

Environmental Justification for Onsite Relocation of Cannabis Cultivation

1250 WOOD RANCH ROAD, REDWAY, CA

APPS# 12312, APN 214-233-002

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RE: 1250 Wood Ranch Road, Redway, CA - APPS# 12312, APN: 214-233-002
**Environmental Justification for Proposed Onsite Relocation of
Cannabis Cultivation**
Applicant: Organic Humboldt, Inc.

1.0 Background & Purpose

Organic Humboldt, Inc. has applied for a permit for commercial cannabis cultivation under the first version of the Commercial Medical Marijuana Land Use Ordinance. 2014 was used as the basis year to determine cultivation square footage. OurEvolution Energy & Engineering (OE) personnel visited the site on several different occasions and some of the pre-existing cultivation areas were identified as environmentally inferior or non-compliant with existing regulations from the State Water Resources Control Board (SWRCB). In addition, several areas have been identified as environmentally superior on-parcel relocation or expansion areas for the project. The purpose of this report is to:

- Identify Relocation Donor Areas (RDA's) and document the environmentally inferior conditions at those locations observed by OurEvolution Energy & Engineering.
- Identify Relocation Receiving Areas (RRA's) on the parcel and document the environmentally superior conditions of those areas. These RRA's come in a variety of forms:
 - Pre-existing in basis year with proposed expansion or infill,
 - pre-2016 areas that did not exist in the 2014 basis year, and
 - new proposed locations.
- Provide additional details regarding the context of existing and proposed cultivation square footages, and remediation requirements.

2.0 Executive Summary & Table

(See Section 3.0 Methodology for additional information on how relocations were considered, the following sections with the site-specific breakdowns, and the mapping section for locations of named sub-areas addressed in this document.) OE concludes that the sub-areas identified as CA#2, CA#6, CA#8, CA#10, CA#15, and CA #16 merit total or partial onsite relocation (totaling approximately 23,616 SF) on the basis of environmental considerations. Cultivation from these Relocation Donor Area (RDA) locations will be relocated and distributed to the Relocation Receiving Areas (RRA's) CA#1, CA#9, GH#27/28, and AREA#S. Of these four proposed RRA locations, only GH#27/28 and AREA#S represent significant post-2016 development of novel areas. Increases to cultivation area on CA#9 will be accomplished by modest infill within the existing footprint. CA#1 involves reuse of the 2015 footprint with up to approximately 25% extension from the existing cultivation boundary area. No grading is proposed at any of the relocation sites with only hand shovel work as required to place and stabilize full-sun outdoor cultivation pots. Any additional apparent changes in cultivation sub-area square footages

documented in the table below and the site-specific breakdowns are either administrative in nature or within error on square footage estimates unless explicitly stated otherwise.

Table 1: Summary table of existing and proposed square footages broken down into named cultivation sub-areas. Further discussion of each of these areas can be found in the site specific sections of this report.

CAV Cultivation Area # / Name	EXISTING (SF)			PROPOSED (SF)			CHANGE (SF)	IMPACT (Reduction/remediation = green, neutral=blue, Expansion = orange)
	Full sun	GH	Total SF	Outdoor	ML	Total		
CA #1	0	2500	2500	14820	443	15263	12,763	Proposed Expansion
CA #2	4000	5300	9300	650	4800	5450	(3,850)	Administrative Reduction
CA #3	0	1450	1450	1950	0	1950	500	No change compared to 2015 areas / Administrative Expansion
CA #4	0	300	300	0	0	0	(300)	Converted to Nursery Space
CA #5	1300	0	1300	0	0	0	N/A	N/A, Off-parcel cultivation misidentified in CAV
CA #6	3200	1250	4450	0	0	0	(4,450)	Relocation & Remediation
CA #7	6291	8260	14551	3223	11407	14630	79	No change, 0.5% change (within error)
CA #8	600	3374	3974	0	0	0	(3,974)	Relocation & Remediation
CA #9	1868	2824	4692	6992	0	6992	2,300	Expansion (Within existing footprint via infill)
CA #10	896	3980	4876	0	0	0	(4,876)	Relocation & Remediation
CA #11	0	2426	2426	2426	0	2426	0	No change
CA #12	2087	3604	5691	5691	0	5691	0	No change
CA #13	0	850	850	850	0	850	0	No change
CA #14	526	1310	1836	1872	0	1872	36	No change, 1.9% (within error)
CA #15	437	2926	3363	0	0	0	(3,363)	Relocation & Remediation
CA #16	2973	0	2973	0	0	0	(2,973)	Relocation & Remediation
GH #26/27	n/a	n/a	0	0	5350	5350	5,350	Proposed Expansion
AREA #S	n/a	n/a	0	2758	0	2758	2,758	Proposed Expansion
Totals	24178	40354	64532	41232	22000	63232	0	

