“K”

Canopy Retention Analysis

Ladera Vineyards Winery
Minor Modification P21-00294-MOD and Viewshed P22-00109
Planning Commission Hearing June 7, 2023

April 25, 2023

Emily Hedge, Planner III
County of Napa
Planning, Building, and Environmental Services
1195 Third Street, Suite 210
Napa, California 94559
emily.hedge@countyofnapa.org

Re: Ladera Vineyards Minor Modification– Response to Napa County comments on biological resources (File # P21-00294)

Emily:

This letter provides a response to a request from Napa County (County) for additional information/analysis regarding biological resources for the Ladera Vineyards property located at 3942 Silverado Trail (Study Area; APN 021-030-047-000) near Calistoga in unincorporated Napa County, California. The request is outlined in a letter from the County's Planning, Building, and Environmental Services Department, *Ladera Vineyards Minor Modification...Application Status Letter #,* dated April 29, 2022. The request was made in the context of previous letter reports by WRA, Inc. (WRA) respectively addressing on-site biological resources: 1) a bat habitat assessment (February 14, 2022) and 2) a canopy retention analysis (March 21, 2022). This letter is effectively an addendum to these reports.

Note: The number of trees proposed for removal within the Study Area has been slightly reduced relative to the context of WRA's March 2022 letter; this change is reflected in both the mapping and text herein.

Response to County Request

The section below directly addresses relevant comments from the County point-by-point (with text from the County in *italics*).

5. Biological Report

a. *The report notes that no bat habitat was found and that habitat is unlikely to develop in near future. The biologist should expand on the timing considered the "near future" and provide a timeframe in which a new study would be required. (p. 3)*

   Oaks are exceptionally dense trees and often require many years (on the order of decades) to form basal cavities. Trees typically must be afflicted with a fungus to soften or rot portions of the tree that can then develop cavities through other processes, e.g., excavation by animals or repeated fire damage. This combination of factors (fungus and

fire) accounts for why most basal cavities that support wildlife (including bats) occur in very mature or especially in dead standing trees (snags), as opposed to young live trees. Regardless of whether the subject tree is a snag (dead) or live tree, this process of formation requires many years. Features like exfoliating bark also typically require tree death and some level of decomposition before bark begins to fall off. As such it is unlikely that the trees would form potential cavities or habitat features (e.g., exfoliating bark) within the next five years unless for example, repeated fires occur in the area to accelerate the process of tree death and cavity formation/enlargement.

Conservation Division

The Vegetation Canopy Cover Retention Analysis (WRA, 2022) has been reviewed. Staff has the following comments and requests.

1. Pursuant to NCC Chapter 8.80.135 (Conservation regulations for fire-damaged properties and fire-damaged vineyards), the vegetation canopy cover analysis occurring on a fire-damaged property in the AW shall be based on the existing vegetation canopy cover as configured on the parcel existing on June 19, 2018. . . . Please revise accordingly. (p. 6)

For consistency, a revised land cover figure using a 2018 baseline aerial is included in Attachment A. As suggested in the full version of the County's comment, there are no notable differences in the extent of on-site canopy between the two aerials (2016 versus 2018) and thus WRA's mapping is unchanged.

2. While it is evident that the proposed project would be consistent with the 70% retention requirements of NCC 18.108.020(C), please revise the table and discussion for clarity. Vegetation canopy cover is defined as oak woodland, riparian oak woodland and coniferous forest. The table distinguishes between land cover and canopy; it is unclear what the difference is, and why there is a 0.3-acre difference in total, as well as the approximate 0.1-acre difference in proposed and total removal. (p. 6)

In WRA's original canopy assessment letter (March 21, 2022), native canopy within the Study Area was mapped using two methods. The first involved mapping vegetation communities/associations (termed land covers) that would be subject to the County's canopy preservation requirements specific to oak woodland and coniferous forest. In the case of the Study Area, these land covers are coast live oak woodland and Douglas fir forest. In addition to an overstory dominated by the subject trees, both on-site land covers feature developed vegetative understories, largely undisturbed substrates, and other characteristics to qualify as natural communities as per relevant literature and biological resource standards.

The second method, in contrast, mapped the total canopy of native trees within the Study Area (termed canopy). This includes approximately seven oak trees that while native, are currently within otherwise developed portions of the property, lack a vegetative understory typical of oak woodland, and are effectively isolated from intact stands of on-site oaks (see Figure 1, Attachment A). As such, these trees should not be considered to represent oak woodland. However, it was WRA's understanding that the County would potentially consider them as canopy and hence their proposed removal would factor into the 70 percent canopy retention requirement (NCC 18.108.020[C]).

