]
Oncorhynchus kisutch pop. 4	coho salmon- central CA coastal ES	Endangered	Endangered	-	no habitat - marine fish[3]
Oncorhynchus mykiss irideus pop. 16	steelhead - northern CA DPS	Threatened	None	-	no habitat - creek is too small to support large fish species
Bombus caliginosus	obscure bumble bee	none	none	-	
Bombus occidentalis	western bumble bee	none	none	-	possibly occuring - shown on BIOS mapping
Coelus globosus	globose dune beetle	none	none	-	wrong habitat - requires dune habitat
Arborimus pomo	Sonoma tree vole	none	none	SSC	wrong habitat - requires large Douglas Fir forests, usually dense. Does not show on BIOS maps
Noyo intersessa	Ten Mile shoulderband	none	none	-	possible habitat; does not show on BIOS maps

[1] *Peterson Field Guides - Western Birds*

[2] *The Sibley Field Guide to Birds of Western North America*

[3] *Guide to the Coastal Marine Fishes of California - California Fish Bulletin Number 157*

Attachment 11

Triqueltrella californica
coastal triquetrella

Usnea longissima
Methuselah's beard lichen

Ramalina thrausta Angel's hair lichen

Sidalcea malviflora ssp. purpurea purple-stemmed checkerbloom

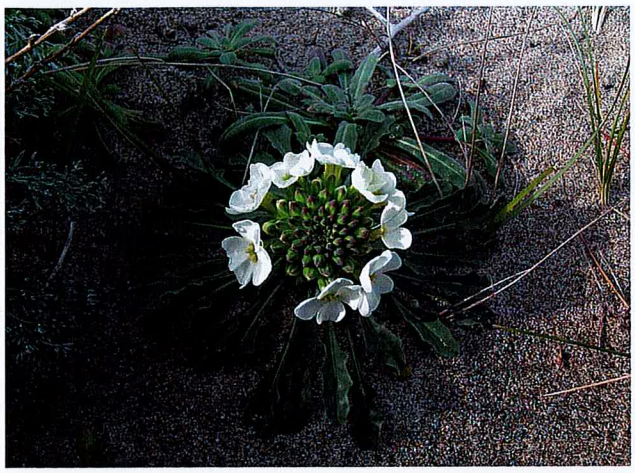
Sidalcea malachroides maple-leaved checkerbloom

Hesperevax sparsiflora var. brevifolia short-leaved evax

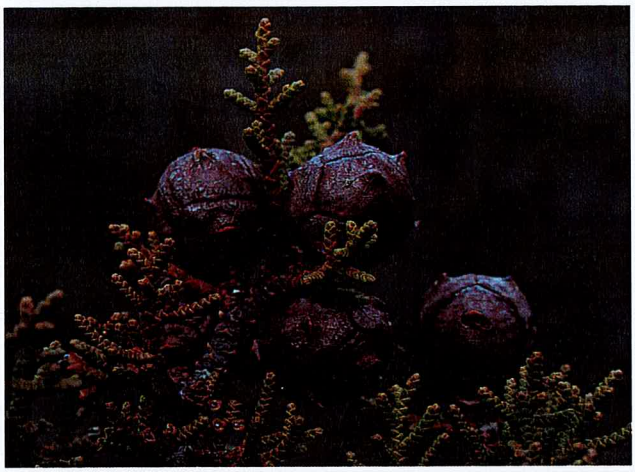
Lasthenia californica ssp. bakeri Baker's goldfields

Lasthenia californica ssp. macrantha perennial goldfields

Packera bolanderi var. bolanderi



Erysimum coninnum bluff wallflower



Hesperocyparis pygmaea pygmy cypress

Rhynchospora alba white beaked-rush

Carex saliniformis deceiving sedge

Carex californica California sedge

Hosackia gracilis harlequin lotus

Iris longipetala coast iris

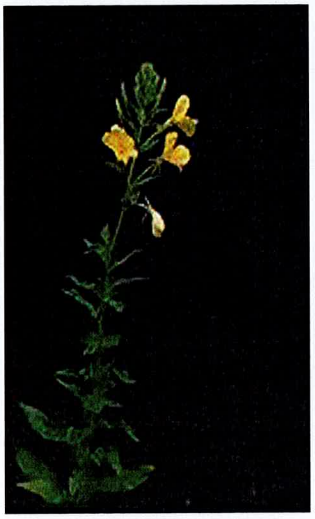
Fritillaria roderickii Roderick's fritillary