3.0 Methodology

To establish the basis year for the limits of total site-wide cultivation square footage, 2014 was used as the basis year in the county cultivation area verification (CAV) and in the CAV Response Memo prepared by OE. This year was chosen for consistency with the County's original methodology and imagery availability. However, to evaluate the actual environmental impacts of proposed on-parcel cultivation sub-areas as contained in this document, OE has allowed a relaxation of basis year to include 2014 *and* 2015. OE believes this provides a more accurate way to compare actual environmental impacts of the existing vs. proposed operations while maintaining the intent of the County Ordinance which was to limit environmental impacts of cannabis operations to those existing before January 1st, 2016. In particular, changes to sub-sites may have been made after 2014 but prior to the beginning of the application process with Humboldt County.

In OE's CAV Response Memo, the goal was to replicate the original county methodology and apply it to several areas that were not originally recognized as cultivation by the County CAV. OE opted not to challenge the methodology itself and so cultivation square footages that were identified by the County CAV were not corrected. In the interest of arriving at a fair final cultivation square footage authorization, OE attempted to replicate County methodology which consisted of aerial square footage assessments with tight boundaries around cultivation canopy areas. This methodology represents the best available way of assessing pre-2016 cultivation square-footage. This methodology, however, is fundamentally error-prone due to the nature of orthographic projection of oblique-angle images of a curved surface. It has been assumed that these errors are not systematic and errors will have a tendency to cancel out. The point of the discussion in this paragraph is that, in order to provide a more accurate representation of on-site operations wherever possible, OE utilized field-verified measurements for the creation of the proposed operation County Site Plan and the production of *this* document but *not* in the CAV nor CAV Response Memo. That means that some areas were identified with *apparent* differences between pre-2016 and proposed cultivation square footage, but these areas do not represent *actual* differences in square footage of operations to best of OE's knowledge. However, these areas were not corrected in the CAV Response Memo in the interest of applying a consistent standard across the site to arrive at a fair total pre-existing cultivation square footage value. OE has designated these sub-areas with *apparent* differences as "Administrative" reductions/expansions in the table in the executive summary above and in the site-specific descriptions below.

Cultivation areas classified as mixed light on the site have much in common with outdoor cultivation via both greenhouse and full-sun methods. The mixed-light areas do not utilize supplemental lighting and instead use light deprivation techniques. Therefore, in consideration of environmental impacts to the site as a whole, as well as individual sub-areas, cultivation type was not considered. Instead, mixed light and outdoor cultivation square footage was aggregated into a single square footage figure for each cultivation sub-area.

Impacts to the site and sub-area do not scale linearly with square footage. In particular, wetland areas and riparian areas often demand additional protection from both a regulatory and environmental standpoint. The following is a partial list of the primary impacts considered in approximate order of priority:

- Immediate or impending threats to watercourses/watercourse diversion

- Proximity to or conversion of wetlands/pseudo-wetlands, proximity to riparian areas, and proximity to other environmentally sensitive areas or habitat
- Grading, cultivation area slopes, related runoff, & drainage
- Additional road use, human activity, & cultivation square footage

OE's has made recommendations for possible remediation measures which can be found in the site-specific sections of this document. However, OE suggests that these recommendations be elaborated on and supplanted by the future Site Management Plan required for compliance with the SWRCB regulations.

4.0 Mapping

For consistency, cultivation areas have been named in this document using the same conventions used in the County's Cultivation Area Verification document as well as OE's CAV Response Memo. Some new areas are identified by the name used in the revised cultivation site plan. All named areas used in this document appear in the mapping below.