The County subsequently provided clarification (via email on July 26, 2022) that the canopy retention analysis would not include the isolated oak trees (within the developed land cover), and that such would apply only to on-site coast live oak woodland and Douglas fir forest. Thus, in summary, 5.6 acres of combined oak woodland and coniferous forest were present within the property in 2018 (Figure 1, Attachment A). The previously cleared area (0.49 acre) and proposed tree removal (0.07 acre) in total constitute approximately 0.6 acre. The 3:1 preservation requirement is thus 1.8 acres; see additional details below. Additionally, in terms of canopy retention (not including developed areas), 0.6 acre of removal results in the retention of approximately 5.0 acre of canopy, or 89 percent. This total is well in excess of the required 70 percent.

3. NCC Chapter 18.108.020(D) requires that any vegetation canopy cover removed by the project and/or since baseline be mitigated at a 3:1 ratio by acreage. . . However, the same subsection of the code requires that the location of the permanent replacement or preservation be prioritized as listed, including 1) on-site on lands with slopes of 30% or less and outside of stream and wetland setbacks; and 2) if cannot be reasonably accomplished under (D)(1), on-site preservation may occur on slopes up to 50% that results in the highest biological and water quality protections. Please identify the proposed 3:1 mitigation preservation area per NCC Chapter 18.108.020(D). (pp. 6-7)

An area of oak woodland and Douglas fir forest proposed for preservation, overlain with both mapped land covers and percent slope on the property, is shown in Figure 2 (Attachment A). This preservation area has been identified in part via feedback from the County and constitutes the required 1.8 acres. The area is sited to specifically include the largest portion of the property where average slope is 30 percent or less and canopy is currently or was recently present. (There are no wetlands or streams within the Study Area, so avoidance of setbacks to such features are not relevant.)

The proposed preservation area includes the bulk of the approximately 0.5-acre cleared area which featured both Douglas fir forest and oak woodland. Although canopy was removed in this area (after 2018), the substrate was not meaningfully altered, and the area remains surrounded by existing forest/woodland. The area currently supports successional shrubbery, and native trees will presumably naturally recolonize the area over time if allowed to do so. The subject preservation area will feature relatively low perimeter-to-area ratio (reducing exposure of the interior to edges), resulting in one block that is directly contiguous with existing canopy on the property to the east.

It is WRA's understanding that this will be formally protected by a deed restriction or similar mechanism that is acceptable to the County. Formal protection should specify the ultimate preservation goal of supporting renewed canopy.

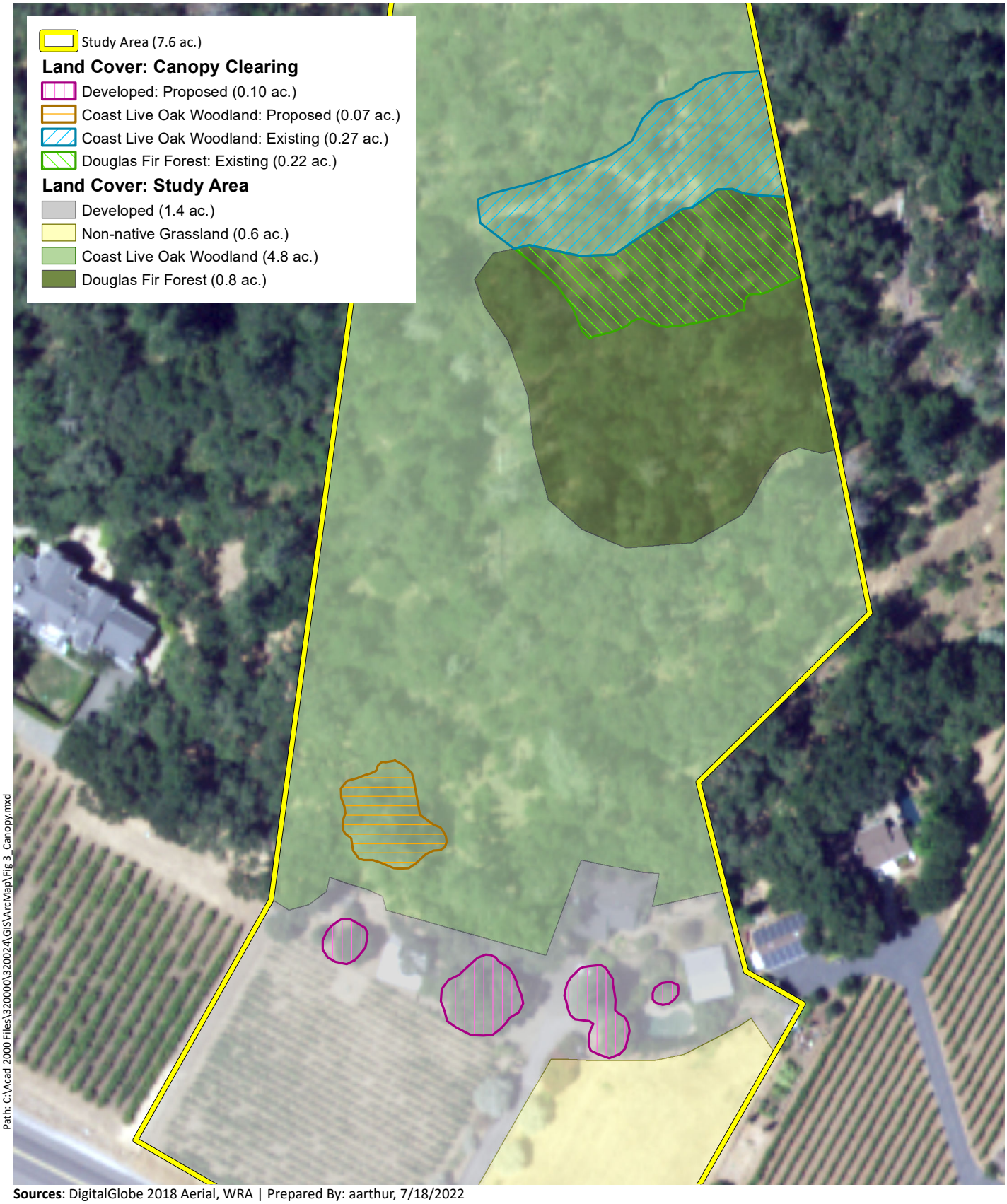
Please contact me if you have questions or require additional information.