Juncus supiniformis hair-leaved rush

Lilium maritimum coast lily

Blennosperma nanum var. robustum Point Reyes blennosperma

Veratrum fibriatum fringed false-hellebore



Oenothera wolfii Wolf's evening-primrose

Castilleja mendocinensis Mendocino Coast paintbrush

Castilleja ambigua var. ambigua

Caslamagrostis bolanderi Bolander's reed grass

Calamagrostis crassiglumis Thurber's reed grass

Calamagrostis foliosa leafy reed grass

Agrostis blasdalei Blasdale's bent grass

Gilia capitata ssp. pacifica Pacific gilia

Ceanothus gloriosus var. exaltatus glory bush

Mitellastra caulescens leafy-stemmed mitrewort

Viola palustris alpine marsh violet

Campanula californica swamp harebell

Attachment 12

Cal Fire: PG&E equipment caused 12 Northern California fires during October firestorm

JULIE JOHNSON, ROBERT DIGITALE AND J.D. MORRIS
THE PRESS DEMOCRAT | June 8, 2018, 4:17PM

Cal Fire investigators said Friday that equipment owned and operated by PG&E ignited 12 wildfires that raged in hot, dry weather and high winds across Northern California in October, charring hundreds of square miles in Sonoma County and beyond, destroying thousands of structures and killing 18 people.

The utility was in violation of state code on eight of those fires, failing to clear brush around its lines and properly maintain its power equipment, according to state fire investigators.

Cal Fire found violations in the Norrbom, Partrick, Pythian, Adobe and Pocket fires that burned in Sonoma and Napa counties; the Atlas fire in Napa County; the Sulphur fire in Lake County; and the Blue fire in Humboldt County. The agency forwarded its reports to district attorneys in those jurisdictions for review.

In the other four fires — the Redwood in Mendocino County, Cherokee in Butte County and the 37 and Nuns fires in Sonoma County — flames were ignited by power equipment but investigators found no evidence the utility company had violated state regulations.

The report is the latest set of findings from state fire investigators examining the causes of dozens of fires that burned more than 245,000 acres across Northern California in October, destroyed nearly 6,200 homes and killed 44 people.

The probes have now found evidence in 11 of the 16 fires that PG&E had allegedly violated state codes designed, in part, to prevent fires by keeping tree limbs and other vegetation away from power lines.

Investigators have not yet released their determination on the Tubbs fire — the state's most destructive — that burned from Calistoga into Santa Rosa, killing 22 people and destroying more than 4,000 homes, most of them in Santa Rosa.

PG&E issued a statement that "we look forward to the opportunity to carefully review the Cal Fire reports to understand the agency's perspectives."

"Based on the information we have so far," the company said, "we continue to believe our overall programs met our state's high standards."

The utility giant has been fighting for its future in Sacramento, lobbying lawmakers to change the state Constitution to remove a legal doctrine that requires the utility to pay for private property damage even if it isn't found to have been negligent.

Called inverse condemnation, the legal safeguard ensures private property owners are compensated for damage related to public infrastructure, including private utility and telecommunications equipment, regardless of fault.

Patrick McCallum, a Sacramento lobbyist whose Santa Rosa home was destroyed in the Tubbs fire, criticized PG&E's attempt to diminish its potential financial liabilities related to the fires.

He heads a coalition of displaced residents and trial attorneys called "Up From the Ashes."

"PG&E has been trying to duck responsibility for the fires, blaming everything from climate change to local fire departments and the state's liability laws," McCallum said in an email. "Cal Fire's report puts the blame where it belongs — squarely on PG&E, confirming it was responsible for many of the fires that devastated so many lives."

Beyond the Tubbs fire, it's unclear how many more reports remain for Cal Fire to complete. Spokesman Scott McLean said he didn't know the number of outstanding investigations. The remaining four Northern California fire deaths were in a Yuba County blaze whose cause has not yet been determined by Cal Fire. State firefighters responded to more than 170 fires in October, but many of those were small, McLean said.

"They are very meticulous and they're very determined to get to the cause and get that information to the public," he said.

State Sen. Bill Dodd, D-Napa, called the alleged violations of state code "disappointing and deeply concerning."

"It's inexcusable, and it can't be allowed to happen again," he said in a statement.

Dodd called on PG&E, other utilities in California and the state Public Utilities Commission "to step up and ensure they are meeting their legal obligations to maintain power lines in a safe manner."