[See mapping on next page]

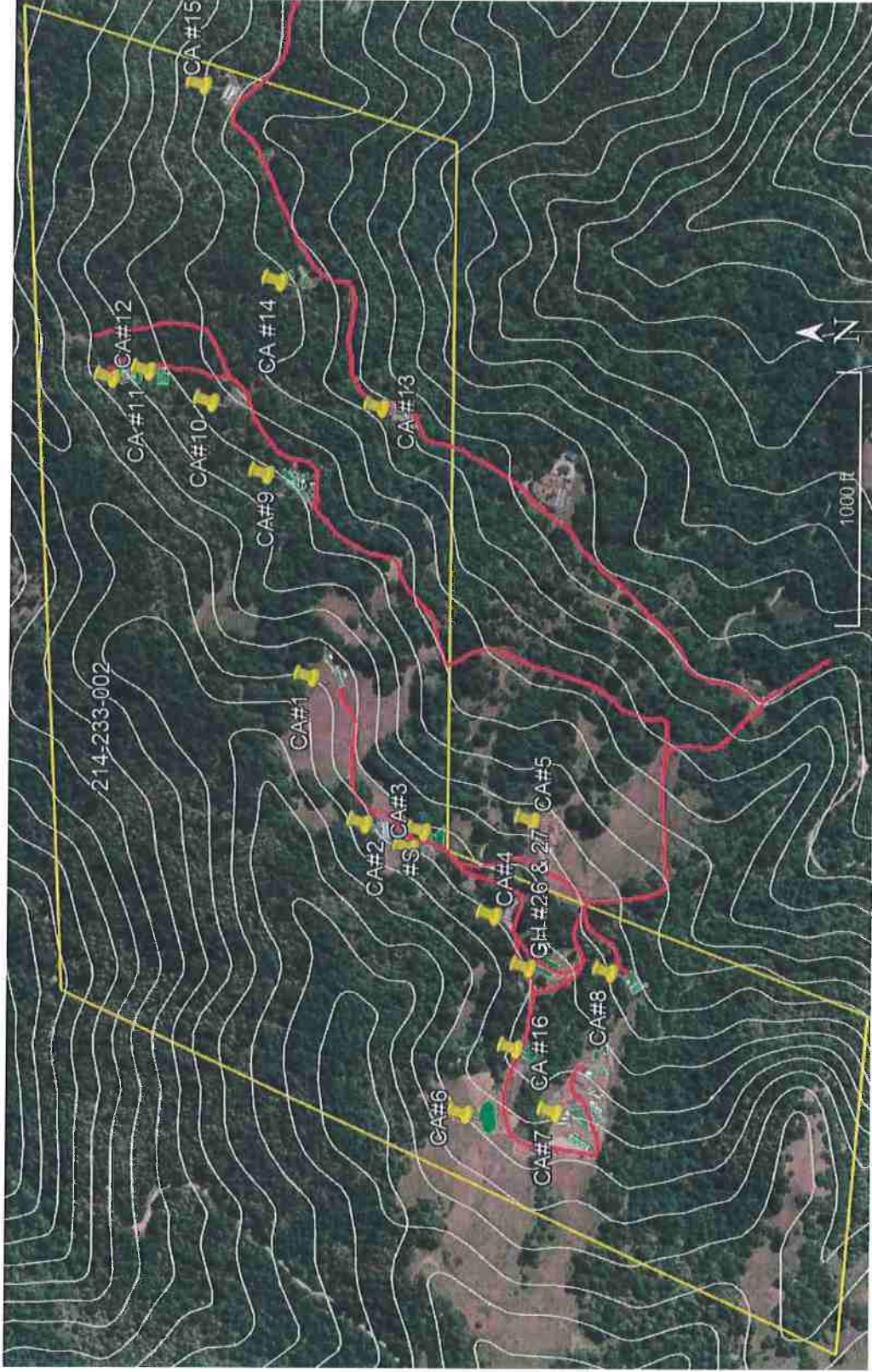


Figure 1: Parcel overview showing locations of named cultivation areas

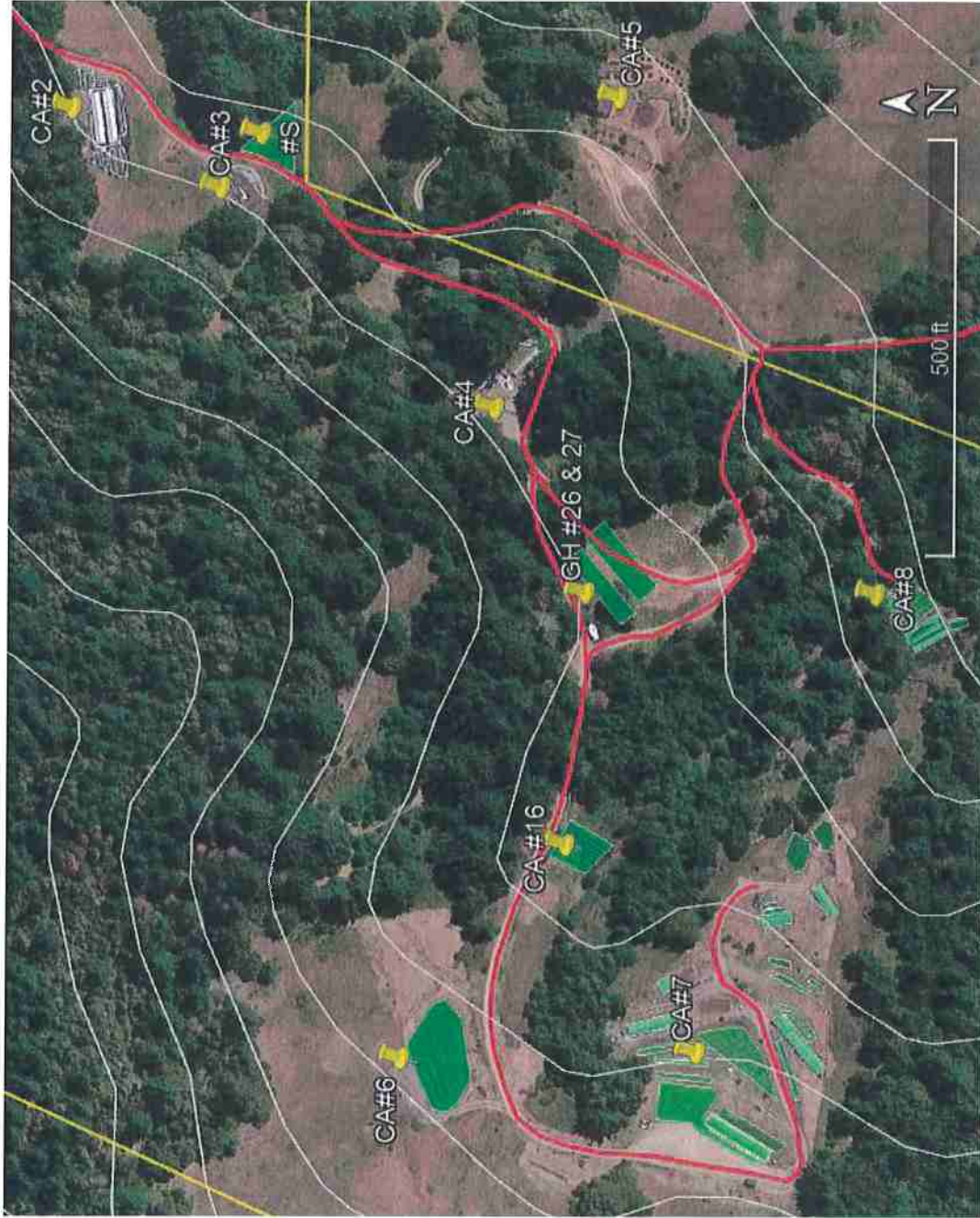


Figure 2: Detail view "Near Garden" Areas Identified on revised County Site Plan

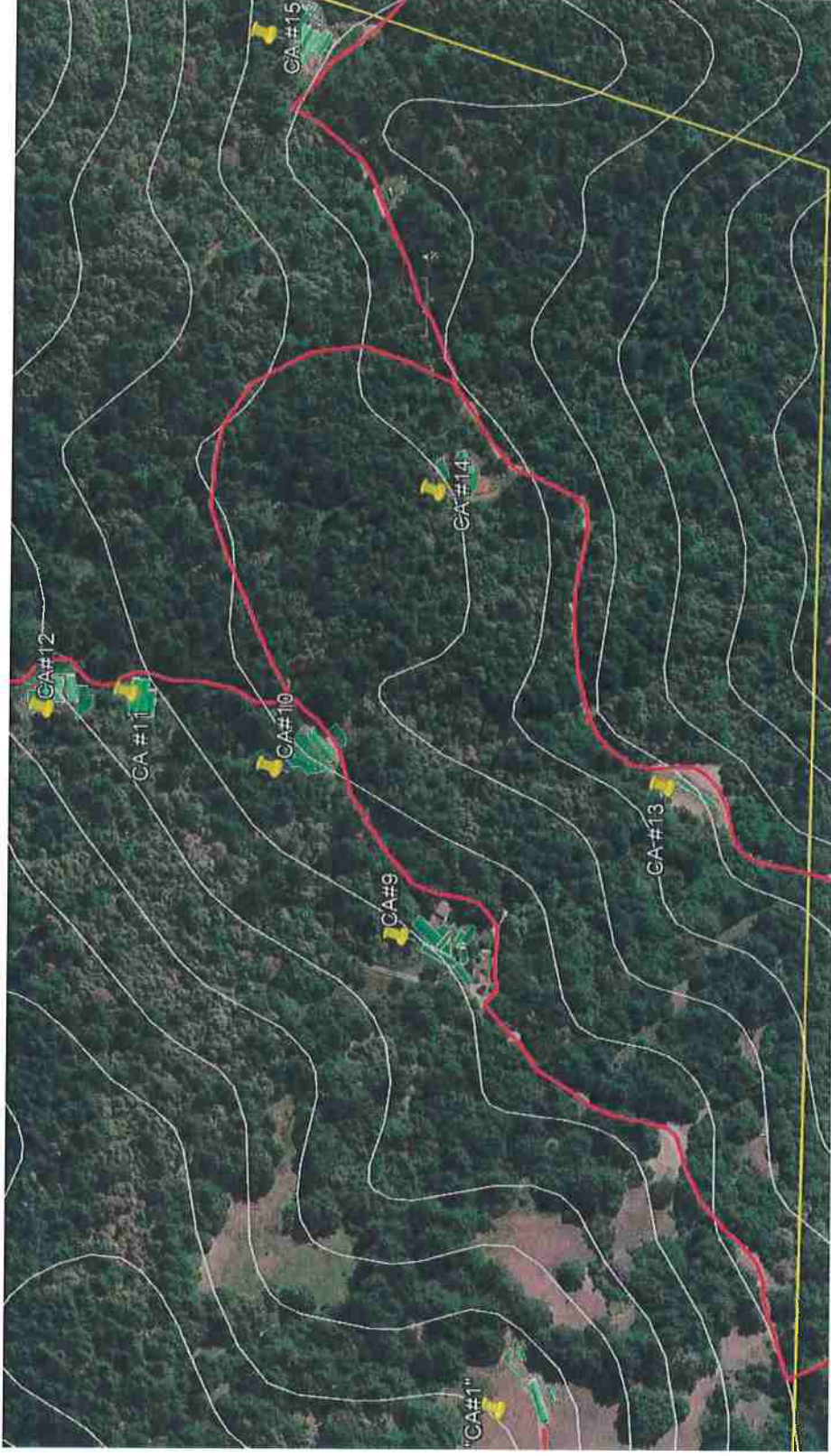


Figure 3: Detail area, "Far Garden" as identified in revised county site plan.

5.0 Relocation Donor Areas

5.1 Relocation Donor Area: "CA#6"



Figure 4: CA#6 in very close proximity to a stream which may have been partially diverted by grading activities. Image date 5/29/2014.



Figure 5: CA#6 view looking Northeast showing pots which require removal and revegetation of native grasses on the flat itself. Note potential drainage issues with water collecting alongside the uphill side of the graded flat.

CA#6 was created by grading a small bench into the hillslope. The graded flat is approximately 39 feet wide by 83 feet long and appears to extend right into the bank of an existing class III

stream, approximately 150 feet from its origin. An SWRCB required 50-foot buffer to the top of bank of the stream would essentially cover the entirety of the cultivation area. In addition, it has impacted the natural flow of drainage and delivers concentrated flow into the inboard road ditch below the site. Due to the encroachment of the graded flat into the banks of the stream, OE believes a high priority should be placed in discontinuing cultivation at this site, and in fact the owner has voluntarily ceased cultivation on this site since 2016.