Sincerely,

Jason Yakich
Senior Biologist
yakich@wra-ca.com

Enclosures: Attachment A – Figures

Ec: Chris Artley, Ladera Winery, LLC
Christina Nicholson, Sherwood Engineers



Sources: DigitalGlobe 2018 Aerial, WRA | Prepared By: aarthur, 7/18/2022

Figure 1. Land Cover

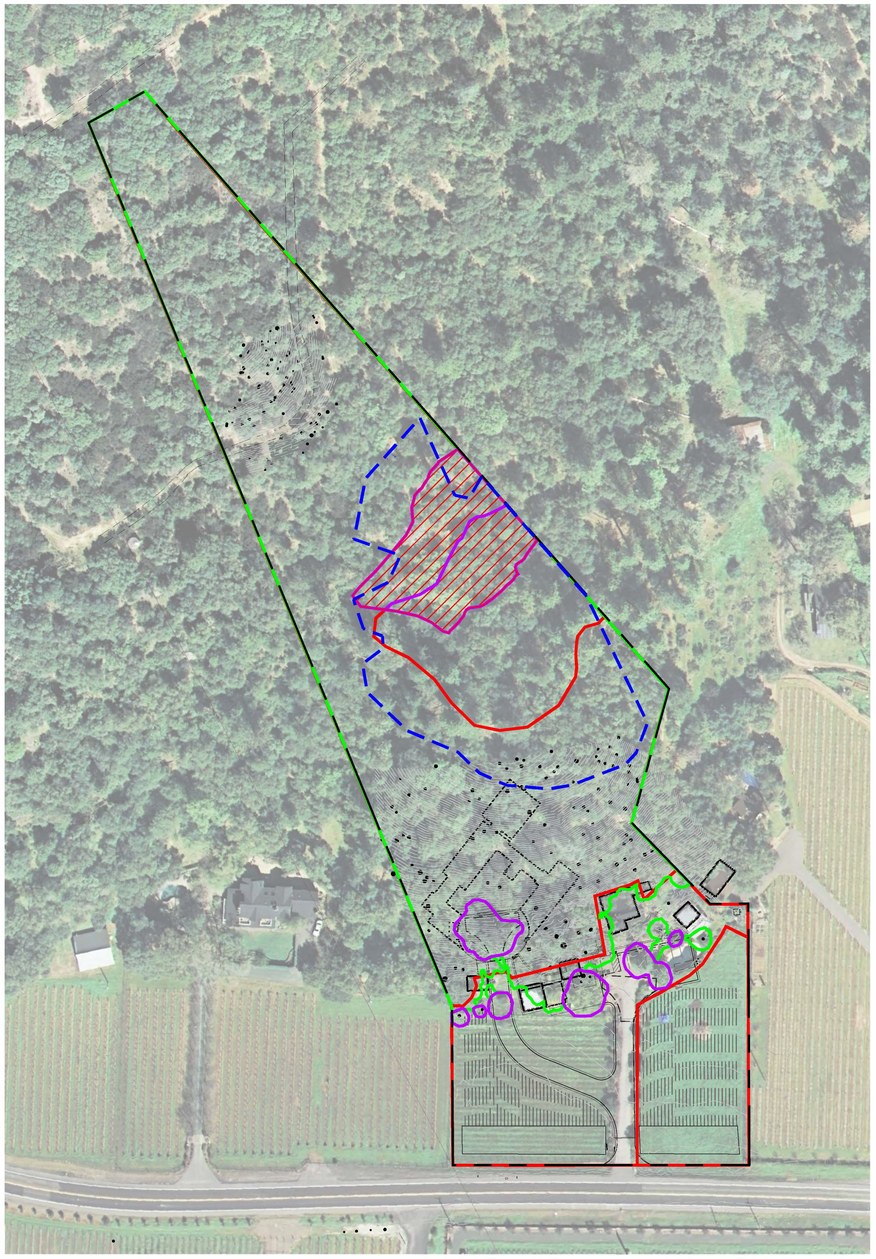
Ladera Property
Napa County, CA

0 50 100 Feet

