Exhibit B-2

ENVIRONMENTAL CONSULTANTS

May 31, 2019

Donald Barrella, Planner III
County of Napa
Planning, Building, and Environmental Services
1195 Third Street, Suite 210
Napa, California 94559

RE: Response to Comments (Biology) – Darioush Estate, Curry Lane Vineyard Agricultural Erosion Control Plan Application File No. P18-00442-ECPA; 2100 Curry Lane, Napa, APN 045-380-010

Dear Mr. Barrella:

This letter provides a response to a request from Napa County for additional information/analysis regarding biological resources for the property located at 2100 Curry Lane (APN 045-380-010) in Napa County, California. The request for additional information is outlined in a letter from the Planning, Building, and Environmental Services Department, *Application Review Determination – Darioush Estate, Curry Lane Vineyard Agricultural Erosion Control Plan (ECPA) File #P18-00442-ECPA*.

The proposed project is the installation of three vineyard blocks on the property, totaling 8.88 gross acres (5.19 net acres). WRA analyzed the potential impacts to sensitive biological resources. The following addresses the County of Napa's follow-up requests for additional information.

Response to County Request

The following section directly addresses the comments from the County point-by-point (with text from the County in *italics*); the relevant page from the County's letter is included as Attachment C.

2. Supplemental Environmental Information...

a. Biological Resource Information…

i. Identify the anticipated number of trees, including species and diameter at breast height (dbh), of trees being removed from the areas identified as oak woodland.

> Two hundred seven trees will be removed from those areas mapped as oak woodland and non-native grassland. This includes three California buckeyes (*Aesculus californica*), three Pacific madrones (*Arbutus menziesii*), four Northern black walnuts (*Juglans hindsii*), four coast live oaks (*Quercus agrifolia*), and 193 blue oaks (*Q. douglasii*). Additionally, an

estimated eighty non-native European olives (*Olea europaea*) will be removed as part of the project. The number and sizes (DBH) of trees are included in Attachment A.

ii. Provide a targeted bat habitat assessment that identifies potential bat habitat trees located with the project area and parcel.

Background

Bats are typically considered during environmental review by Napa County and also protected by California Fish and Game Code, i.e., Sections 86, 2000, 2014, 3007, and 4150, along with Title 14 of California Code of Regulations.

Methods

A daytime roost survey assessed all trees and substrates within the proposed vineyard development to determine if bat roosting habitat was present. This survey was completed by walking the entire Project Area, and surveying each tree scheduled for removal or trimming. During the survey the biologist noted features or conditions that may be favorable or unfavorable for bat use such as thermal conditions, frequency of disturbance, and evidence of potential predators. All trees were also investigated for fissures, cracks, or hollows that could provide roosting substrate for bats.

Results

No bat roosting habitat was observed within the Project Area, nor were any bats. The Project Area is primarily comprised of grassland and burned out oak trees; none of the trees scheduled for removal contain features that might support bat roosting. Specifically, the subject trees lacked suitable cracks, fissures, and hollows, and none featured large sections of exfoliating bark. Additionally, many of the trees in the Project Area were relatively small in diameter, and therefore are not likely to support surface roosting bats as the trees do not contain the mass required for stable surface roosting.

No suitable bat roosting substrates were observed within the Project Area, nor was any indication of bat roosting. As such, in accordance with the condition, no additional avoidance measures are recommended.

iii. To adequately assess and disclose potential impacts to western pond turtles (WPT) and their habitat, provide an expanded discussion of potential nesting and refugia/dispersal habitat within the project area and parcel, including recommended buffers from identified habitat. Additionally, clarify the proximity of known occurrences of WPT: Figure A-3 shows it within a mile of the site and other locations within 3 miles, however Appendix C indicates it is located 5.9 miles from the site.

[And]

iv. Provide an expanded discussion of potential California red-legged frog and foothill yellow-legged frog nesting, refugia/dispersal habitat within the project area and parcel. Additionally, provide recommended buffers from identified habitats.

[These queries are addressed together in the following]:

Western Pond Turtle (WPT) Background

The Western pond turtle (WPT; *Emys marmorata*) is the only native freshwater turtle in California. This turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and Transverse Ranges. WPT inhabit perennial aquatic habitats, such as lakes, ponds, rivers, streams, and canals that provide submerged cover and suitable basking structures, such as rocks and logs. WPT prefer to nest on unshaded upland slopes close to their aquatic habitat (15 to 300 feet distant), and hatchlings require shallow water with relatively dense emergent and submergent vegetation for foraging for aquatic invertebrates (Rathbun et al. 1992, Thompson et al. 2016).