Per the county CAV document, this area was the site of 3,200 ft² of outdoor cultivation and 1,250 ft² of mixed light cultivation. OE recommends total relocation of all cultivation square footage from this location. A detailed discussion of the proposed relocation receiving area(s) can be found in Section 6.0 of this report.

CA#6 Remediation Recommendations

OE recommends that the site be subject to remediation including removal of all cultivation related supplies and man-made materials. Since the site has revegetated well with native grasses matching the nearby vegetation, OE recommends against extensive regrading, but suggests that modest grading may be required as part of the Site Management Plan to ensure integrity of the class III stream banks, and to help aid in dispersal of drainage onto the hillslope below rather than concentrated and delivered onto the road below. OE also recommends that CDFW be contacted as part of the LSA Notification process to highlight the issues and weigh the options of leaving the existing drainage which is concentrating and channelizing (creating potential habitat) versus regrading for dispersal into the hillslope below.

5.1 Relocation Donor Area: "CA#8"



Figure 6: CA#8. Note the class II stream to the Southwest and unclassified stream to the Northeast. The approximate top of bank for the Southwest stream is shown in yellow. Note the close proximity to the two streams. Image date: 5/29/2014

CA#8 is located between two class II streams on what appears to be a natural bench with minimal grading. The entirety of this cultivation area falls within the SWRCB 100-foot riparian buffers of both streams.. In addition, the greenhouses and cultivation beds to the southwest are located immediately adjacent to the top of bank pictured in yellow in Figure 6 above with ground level view shown in Figure 7 below.



Figure 7: CA#8 View from SE corner looking westward. Note the legacy greenhouse immediately adjacent to top of bank of the Southern Class II watercourse.

OE concludes that the extreme proximity to nearby watercourses eliminates the potential for ongoing cultivation at CA#8 from both a regulatory and environmental standpoint. OE does not see the potential for any form of mitigation of the potential hazards in this location therefore all cultivation on CA#8 should be subject to relocation. Per the county CAV document, this area was the site of 600 ft² of outdoor cultivation and 3,374 ft² of mixed light cultivation. A detailed discussion of the proposed relocation receiving area can be found in Section 6.0 of this report.

CA#8 Remediation Recommendations

OE recommends that remediation of this site proceed according to documentation in the WRPP (See Water Resource Protection Plan (WRPP): “Legacy Cultivation Area #3” and the subject property LSA Notification Additional Pages: “Stream Crossing 9” for additional details). The stream crossing on the road leading to this flat has failed and the Lake and Streambed Alteration Notification calls for its removal. The WRPP calls for removal of all cultivation soil and supplies, and revegetation of any exposed earth near the site. In addition, the road leading out to the site should be blocked off and abandoned with no further remediation recommended due to a lack of erosive issues. OE does not believe the site would benefit from any regrading or changes to the existing site topography.

5.2 Relocation Donor Area: “CA#10”



Figure 8: Cultivation area CA#10 aerial view. Image date: 5/29/2014

CA#10 is located in a relatively flat (5-10% slope) clearing and does not appear to have been the site of legacy grading. However, it appears to have standing water and several hydrophilic plant species growing in the vicinity and the owner states that it stays wet for much of the growing season. While a formal wetland delineation was not performed at this location, OE believes that most of the site would meet the criteria to qualify as a wetland. Figure 9, below shows the ground level view with some of the standing water and plant-life pictured.