N

wra

Figure 2. Canopy Preservation Area



TREE CANOPY & RETENTION AREA ANALYSIS

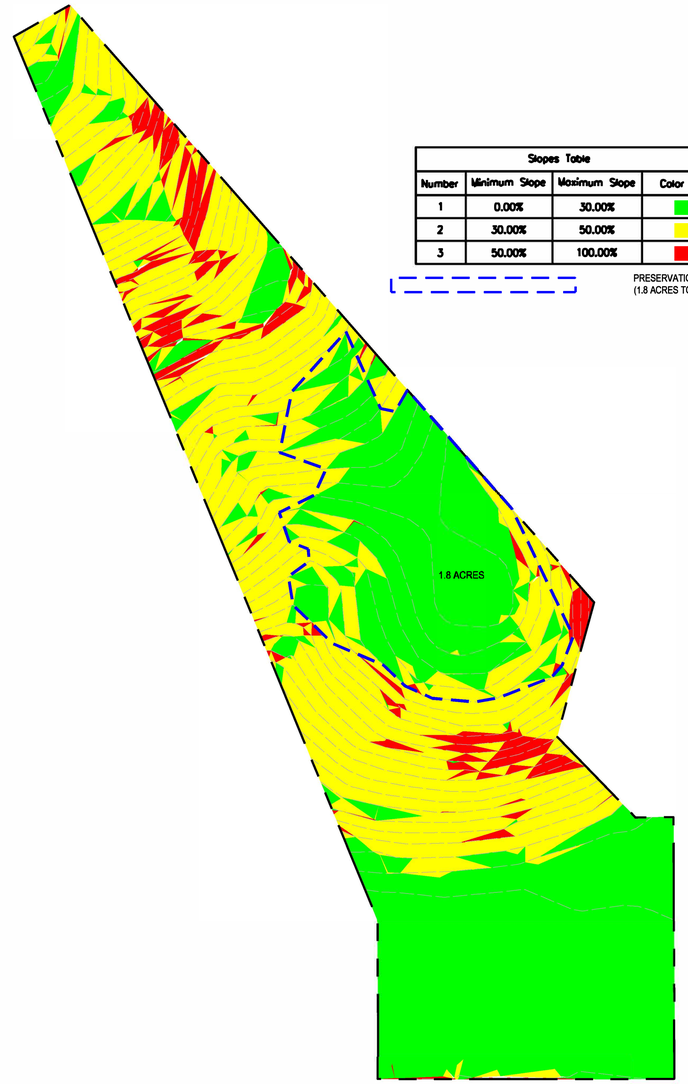
SCALE: 1" = 80'

NOTE:

THE TREE CANOPY COVERAGE SHOWN IS TAKEN FROM THE REPORT TITLED *CANOPY RETENTION ANALYSIS FOR LADERA WINERY, CALISTOGA, NAPA COUNTY, CALIIFORNIA* PREPARED MARCH 21, 2022 BY WRA ENVIRONMENTAL CONSULTANTS.