State Sen. Mike McGuire, D-Healdsburg, praised Cal Fire for an "extensive and thoughtful investigative process" and called the report a "step forward in getting the answers communities deserve."

"I've always said if PG&E or any other company is found negligent, they should be responsible for the damages caused by this devastating blaze," McGuire said.

Sonoma County Board of Supervisors Chairman James Gore said the results were not

surprising given "reports all over the region of trees going into lines and then sparking." Gore called for change from the utility, which the county is suing because of the fires. But he cautioned against going too far.

"Anything we do with PG&E going forward has to be about this not happening again, not just trying to extract blood money to pay for impacts," he said.

The alleged violations of state law now must be considered by county prosecutors, including Sonoma County District Attorney Jill Ravitch.

In an interview Friday, Ravitch said her staff is working with counterparts in Napa and Lake counties, as well as in the state Attorney General's Office, to "review the investigation and determine what steps will be taken."

In its statement, PG&E noted it prunes or removes approximately 1.4 million trees annually as part of an "industry-leading vegetation management program." The company maintained it also meets or exceeds state requirements for managing patrols and inspections of more than 2 million power poles it owns.

Since 2014, the utility said, it has increased daily aerial fire detection patrols during high fire season, added foot and aerial patrols of power lines in high fire-risk areas and removed "hundreds of thousands of dead or dying trees" weakened by drought and bark beetle infestations.

Friday's release underscored the public's interest in learning the cause of the historically destructive Tubbs fire, which leveled Santa Rosa's Fountaingrove and Coffey Park neighborhoods. The first Sonoma County couple known to have sued PG&E after the blazes — one of now hundreds of lawsuits seeking damages from the utility after the firestorm — had their home destroyed in Coffey Park.

Late last year, the state Public Utilities Commission posted reports online of at least four wildfires that began in October at or near addresses where damaged PG&E

equipment was discovered. Three of the blazes — the Atlas, Partrick and Nuns fires — were among those listed in Friday's report with their causes tied to utility equipment. The fourth was the Tubbs fire, for which regulators reported that damaged utility equipment had been found at a property in Calistoga near that fire's origin.

However, PG&E in November raised the possibility that power equipment "owned, installed and maintained by a third party" at that same Calistoga address might be responsible for the Tubbs fire and not the utility's equipment.

Santa Rosa Mayor Chris Coursey said Cal Fire findings were "what everyone has suspected all along" and he will be surprised if the Tubbs fire investigation concludes any differently.

"We were obviously affected by all kinds of fires last October, but the Tubbs fire did the vast majority of the damage within city limits," Coursey said. "I'm really anxious to see what the determination is on that fire."

PG&E has filed claims arguing Sonoma County and the city may share responsibility for the damage if PG&E is found liable for the fires.

Early on in the firefight, PG&E equipment seemed a likely ignition source for the fires.

With crews still battling to contain the infernos, more than two dozen members of Cal Fire's investigative branch were deployed to help pinpoint the origins of each fire and start trying to determine what caused them. They examined burn patterns and physical evidence, interviewed witnesses including 911 callers, and reviewed dispatch records.

They also examined the utility equipment at the origin areas of many of the fires. Last year, PG&E notified the Public Utilities Commission that investigators seized the company's equipment, including damaged power poles and downed lines near the origins of several wildfires.

On May 25, Cal Fire released a first set of investigations into some of the smaller fires that broke out in October in Butte and Nevada counties, saying those fires were all caused by trees or branches falling into PG&E power lines.

In three of those cases — the Lobo and McCourtney fires in Nevada County and the Honey fire in Butte County — investigators found PG&E was responsible and alleged the utility violated state code requiring that utilities maintain adequate clearance between power lines and trees or other vegetation, and sent those reports to District Attorneys for review.

The investigations suggest the utility giant could face significant financial liability for the firestorm, which was fueled by winds gusting up to 65 mph late Oct. 8 and early Oct. 9.

The investor-owned utility faces hundreds of lawsuits from people who lost homes or family members in the fires, in addition to lawsuits lodged by the counties of Sonoma, Lake, Mendocino and Napa over its alleged role in the historic fires.

PG&E has $800 million in liability insurance, but insurance claims from the fires now total nearly $10 billion.

Cal Fire's findings don't provide a sure path to victory for the burned-out residents suing PG&E, but the findings bolster arguments that PG&E is to blame for at least some of the damage. The lawsuits claim PG&E is responsible because it failed to properly maintain its power lines and didn't prepare for high winds, which were predicted days in advance. PG&E lawyers have argued the fires were a result of multiple unprecedented weather impacts, including a multiyear drought.