California Red-legged Frog (CRLF) Background

California red-legged frog (CRLF; *Rana draytonii*) was listed as Federally Threatened on May 23, 1996 (USFWS 1996). Critical Habitat for the CRLF was designated on April 13, 2006 (USFWS 2006), and the revised designation was finalized on March 17, 2010 (USFWS 2010). A Recovery Plan for the CRLF was published by the U.S. Fish and Wildlife Service (USFWS) on May 28, 2002.

CRLF is dependent on suitable aquatic and upland habitat. Specifically, there are four physical and biological features that are considered to be essential for the conservation or survival of the species. The features for the CRLF include: aquatic breeding habitat; non-breeding aquatic habitat; upland habitat; and dispersal habitat (USFWS 2010).

Aquatic breeding habitat consists of low-gradient fresh water bodies, including natural and manmade (e.g., stock) ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. It does not include deep-water habitat, such as lakes and reservoirs. Aquatic breeding habitat must hold water for a minimum of 20 weeks in most years. This is the average amount of time needed for egg, larvae, and tadpole development and metamorphosis so that juveniles can become capable of surviving in upland habitats (USFWS 2010).

Aquatic non-breeding habitat may or may not hold water long enough for CRLF to hatch and complete its aquatic life cycle, but it provides shelter, foraging, predator avoidance, and aquatic dispersal for juvenile and adult CRLF. These waterbodies include plunge pools within intermittent creeks; seeps; quiet water refugia during high water flows; and springs of sufficient flow to withstand the summer dry period. CRLF can use large cracks in the bottom of dried ponds as refugia to maintain moisture and avoid heat and solar exposure (Alvarez 2004). Non-breeding aquatic features enable CRLF to survive drought periods, and disperse to other aquatic breeding habitat (USFWS 2010).

Upland habitats include areas adjacent to aquatic and riparian habitat and are composed of grasslands, woodlands, and/or vegetation that provide shelter, forage, and predator avoidance. These upland features provide breeding, non-breeding, feeding, and sheltering habitat for juvenile and adult frogs (e.g., shelter, shade, moisture, cooler temperatures, a prey base, foraging opportunities, and areas for predator avoidance). Upland habitat can include structural features such as boulders, rocks, and organic debris (e.g., downed trees, logs), as well as small mammal burrows and moist leaf litter (USFWS 2010).

Dispersal habitat includes accessible upland or riparian habitats between occupied locations within 1 mile of each other that allow for movement between these sites.

Dispersal habitat includes various natural and altered habitats such as agricultural fields, which do not contain barriers to dispersal. Moderate to high-density urban or industrial developments, large reservoirs and heavily traveled roads without bridges or culverts are considered barriers to dispersal (USFWS 2010). Although California red-legged frog is highly aquatic, this species has been documented to make overland movements of several hundred meters and up to one mile during a winter-spring wet season in Northern California (Bulger et al. 2003, Fellers and Kleeman 2007) and 2,860 meters (1.8 miles) in the central California coast (Rathbun and Schneider 2001). Frogs traveling along watercourses can exceed these distances.

Breeding takes place from November through April (Storer 1925, USFWS 2002). Males usually appear at the breeding sites 2 to 4 weeks before females who are attracted to calling males. Females lay egg masses containing about 2,000 to 5,000 eggs, which hatch in 6 to 14 days, depending on water temperatures (USFWS 2002). Larvae metamorphose in 3.5 to 7 months, typically between July and September (Storer 1925, Wright and Wright 1949, USFWS 2002). Sexual maturity is usually attained by males at 2 years of age and females at 3 years of age.