CANOPY COVER LEGEND

- LAND COVER IMPACTS
- CANOPY COVER
- LAND COVER
- PRESERVATION AREA (1.8 ACRES TOTAL)
- EXISTING CLEARED AREA (0.5 ACRES)



PRESERVATION AREA & SLOPE ANALYSIS

SCALE: 1" = 80'

NOTES:

1. THE TREE CANOPY RETENTION AREA SHOWN IS TAKEN FROM THE REPORT TITLED *CANOPY RETENTION ANALYSIS FOR LADERA WINERY, CALISTOGA, NAPA COUNTY, CALIIFORNIA* PREPARED MARCH 21, 2022 BY WRA ENVIRONMENTAL CONSULTANTS.
2. THE SLOPE ANALYSIS IS BASED ON NAPA COUNTY GIS CONTOUR DATA FOR THE SUBJECT PARCEL ACCESSED OCTOBER 12, 2021.

0 40' 80' 160' North

SHERWOOD DESIGN ENGINEERS
2548 Mission Street
San Francisco, CA 94110
www.sherwoodengineers.com

USE PERMIT MINOR MODIFICATION

PAT & ANNE STOTESBERY
LADERA VINEYARDS
3942 SILVERADO TRAIL
CALISTOGA, CA 94515

SCALE: 1" = 80'
0 1"
Note: If this graphic scale does not equal 1", it is sheet has been modified from its original size.

NO	DATE	REVISION
1	03/29/2022	PER UPMM COMMENTS
2	01/27/2023	FINAL UPMM SET
3	04/25/2023	CANOPY REVISION

PROJECT NO.	21-135
DATE	MARCH 2022
DRAWN	VHT
DESIGNED	VHT/CN
CHECKED	CN/DN

TREE CANOPY EXHIBIT

DRAWING NO.
C1.1
12 OF 22

March 21, 2022

Chris Artley
Ladera Winery, LLC
P.O. Box 313
St. Helena, CA 94574
chris@laderavineyards.com – *Sent via email*

Subject: Canopy retention analysis for Ladera Winery, Calistoga, Napa County, California

Mr. Artley:

This letter presents the findings of a canopy retention analysis for the Ladera Winery property (Study Area), located at 3942 Silverado Trail (APN 021-030-047) near Calistoga in Napa County, California (Figure 1, Attachment A). The property currently features an operational winery and vineyard. Because proposed on-site redevelopment (including winery expansion) will necessitate some tree removal, a canopy retention analysis for purposes of compliance with Napa County Code is warranted.

Background

Native tree canopy is subject to certain protections as per Chapter 18.108 of the Napa County Code of Ordinances; in 2019, existing protections were enhanced when the County Board of Supervisors adopted the Water Quality and Tree Protection Ordinance (No. 1438). For areas within the Agricultural Watershed zoning district (outside of sensitive water supply drainages), Chapter 18.108.020 subsections C and D were added that require a minimum of 70 percent canopy retention based on vegetation that existed within the parcel in 2016, and the preservation or mitigation of trees within oak woodland and/or coniferous forest land covers at a minimum 3:1 ratio.

Methods

Woodland/forest stands of native trees species within the Study Area were mapped by WRA plant biologist Jean-Paul Ponte on February 9, 2022. Vegetation communities were delineated based on distinct shifts in plant assemblage (vegetation), following the "California Natural Community List" (CDFW 2018)[1] and *A Manual of California Vegetation*, Online Edition (CNPS 2021).[2] Areas of proposal tree removal (including individual trees) were discerned using the "Existing Conditions & Conceptual Demolition Plan" project plan sheets and associated data by Sherwood Design Engineers (most recently revised March 11, 2022). Tree removal areas were then compared directly to aerial photography and

1 California Department of Fish and Wildlife(CDFW). 2018. California Natural Community List. Vegetation Classification and Mapping Program, California Department of Fish and Wildlife, Sacramento, CA. January 24.

2 California Native Plant Society (CNPS). 2020. A Manual of California Vegetation Online. Available at: http://vegetation.cnps.org/. Accessed: February 2022.

mapped land covers (parcel-wide), and the percentage of total canopy and relevant land covers to be retained was calculated.

Results and Discussion

Land covers and tree canopy within the Study Area as mapped by WRA, overlain with areas of proposed tree removal, are respectively shown in Figures 2 and 3 (Attachment A); calculations of land cover and canopy retention post-project are shown in Table 1. Two types of woodland/forest are present: woodland dominated by coast live oak (*Quercus agrifolia*) and forest dominated by Douglas fir (*Pseudotsuga menziesii*), comprising approximately 4.8 and 0.8 acres respectively in the context of 2016 conditions. An area of former woodland/forest (of both oaks and Douglas fir) approximately 0.5 acre in size appears to have been cleared following the 2020 Glass Fire. Not Including individual oak trees that are spatially isolated and were not mapped as a component of coast live oak woodland land cover, the total area of canopy within the Study Area is approximately 5.9 acres.