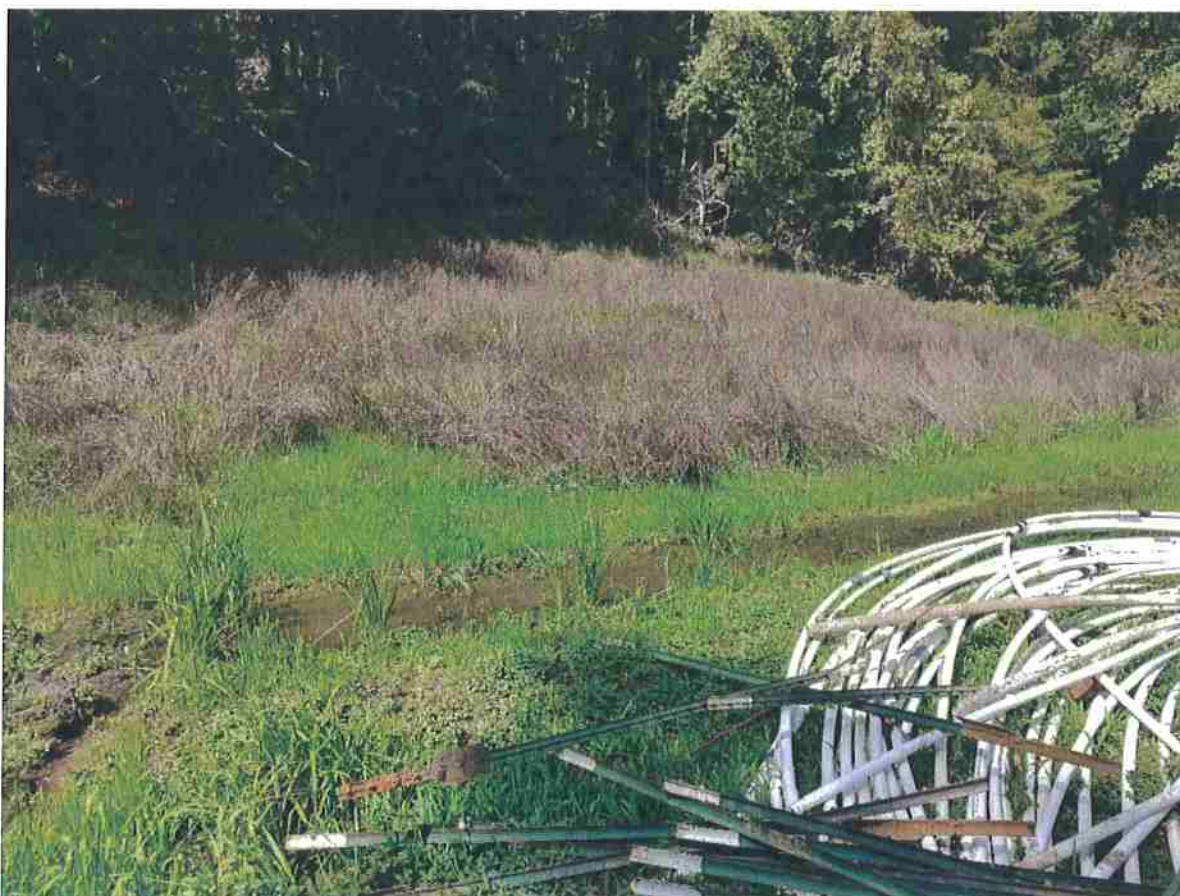


Figure 9: CA#10 showing standing water and hydrophilic plant species.

Per OE's CAV Response memo, this cultivation area was home to approximately 896 ft² of full-sun and 3,980 ft² of greenhouse cultivation for a total cultivation footprint of 4,876 ft². OE recommends total relocation of all cultivation square footage from this location in the interest of protection of the sensitive wetland environment. A detailed discussion of the proposed relocation receiving area can be found in Section 6.0 of this report.

CA#10 Remediation Recommendations

Little remediation is required at this site other than ceasing cultivation and removal of all cultivation materials and supplies. The owner has already voluntarily ceased cultivation at this site since 2016 and has begun the process of dismantling and removing the greenhouses that were present. There does not appear to be any remaining cultivation soil. Removal of the remaining construction materials should be sufficient to essentially restore the site to native conditions.

5.3 Relocation Donor Area: “CA#15”



Figure 10: Aerial view of CA#15 as it appeared in 5/29/2014. Note class III stream origin toward the West of the clearing.

CA#15 consists of an approximately 115-ft by 65-ft clearing which was made on a natural flat. No grading appears to have occurred in the development of this site. The origin of a class III stream channel begins on the West side of the clearing. In addition, there are hydrophilic plants growing above the channel origin. While neither a wetland classification nor delineation were performed, OE concludes that the required 50' setback to the stream channel alone would eliminate approximately half of the cultivation area and drainage from the site may still run in the direction of the stream channel.