Foothill Yellow-legged Frog (FYLF) Background

Foothill yellow-legged frog (FYLF; *Rana boylii*) is currently a candidate for listing (as threatened) under the California Endangered Species Act, and is a state Species of Special Concern; its natural history is summarized by Thomson et al. (2016) and more recently by Van Hattam and Mantor (2018). The species historically occurred from southern Oregon to Los Angeles County, but has declined in many parts of this range, particularly in central and southern California. FLYF occurs in a variety of lotic systems, and prefers shallow, flowing water with a rocky substrate. FYLF have an affinity for inundated streams and immediately surrounding habitats, generally use stream corridors for movement and are rarely observed far from water (typically less than ten feet). While FLYFs have been documented in upland habitats at greater distances from water, available data suggest that such usage is most associated with autumnal rains, higher stream flows and flood events (Bourque 2008, Gonsolin 2010, Cook et al. 2012). Breeding typically occurs in the spring; aquatic breeding sites are often near stream confluences, with egg masses typically deposited in low-flow areas (pool tail-outs, edges of runs, glides etc.) with cobble and/or gravel. Though some egg masses may be laid in areas with relatively closed canopies, the species prefers to deposit eggs in open areas where shade is reduced. Because the metabolic rates of eggs and larva are positively affected by solar radiation and the alga that tadpoles feed on is similarly affected by it, breeding and larval rearing sites tend to be (though not always) associated with sunnier portions of the habitat continuum (Kupferberg et al. 2009).

Objectives and Methods

The objective of this survey was to identify any areas within the Study Area that support WPT, CRLF, and FYLF, and to assess the capacity of the Study Area to support the various life stages of these species. Data on distribution, density, and habitat suitability were used to inform the development of measures to avoid and protect these species in the Study Area.

The Study Area consisted of Kruese Creek, a small unnamed stream that runs generally parallel to it, the eastern end of a man-made pond and areas 50 feet beyond their wetted perimeters. The majority of the man-made pond and an additional man-made pond (also created by an impoundment of Kruese Creek, but upstream) were not directly surveyed but are considered in this assessment for their capacity to support the target species.

A search of the California Natural Biodiversity Database was conducted prior to fieldwork to determine the nearest documented occurrence of the target species in relation to the Study Area. Aerial imagery was examined to help determine if any habitat features that could support these species were near the Study Area.

The data collection methodology implemented for these surveys generally followed the Visual Encounter Survey (VES) detection methodologies described in Peek et al. 2017, for surveying FYLF in lotic environments and the daytime VES surveys as described in the USFWS 2005 guidance for CRLF. For WPT, suitable areas were likewise scanned for sunning turtles in advance to entering them, as is typically done in WPT VES surveys. These methodologies are widely used for these species. The biologist followed industry standards for disinfection of equipment (boots, waders, etc.) to prevent the spread of disease to or from the Study Area.

WRA herpetologist Brian Freiermuth conducted the surveys. Mr. Freiermuth systematically walked upstream, zigzagging back and forth between the bank and the thalweg in wide areas and bank to bank in narrow areas, searching all areas that could support frogs and turtles. This included under and around natural cover such as rocks, ledges, woody debris, overhanging vegetation, etc. (both in and out of the water). Visible and accessible natural cover within 50 feet of the wetted perimeter was thoroughly investigated for the presence of frogs, turtles and potential WPT nesting sites. Surveys were conducted with the naked eye and assisted with binoculars and flashlights. During diurnal surveys, binoculars were used to scan areas where frogs were likely to be sitting along banks. Flashlights were used during the day to thoroughly search dark crevices and shaded areas. Slow moving or still waters were closely inspected for the presence of tadpoles. No handling of the target species is necessary using these techniques. For the subject streams, surveys were first conducted moving upstream, then the same stream was searched again as the surveyor moved downstream. This allowed for two passes per survey. The first survey included areas outside of wetted areas including under surface debris. The second survey only included areas determined to be suitable habitat for one of the target species as determined during the first survey and surface debris was not searched again. As such, the second survey did not include dry areas or additional disturbance of surface cover.

One daytime survey of the Study Area was conducted. The survey was conducted during conditions were ideal to detect FYLF and WPT. CRLF are most easily detected at night, though conditions to find diurnally active CRLF and their larva were suitable. Data was collected to provide a general description of the aquatic habitat in the Study Area and its capacity to support the various life stages of the target species, as well as photos of examples of habitat types present.

Results

California Natural Biodiversity Database search results indicated that there are no near-by (within three miles) documented occurrences of FYLF or CRLF in the vicinity of the Study Area. In fact, CRLF appears to be rare or absent in the lower Napa River watershed and the nearest occurrence for CRLF to the Study Area appears to be more than 5 miles south, outside of the Napa River watershed (CDFW 2019). Similarly, there are no documented FYLF occurrences for the lower Napa River watershed (CDFW 2019). The nearest occurrence for WPT is about 0.5 miles to the east of the Study Area and the species is relatively common in the vicinity of the Study Area, with several nearby occurrences.