Table 1. Land Cover and Canopy Retention Within the Study Area

Analysis component	Total – oak and Douglas fir (ac.)	Cleared area (ac.)	Proposed removal (ac.)	Total removal (ac.)	Retained (ac.)	% retention
Land cover	5.6	0.49	0.07	0.6	5.0	**89**
Canopy	5.9	0.49	0.18	0.7	5.2	**88**

Assuming a conservative approach in which the aforementioned cleared area is included in the analysis, approximately 0.1 acre of mapped coast live oak woodland is proposed for removal to accommodate the project, resulting in approximately 0.6 acre of total impact and subsequent woodland/forest retention of 89 percent. For canopy, approximately 0.2 acre of oaks is proposed for removal, resulting in approximately 0.7 acre of total impact and canopy retention of 88 percent. In both cases, these retention ratios exceed respective County requirements of 75 percent (3:1 retention/mitigation ratio) and 70 percent.

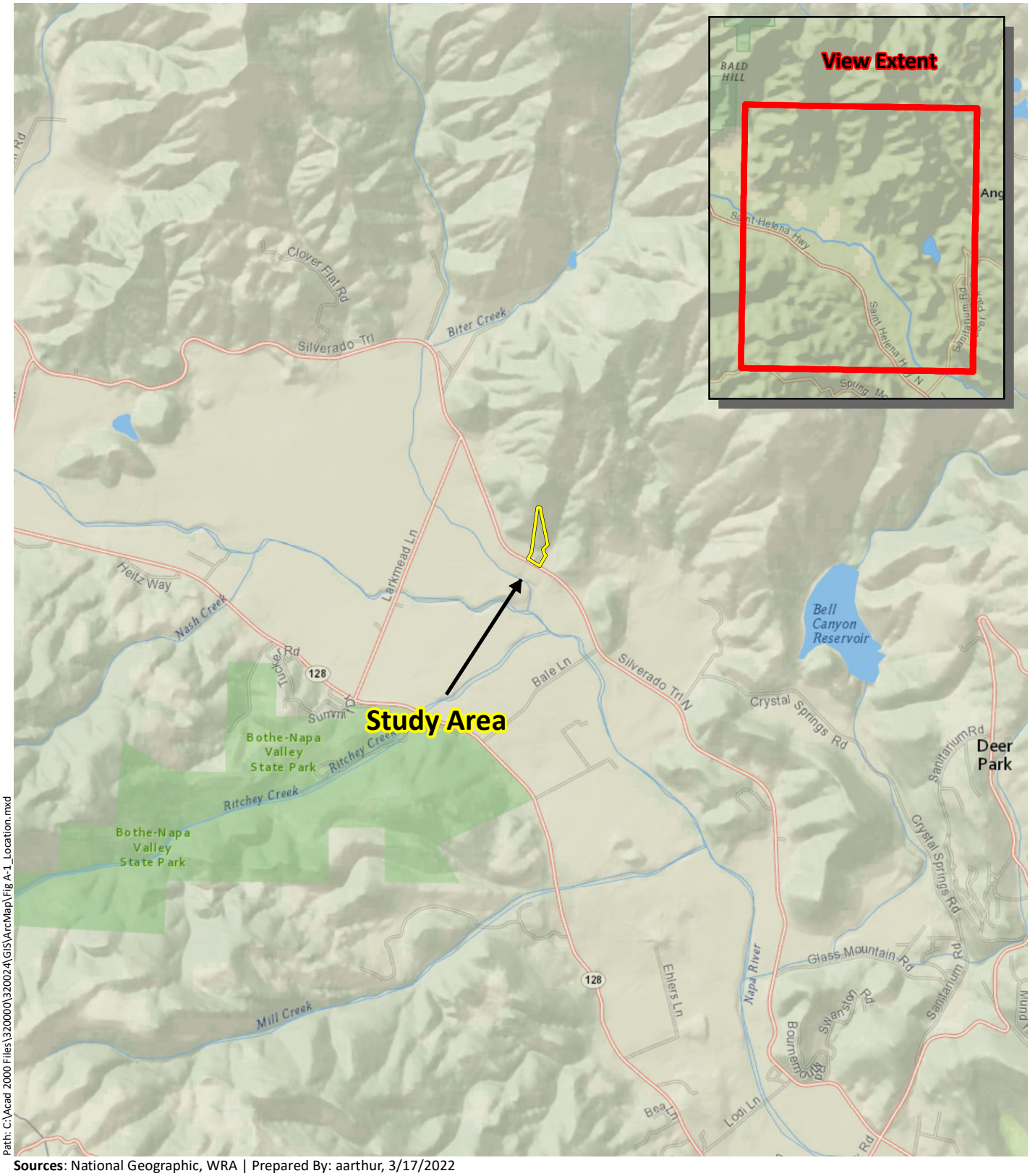
Please contact me if you have any questions.