Santa Rosa attorney Noreen Evans, who is on a legal team representing about 1,300 clients suing PG&E over the fires, said Cal Fire's announcement validates what lawyers suing the utility have known for "quite some time." And she found it noteworthy that the Atlas fire had been referred to the Napa County District Attorney's office, calling it

"really serious," given that six people died in that fire.

Cal Fire's findings provide a framework for how to argue the case in court, said John Fiske, a lawyer representing burned-out residents as well as Sonoma, Napa and Mendocino counties in their litigation against PG&E.

Fiske said plaintiffs intend to prove PG&E was negligent even in cases where Cal Fire found no state code violation by arguing the utility company should have maintained its equipment and developed sufficient plans for protecting against fires during predicted windstorm events.

"Just because they're not in violation of a statute doesn't mean they weren't negligent," Fiske said.

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:
Address 24921 N Highway 1

Observers: S. Bradley Date: 5/25/2019

Time Start: 1300hrs Time End: 1615 hrs

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat _____ Long _____

Additional Directions: overview of site, flag spp in?

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
tan oak	26	25=1 1=0	a couple might be on other parcels
bishop pines	8	8=1	
exotic succulent plant (photo)	2	1	need to look up
manzanita (woolly)	14	1	
Salix spp	LOTS	1	all same height
bamboo spp.			
Taraxacum officinale	4	1	
salal			
redwood sorrel			
redwoods	LOTS		
Scotch? broom			
Himalayan blackberry	139		
sedge (photo)			
Digitalis spp	18		
Equisetum spp.	Lots		
white alder			
Cirsium spp (native I think)	4	1	

Botanical DATA SHEET, CONTINUED

Dark Gulch Environmental Consulting, PAGE 2

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
planted grass on huge area Sod			
redwoods planted down S. border			
dandilion + non native spp			photo
Anagallis arvensis	87	1	in all areas
Mystery Sedge			
poison hemlock	9	1	

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:
Address 21092 N. Highway 1

Observers: SBradley JHuff Date: 5/28/18

Time Start: 1400 hrs Time End: 1615 hrs

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat _____ Long _____

Additional Directions: riparian area on west boundary

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
	12 14		
Alnus rhombifolia	18	32=1 12=0	cut down, poss alive
Digitalis purpurea	40	1	
Rubus armeniacus	infrst	1	
Anagallis arvensis	29		
Salix spp			
Pacific hish			
Tall flatsedge			
Yarrow			
Thimbleberry			
Salmonberry			
P. Muricata	2		
Tan oak			
E. arvense			
Cirsium spp			
Sword fern			
mystery sedge			
Shasta daisies			

Botanical DATA SHEET, CONTINUED

Dark Gulch Environmental Consulting, PAGE 2

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
Margarite daisies.			
grasses - non native			
bracken fern.			
purple ornamental shrub.			

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:
Address 21921 N. Highway 1

Observers: SBradley, JHuff Date: 6/4/13

Time Start: 1100 Time End: _____

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat _____ Long _____

Additional Directions: Cleared area between bottom of hill & riparian zone to west. transects @ 3' intervals

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
R. armeniacus	609	1	lots of sprouts in area
E. arvense	101	1	edges mainly
D. purpurea			
J. effusus pacificus	97	1	
A. arvensis	41	1	
Cirsium spp unk	19		immature, no flowers
Cytisus scorparius	9	1	
Mystery sedge	8	1	
Unidentified grass #1	87	1	flagged for id later
Unidentified grass #2	101	1	flagged for id later
Unidentified grass #3	21?	1	flagged for id later

Area freshly mown, everything very young!

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:
Address 21092 N Highway 1

Observers: S.Bradley J.Huff Date: 6/7/18

Time Start: ______ Time End: ______

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat ______ Long ______

Additional Directions: riparian zone on west side of property

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
V. ovatum			
R. spectabilis			
D. purpurea	81	70=1	spreading
Salix spp			
White alders		12=0 11=1	
E. arvense			
R. armeniacus			
Cirsium occidentale	8		
Mustang sedge			
yarrow			
O. oregana			
tan oak			
P. muricata	2	1	
P. aquilinum			
R. parviflorus			
Pacific rush			
Tall flat sedge			