On April 11, 2019, WRA Wildlife Biologists Brian Freiermuth conducted the surveys and a habitat assessment in the Study Area. Mr. Freiermuth has conducted similar surveys in which findings were positive in several California counties for all of the target species and is familiar with the identification of all the anuran and turtle species in the area, and their habitat affiliations. Relevant conditions during the surveys are provided in the table below.

Curry Lane	Start	End	Weather	Wind (mph)	Air temp (° F)
Survey 1	12:45 PM	2:30 PM	sunny	0-5	67-69

No target species in any life stage were observed during the surveys and habitat assessment.

The Study Area contains two primary intermittent drainages that both feed into a man-made pond located partially in the Study Area. These streams appear to flow out of another man-made pond upstream of the Study Area. It is likely that the smaller of the two streams (referred to as the northern tributary) flows only during the rainy season and immediately after even in wet years. The larger stream, Kreuse Creek, probably flows well into summer in most years but likely becomes intermittent by July or August. After flowing out of the man-made pond to the east of the Study Area, Kruese Creek flows into Tulucay Creek, which subsequently flows into the Napa River.

Both of the streams have a rocky substrate dominated by cobble and gravel prior to their discharge into a small anthropogenic pond that has connectivity to the larger previously discussed man-made pond. Kruese Creek has developed stream features typical of its gradient and setting, which include small glides, riffles, runs and pools. It is generally shallow, though some deep pools (greater than two feet) were present during the 2019 site visit. Several sections of the Creek are incised into the bedrock landscape, creating small gorges that are more shaded than the other sections of the Creek. In these gorges, water flows rapidly during high flow events and can be sluggish when discharges are low. It is likely that these small gorges retain water later into the year than areas upstream or downstream of them, except in the anthropogenic ponds. The larger of the two ponded areas is mostly outside of the subject parcel but may support the species discussed in this assessment. Emergent vegetation in the ponded areas is sparse, mostly occurring in the small ponded area at the base of Kruese Creek.

Canopy was sparse and in most cases, annual grassland occurs all the way to the top of bank. No emergent macrophytes are present in the Creek's pools and there are no backwaters. Where the creek flows through oak woodland, canopy cover is high. The areas adjacent to the streams and ponds are dominated by relatively open annual grasslands with little or no shrubs and occasional oaks.

Though not documented in the 2018 report, the presence of bass, bluegill and bullfrogs was documented during the 2019 site visit. It is assumed that these non-native predators/competitors are present throughout the aquatic features in the Study Area.

Assessment for WPT

The habitat within the Study Area is suitable for WPT and the species occurs in the vicinity of the Study Area. No WPT have been observed in the Study Area during WRA's site visits, but they may be present and/or move into the area. Potentially suitable nesting areas are present in the upland areas adjacent to the pond, particularly those areas with south-facing slopes. All of these areas are vegetated and exposed, but WPT may use such areas for nesting. Methods for avoiding WPT are discussed in the following section.

Assessment for CRLF

Due to the lack of documented occurrences in the lower Napa River watershed (CDFW 2019), it is likely that CRLF are naturally absent or extirpated from the Study Area and its vicinity. Whether this gap in distribution is due to extirpations or simply lack of detections is difficult to know, but the species has been listed for about 25 years and due to this, many surveys for the species have been conducted in the area since its listing. As such, this information gap suggests that the species is probably not present in the area rather than simply being present but undocumented. The presence of non-native predators (fish and bullfrogs) further reduce the probability that a population exists in or near the Study Area. Because it is not anticipated that CRLF would occur in the Study Area, no recommendations specific to CRLF are indicated here. However, measures to protect the aquatic natural resources in the Study Area, including avoidance of the streams and man-made ponds and working only in the dry season, would significantly reduce the probability of impacting CRLF if they occurred on the site.