Sincerely,

Jason Yakich
Senior Biologist
yakich@wra-ca.com

Enclosures: Attachment A – Figures

Ec: Christina Nicholson and Vincent Hart-Tinsley, Sherwood Engineers



Path: C:\Acad 2000 Files\320000\320024\GIS\ArcMap\Fig A-1_Location.mxd

Sources: National Geographic, WRA | Prepared By: aarthur, 3/17/2022

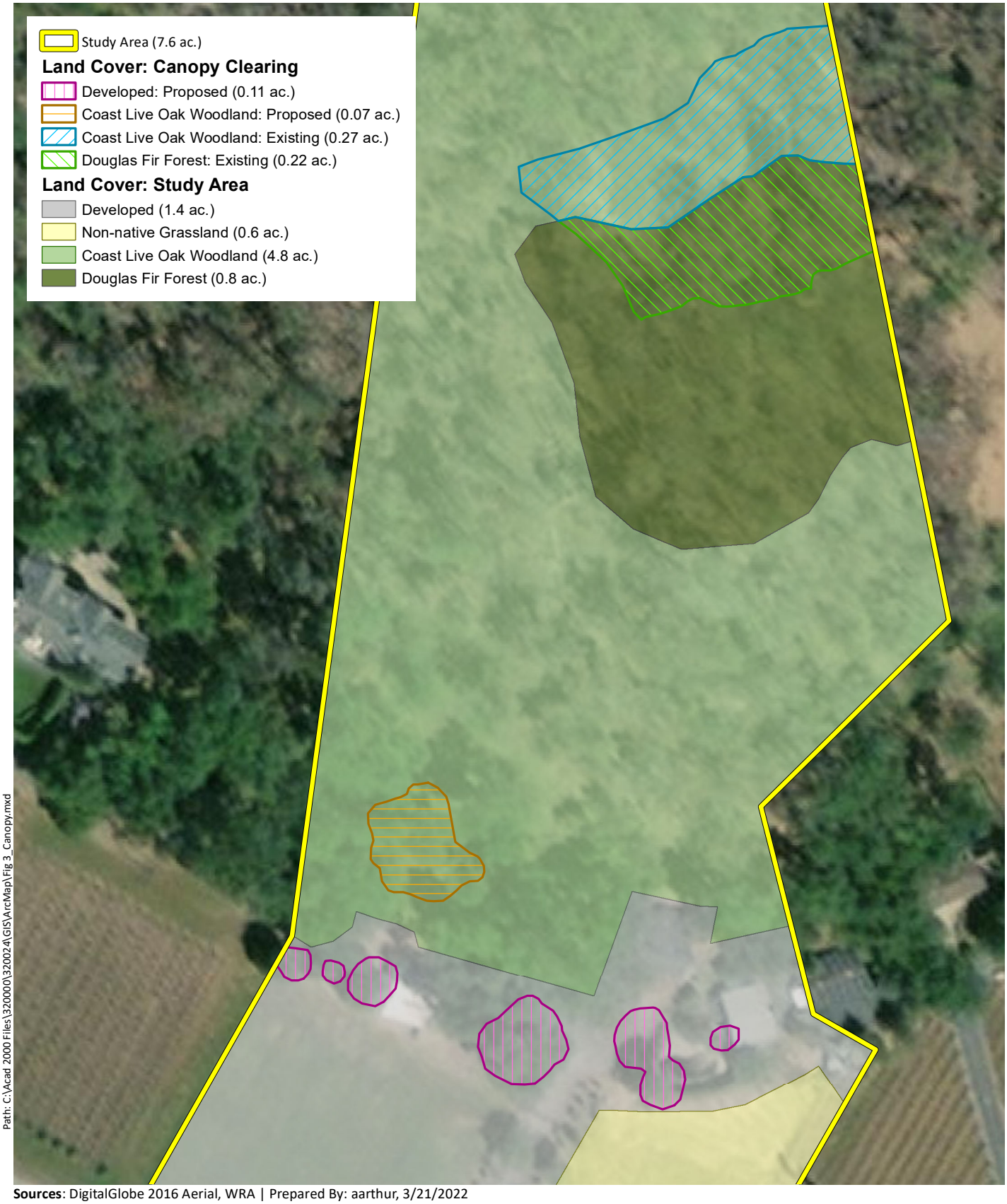
Figure 1. Project Location

Ladera Property
Napa County, CA

0 0.5 1 Miles

N