Botanical DATA SHEET, CONTINUED

Dark Gulch Environmental Consulting, PAGE 2

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
Sword fern	Lots		
Shasta daisys	4		
Margarite daisie	3		
purple ornamental shrub	2		
A. dunes	14		

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:

Address: 21921 N. Highway 1

Observers: S.Bradley, J.Huff Date: 6/15/18

Time Start: 1100 Time End:

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat Long

Additional Directions: drainage on North side of property

Species	**# observed**	**Condition Class** 1 = alive 0 = dead	**Notes** (optional)
white alder			
D. purpurea			
E. arvense			
R. armeniacus			
J. effusus subsp pacificus			
C. eragrostis			
S. sempervirens			
V. ovatum			
O. oregana			
R. parviflorus			
N. densiflorus var densiflorus			
R. spectabilis			
Polystichum californicum			
R. ursinus			
A. officinale			
T. occidentale			

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:

Address 21825 N. Highway 1

Observers: S. Bradley Date: 6/21/18

Time Start: _____ Time End: _____

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat _____ Long _____

Additional Directions: further id of primary flagged spp

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
#1 reed plant - Juncus effusus?			not possible
#2 sedge			Not identified
#3 thistle			
#4 purple monkeyflower			
#5 unknown -			cant id spp
#6 reed ?			?
#7 sedge Cyperus eragrostis			

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:
Address 21921 N. Highway 1

Observers: S Bradley Date: 7 / 5 / 18

Time Start: ______ Time End: ______

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat ______ Long ______

Additional Directions: further ID of flagged spp

Species	**# observed**	**Condition Class** 1 = alive 0 = dead	**Notes** (optional)
#1 reedplant - Juncus effusus sp pacificus			need to id !
#2 sedge Cyperus eragrostis			
#3 Cirsium occidentale			
#4 purple ornamental ?			need id
#5 Achillea millefolium			
#6 Juncus effusus ssp pacificus			
#7 C. eragrostis			

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:
Address 21692 N. Highway 1

Observers: SBradley, JHuff Date: 7 / 28 / 13

Time Start: _____ Time End: _____

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat _____ Long _____

Additional Directions: Worked area east
* looked at shrub layer & up

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
G. shallon			
Pteridium aquilinum			
C. scoparius			
S. simpervirens			
Vaccinium ovatum			
Oxalis oregana			
Rubus parviflorus			
Tan oak		4=1, 2=0	dead standing
P. murrayana			
B. spectabilis			
Arctostaphylos glandulosa			
Pinus radiata			

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:

Address 21921 N. Highway 1

Observers: S. Bradley Date: 7 / 24 / 13

Time Start: _____ Time End: _____

Town: Fox Bragg County: Mendocino State: CA

Coordinates: Lat _____ Long _____

Additional Directions: "driveway" crossing bridge quadrant of property

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
Equisetum arvense			
Cirsium spp			
Arundo donax			
Conium maculatum			
bamboo			
Taraxacum officinale			
Taraxacum erythrospermum			
Dicots			
Rubus ursinus			
Cytisus scoparius			

Botanical DATA SHEET

Dark Gulch Environmental Consulting

General:

Address 21921 N. Highway 1

Observers: S Bradley, J Huff Date: 3/10/13

Time Start: _____ Time End: _____

Town: Fort Bragg County: Mendocino State: CA

Coordinates: Lat _____ Long _____

Additional Directions: final review & search for previously known spp

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
White alders	12	1	regrowing from stumps
Digitalis purpurea			
Equisetum hyemale			
Rubus armeniacus			
Anagallis arvensis			
Iris spp			
Juncus effusus ssp. pacificus			
Cyperus eragrostis			
Holcus lanatus			
Ryegrass - non native			
Vicia sativa ssp. sativa			
Rubus ursinus			
Pteridium aquilinum			
Cytisus scoparius			
Stipa sp.			
Vaccinium ovatum			
Rubus parviflorus			

Botanical DATA SHEET, CONTINUED

Dark Gulch Environmental Consulting, PAGE 2

Species	# observed	Condition Class 1 = alive 0 = dead	Notes (optional)
N. densiflorus var. densiflorus			
Pinus muricata			
Rubus spectabilis			
Polystichum californicum			
Arctostaphylos glandulosa			
Collinsia grandiflora			
bamboo			
Pinus radiata			
Tsuga heterophylla			
Taraxacum officinale			
Taraxacum erythrospermum			
Cirsium occidentale			
Solanum americanum			H. play Purpleish