Assessment for FYLF

In terms of its capacity to support FYLF, the Study Area contains habitat for all life stages in the wettest years. Metamorphosed FYLF could occur in the streams as long as water is present. However, in most years, it is likely that the shallow habitats where breeding and larval rearing would occur will go dry prior to the emergence of the larva. Additionally, the large man-made ponds that bracket Kruese Creek in the Study Area are likely to serve as an obstacle, though not an insurmountable barrier to dispersal from habitats upstream and downstream from the Study Area. More than the effects of the physical barrier that the ponds represent, the presence of bullfrogs and non-native fish (bass and bluegill documented during the 2019 site visit, though not documented in the original 2018 assessment) present frogs using the stream as a transit corridor with a gauntlet of predators that they did not evolve with. FYLF has also not been documented to occur in the immediate vicinity of the Project Area. However, this species has not had the scrutiny associated with listing at either the federal or state level and as such, should not be assumed to be absent entirely based on this gap in its distribution. Cumulatively, the marginal quality of the stream for larval FYLF, the presence of non-native predators, obstacles presented by the man-made ponds and the lack of occurrences of the species in the immediate vicinity make it unlikely that FYLF occur in the streams within the Study Area and dispersal into the Study Area is also unlikely. Furthermore, the species has been searched for on two occasions during times of the year that it would be likely to be detected if present. Given all these factors, it is unlikely that the proposed Project will negatively affect FYLF. The potential for impact is further reduced by the setbacks from the streams in the Study Area, which are at least 55 feet. As such, no further recommendations are made to specifically avoid effects on FYLF.

Recommendations

The aquatic features in the Study Area have potential to support WPT through much of the year, even though WPT has not been observed at the site, but may be present or could colonize the area. To avoid potentially significant impacts to WPT the following recommendations area made:

- The intermittent streams and ponds in the Study Area should be avoided by at least 50 feet by Project activities.
- A targeted preconstruction survey for WPT should be completed between 7 days and 24 hours of the start of construction. Surveys should take place between 9:00AM and 3:00PM and be conducted in areas that WPT are likely to inhabit and focus on detection of basking and foraging turtles. Surveyors will station in place for periods of 30 minutes in each area that is suitable for WPT and use binoculars to visually detect and identify WPT. If no turtles are detected during the preconstruction survey, no additional measures for WPT are recommended. If WPT is detected, the following measures should be implemented:
    - A worker environmental awareness program that describes WPT, its habitat affinities and its protections should be given to Project personnel prior to commencement of ground disturbing activities.
    - If any WPT are observed in the work area, the WPT will be avoided and work will stop within 50 feet of the WPT and will not resume until the WPT moves from the work area.
    - If ground disturbing activities are to occur during the WPT nesting season, between May 15 and July 15, an exclusion fence should be installed around the work area to prevent WPT from entering the work area. The design and installation of the fence should be verified by a qualified biologist.

If work stoppage occurs, work will cease and the applicant will contact a qualified biologist to determine further steps.

Conclusion

No FYLF, CRLF, or WPT were observed during the survey and habitat assessment. Due to the presence of non-native predatory fish and bullfrogs in the Study Area, the potential for all three of these species is reduced. CRLF in particular have difficulty surviving predation pressures from fish. FYLF are both eaten by bullfrogs and their tadpoles can be outcompeted by larval bullfrogs. Hatchling WPT are susceptible to predation by both bullfrogs and fish. However, WPT may occur on the site and measures to avoid them are included in the recommendations, immediately above this section.

Please contact us if you have questions or require additional information.

Sincerely,

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arthur@wra-ca.com

Brian Freiermuth, MS
Wildlife Biologist
freiermuth@wra-ca.com

Enclosures: Attachment A – Tree Survey Results
Attachment B – Photographs
Attachment C – References