wra ENVIRONMENTAL CONSULTANTS



Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: aarthur, 3/21/2022

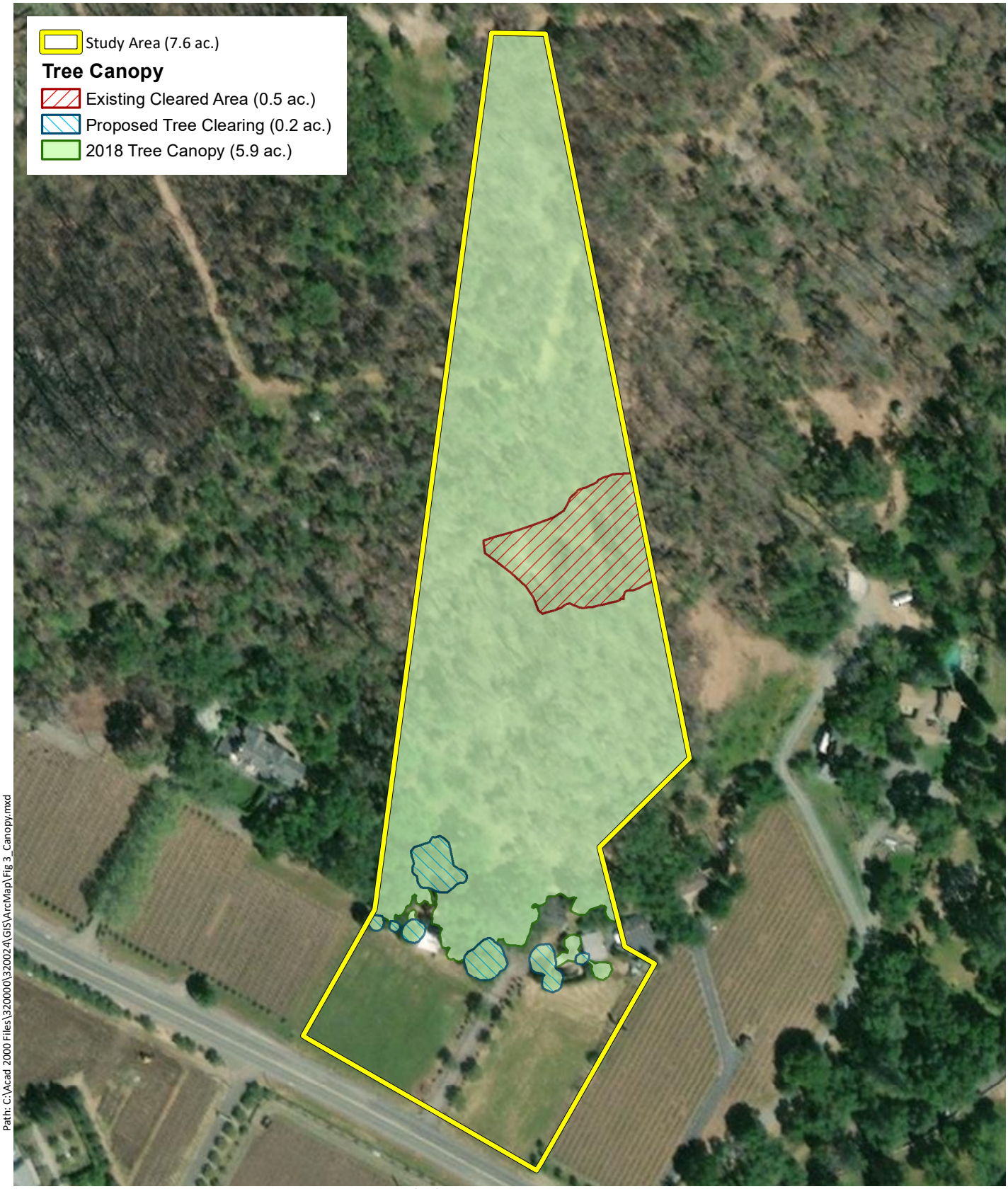
Figure 2. Land Cover

Ladera Property
Napa County, CA

0 50 100 Feet

N

wra
ENVIRONMENTAL CONSULTANTS



Sources: DigitalGlobe 2016 Aerial, WRA | Prepared By: aarthur, 3/21/2022

Figure 3. Canopy Cover

Ladera Property
Napa County, CA

0 50 100 Feet

N

wra ENVIRONMENTAL CONSULTANTS