Attachment A. Tree Survey Results

Species Code	Scientific Name	Common Name	DBH (inches)	Stems
Qudo	*Quercus douglasii*	blue oak	14	2 stem
Qudo	*Quercus douglasii*	blue oak	5	1 stem
Qudo	*Quercus douglasii*	blue oak	14.6	1 stem
Qudo	*Quercus douglasii*	blue oak	29	5 stem
Qudo	*Quercus douglasii*	blue oak	22	2 stem
Qudo	*Quercus douglasii*	blue oak	15	1 stem
Qudo	*Quercus douglasii*	blue oak	15.7	1 stem
Qudo	*Quercus douglasii*	blue oak	5	1 stem
Qudo	*Quercus douglasii*	blue oak	8.1	1 stem
Qudo	*Quercus douglasii*	blue oak	13.5	1 stem
Qudo	*Quercus douglasii*	blue oak	12.8	1 stem
Qudo	*Quercus douglasii*	blue oak	21	3 stem
Qudo	*Quercus douglasii*	blue oak	19.5	1 stem
Qudo	*Quercus douglasii*	blue oak	43	3 stem
Qudo	*Quercus douglasii*	blue oak	16.8	1 stem
Qudo	*Quercus douglasii*	blue oak	8.2	1 stem
Qudo	*Quercus douglasii*	blue oak	7	1 stem
Qudo	*Quercus douglasii*	blue oak	17.5	1 stem
Qudo	*Quercus douglasii*	blue oak	10.5	1 stem
Qudo	*Quercus douglasii*	blue oak	9.5	1 stem
Qudo	*Quercus douglasii*	blue oak	10.5	1 stem
Qudo	*Quercus douglasii*	blue oak	13.5	2 stem
Qudo	*Quercus douglasii*	blue oak	7	1 stem
Qudo	*Quercus douglasii*	blue oak	6.3	1 stem
Qudo	*Quercus douglasii*	blue oak	8.3	1 stem
Qudo	*Quercus douglasii*	blue oak	6.1	1 stem
Qudo	*Quercus douglasii*	blue oak	14	2 stem
Qudo	*Quercus douglasii*	blue oak	7.8	1 stem
Qudo	*Quercus douglasii*	blue oak	7.1	1 stem
Qudo	*Quercus douglasii*	blue oak	4	1 stem
Qudo	*Quercus douglasii*	blue oak	12	1 stem
Qudo	*Quercus douglasii*	blue oak	23.5	3 stem
Qudo	*Quercus douglasii*	blue oak	6.2	1 stem

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Qudo	*Quercus douglasii*	blue oak	10.2	1 stem
Qudo	*Quercus douglasii*	blue oak	17	2 stem
Qudo	*Quercus douglasii*	blue oak	2	1 stem
Qudo	*Quercus douglasii*	blue oak	12	2 stem
Qudo	*Quercus douglasii*	blue oak	9.7	1 stem
Qudo	*Quercus douglasii*	blue oak	12.1	1 stem
Qudo	*Quercus douglasii*	blue oak	7.9	1 stem
Qudo	*Quercus douglasii*	blue oak	13.4	2 stem
Qudo	*Quercus douglasii*	blue oak	26	2 stem
Qudo	*Quercus douglasii*	blue oak	4	1 stem
Qudo	*Quercus douglasii*	blue oak	12.4	1 stem
Qudo	*Quercus douglasii*	blue oak	4	1 stem
Qudo	*Quercus douglasii*	blue oak	13.5	1 stem
Qudo	*Quercus douglasii*	blue oak	13.5	2 stem
Qudo	*Quercus douglasii*	blue oak	9.5	1 stem
Qudo	*Quercus douglasii*	blue oak	35	4 stem
Qudo	*Quercus douglasii*	blue oak	10.4	1 stem
Qudo	*Quercus douglasii*	blue oak	3	1 stem
Qudo	*Quercus douglasii*	blue oak	9.1	1 stem
Qudo	*Quercus douglasii*	blue oak	13	2 stem
Qudo	*Quercus douglasii*	blue oak	8.8	1 stem
Qudo	*Quercus douglasii*	blue oak	11.5	1 stem
Qudo	*Quercus douglasii*	blue oak	10.7	1 stem
Qudo	*Quercus douglasii*	blue oak	11.9	1 stem
Qudo	*Quercus douglasii*	blue oak	17.5	2 stem
Qudo	*Quercus douglasii*	blue oak	15.5	1 stem
Qudo	*Quercus douglasii*	blue oak	13.5	1 stem
Qudo	*Quercus douglasii*	blue oak	7.7	1 stem
Qudo	*Quercus douglasii*	blue oak	14.3	2 stem
Qudo	*Quercus douglasii*	blue oak	7.6	1 stem
Qudo	*Quercus douglasii*	blue oak	14.8	2 stem
Qudo	*Quercus douglasii*	blue oak	10.2	1 stem
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Qudo	*Quercus douglasii*	blue oak	15.5	1 stem
Qudo	*Quercus douglasii*	blue oak	24.5	2 stem
Qudo	*Quercus douglasii*	blue oak	5.7	1 stem
Qudo	*Quercus douglasii*	blue oak	8.9	1 stem
Qudo	*Quercus douglasii*	blue oak	8.8	1 stem
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Qudo	*Quercus douglasii*	blue oak	10.1	1 stem
Qudo	*Quercus douglasii*	blue oak	5	1 stem
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Qudo	*Quercus douglasii*	blue oak	10.5	1 stem
Qudo	*Quercus douglasii*	blue oak	14.4	1 stem
Qudo	*Quercus douglasii*	blue oak	4.2	1 stem
Qudo	*Quercus douglasii*	blue oak	20.5	2 stem
Qudo	*Quercus douglasii*	blue oak	4.5	1 stem
Qudo	*Quercus douglasii*	blue oak	6.9	1 stem
Qudo	*Quercus douglasii*	blue oak	10.2	2 stem
Qudo	*Quercus douglasii*	blue oak	4	1 stem
Qudo	*Quercus douglasii*	blue oak	8.8	1 stem
Qudo	*Quercus douglasii*	blue oak	10.5	1 stem
Qudo	*Quercus douglasii*	blue oak	25	1 stem
Qudo	*Quercus douglasii*	blue oak	9.6	1 stem
Qudo	*Quercus douglasii*	blue oak	9.3	1 stem
Qudo	*Quercus douglasii*	blue oak	9.9	1 stem
Qudo	*Quercus douglasii*	blue oak	6.2	1 stem
Qudo	*Quercus douglasii*	blue oak	21	2 stem
Qudo	*Quercus douglasii*	blue oak	5.7	1 stem
Qudo	*Quercus douglasii*	blue oak	27.5	1 stem
Qudo	*Quercus douglasii*	blue oak	17.5	1 stem
Qudo	*Quercus douglasii*	blue oak	24.9	1 stem
Qudo	*Quercus douglasii*	blue oak	24.9	1 stem
Qudo	*Quercus douglasii*	blue oak	22.8	1 stem
Quag	*Quercus agrifolia*	coast live oak	2	1 stem
Qudo	*Quercus douglasii*	blue oak	10.4	1 stem
Aeca	*Aesculus californica*	California buckeye	15.1	1 stem

Species Code	Scientific Name	Common Name	DBH (inches)	Stems
Qudo	*Quercus douglasii*	blue oak	7.6	1 stem
Qudo	*Quercus douglasii*	blue oak	24.3	1 stem
Qudo	*Quercus douglasii*	blue oak	22.5	1 stem
Qudo	*Quercus douglasii*	blue oak	8.9	1 stem
Qudo	*Quercus douglasii*	blue oak	13.5	1 stem
Qudo	*Quercus douglasii*	blue oak	22.9	1 stem
Qudo	*Quercus douglasii*	blue oak	8.8	1 stem
Qudo	*Quercus douglasii*	blue oak	7.6	1 stem
Qudo	*Quercus douglasii*	blue oak	4	1 stem
Qudo	*Quercus douglasii*	blue oak	9.6	1 stem
Qudo	*Quercus douglasii*	blue oak	18.8	1 stem
Qudo	*Quercus douglasii*	blue oak	6.7	1 stem
Qudo	*Quercus douglasii*	blue oak	11.4	1 stem
Qudo	*Quercus douglasii*	blue oak	20	3 stem
Qudo	*Quercus douglasii*	blue oak	15.5	1 stem
Qudo	*Quercus douglasii*	blue oak	23.5	2 stem
Qudo	*Quercus douglasii*	blue oak	10.1	1 stem
Qudo	*Quercus douglasii*	blue oak	7.2	1 stem
Qudo	*Quercus douglasii*	blue oak	14	1 stem
Qudo	*Quercus douglasii*	blue oak	15.4	1 stem
Qudo	*Quercus douglasii*	blue oak	23.4	1 stem
Qudo	*Quercus douglasii*	blue oak	2	1 stem
Qudo	*Quercus douglasii*	blue oak	9.8	1 stem
Aeca	*Aesculus californica*	California buckeye	8.1	1 stem
Qudo	*Quercus douglasii*	blue oak	3	1 stem
Qudo	*Quercus douglasii*	blue oak	13.6	1 stem
Qudo	*Quercus douglasii*	blue oak	20.5	1 stem
Qudo	*Quercus douglasii*	blue oak	17.5	1 stem
Qudo	*Quercus douglasii*	blue oak	23	2 stem
Qudo	*Quercus douglasii*	blue oak	15.7	2 stem
Qudo	*Quercus douglasii*	blue oak	25.2	1 stem
Qudo	*Quercus douglasii*	blue oak	16.5	1 stem
Qudo	*Quercus douglasii*	blue oak	15.8	1 stem

Species Code	Scientific Name	Common Name	DBH (inches)	Stems
juhi	*Juglans hindsii*	Northern black walnut	43.5	1 stem
juhi	*Juglans hindsii*	Northern black walnut	22	1 stem
juhi	*Juglans hindsii*	Northern black walnut	16.8	1 stem
Qudo	*Quercus douglasii*	blue oak	17.5	1 stem
Qudo	*Quercus douglasii*	blue oak	17	1 stem
Qudo	*Quercus douglasii*	blue oak	18.4	1 stem
Qudo	*Quercus douglasii*	blue oak	16.1	1 stem
Qudo	*Quercus douglasii*	blue oak	19.2	2 stem
Qudo	*Quercus douglasii*	blue oak	10.8	1 stem
Qudo	*Quercus douglasii*	blue oak	11.9	1 stem
Qudo	*Quercus douglasii*	blue oak	6.2	1 stem
Qudo	*Quercus douglasii*	blue oak	18	2 stem
Qudo	*Quercus douglasii*	blue oak	17.3	2 stem
Qudo	*Quercus douglasii*	blue oak	19	2 stem
Qudo	*Quercus douglasii*	blue oak	13.4	1 stem
Qudo	*Quercus douglasii*	blue oak	10.8	1 stem
Qudo	*Quercus douglasii*	blue oak	13.1	1 stem
Qudo	*Quercus douglasii*	blue oak	8.5	1 stem
Qudo	*Quercus douglasii*	blue oak	7	1 stem
Qudo	*Quercus douglasii*	blue oak	9.6	1 stem
Qudo	*Quercus douglasii*	blue oak	12.3	1 stem
Aeca	*Aesculus californica*	California buckeye	31	2 stem
Qudo	*Quercus douglasii*	blue oak	6.9	1 stem
Qudo	*Quercus douglasii*	blue oak	8.4	1 stem
Qudo	*Quercus douglasii*	blue oak	6.8	1 stem
Qudo	*Quercus douglasii*	blue oak	10.5	1 stem
Qudo	*Quercus douglasii*	blue oak	6.2	1 stem
Qudo	*Quercus douglasii*	blue oak	9.8	1 stem
Juhi	*Juglans hindsii*	Northern black walnut	1	1 stem
Qudo	*Quercus douglasii*	blue oak	23.5	1 stem
Qudo	*Quercus douglasii*	blue oak	24.5	1 stem
Qudo	*Quercus douglasii*	blue oak	20.4	1 stem
Qudo	*Quercus douglasii*	blue oak	6.5	1 stem

Species Code	Scientific Name	Common Name	DBH (inches)	Stems
Arbmen	*Arbutus menziesii*	Pacific madrone	9	4 stem
Arbmen	*Arbutus menziesii*	Pacific madrone	7	3 stem
Arbmen	*Arbutus menziesii*	Pacific madrone	4.5	2 stem
Quag	*Quercus agrifolia*	coast live oak	8	2 stem
Qudo	*Quercus douglasii*	blue oak	14	2 stem
Quag	*Quercus agrifolia*	coast live oak	2	1 stem
Qudo	*Quercus douglasii*	blue oak	13.2	1 stem
Quag	*Quercus agrifolia*	coast live oak	7.5	2 stem
Qudo	*Quercus douglasii*	blue oak	21	1 stem

Downstream portion of Kruese Creek where it ponds and supports some emergent vegetation before entering the larger man-made pond. Photograph taken April 11, 2018.

One of the widest parts of Kruese Creek in the Study Area. Photograph taken April 11, 2019.

Southern small tributary in the Study Area. Photograph taken April 11, 2019.

Kruese Creek in the Study Area. Photograph taken April 11, 2019.

Image showing bedrock confined “gorge” in Kruese Creek during the site visit. Photograph taken April 11, 2011.

Pool in the Study Area with connectivity to the large man-made pond. Photograph taken April 11, 2018.

Attachment C. References

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