Per OE's CAV Response Memo, this area was the site of approximately 437 ft² of outdoor cultivation and 2,926 ft² of greenhouse cultivation for a total cultivation footprint of 3,363 ft². While a wetland delineation may confirm that a portion of the site could be used for cultivation, due to the proximity to the class III stream channel and possible wetland areas, OE concludes that there are more environmentally sound locations on the subject parcel. In the absence of such a delineation, OE recommends total relocation of all cultivation square footage from this location. A detailed discussion of the proposed relocation receiving area can be found in Section 6.0 of this report.

CA#15 Remediation Recommendations

Little remediation is required at this site other than ceasing cultivation and removal of all supplies. The owner has already voluntarily ceased cultivation at this site since 2016 and begun the process of dismantling the greenhouses that were present. There does not appear to be any remaining cultivation soil. Removal of the remaining construction materials should be sufficient to essentially restore the site to native conditions.

5.4 Relocation Donor Area: "CA #16"



Figure 11: CA#16 shown in close proximity to several watercourses. Drainage from the site is directly toward the watercourse to the South.

CA#16 consists of cultivation beds measuring approximately 61 ft by 51ft which were set on native ground. This site is located approximately 30 feet from a nearby class III watercourse with drainage from the site traveling directly toward the stream. Maintaining the SWRCB required 50-foot buffer to the riparian areas to the North and South of the cultivation area is impossible at this location.

Per OE's CAV Response Memo, this area was the site of approximately 2,973 ft² of outdoor cultivation. Due to the proximity to the class III stream channels, OE recommends total relocation of all cultivation square footage from this location. A detailed discussion of the proposed relocation receiving area can be found in Section 6.0 of this report.

CA#16 Remediation Recommendations

No remediation is required at this site other than ceasing cultivation. The owner has already voluntarily ceased cultivation at this site since 2016 and cleaned up all supplies that were present. There does not appear to be any remaining cultivation soil.

5.5 Relocation Donor Area: “CA#2”

CA #2 is an “administrative” reduction (See methodology section above for details). OE staff determined proposed square footages based on in-field measurements. OE has concluded that any reduction is apparent in nature. Cultivation which appears under the tree canopy has been rearranged into greenhouses which appear in the revised county site plan as greenhouses #28 & 29. Pre-existing square footage under the canopy is hard to determine, but the final arrangement in CA #2 has less square footage than authorized in the County CAV for this subarea. No nearby watercourses or wet areas were identified by OE. Cultivation slopes are 0-10%. No remediation is proposed, although some measures were identified in the WRPP.



Figure 12: (Left) CA#2 as it appeared on 5/29/2014, and (right) as it appeared on 9/28/2018.

6.0 Relocation Receiving Areas

6.1 Relocation Receiving Area: “CA#1”



Figure 13: Cultivation area 1 as it appeared in May of 2014 Image source: Google Earth Pro

CA#1 is the main proposed relocation site and will receive approximately half the relocated square footage amounting to approximately 13,100 ft² of “new” cultivation. The “existing” site according to the County’s 2014 “basis year” appears in Figure 13 above with 2,500 ft² of authorized mixed light cultivation per the County CAV. However, in assessing the impacts of this “proposed” cultivation site, the area should be considered in the context of its 2015 configuration. Figure 14 shows the site as it existed on 6/09/2015 which clearly shows the pre-2016 development consisting of dense rows of cultivation amounting to approximately 9,000 – 10,000 ft² of outdoor cultivation which was not have been accounted for with a 2014 basis year.



Figure 14: CA#1 as it appears on 6/09/2015. Image source: Terraserver

Figure 15, below, shows the location of the proposed 13,100 ft² cultivation areas. An additional 2,500 ft² of authorized mixed light cultivation will be present in the arrangement shown in Figure 13 above which is not shown on the figure below.



Figure 15: The proposed areas for cultivation relocation in CA#1. Note, existing authorized 2,500 SQFT not shown. See revised County Site Plan for additional details. North is oriented up.

In area B from the figure above, the cultivation area needs to be set back (compared to the 2015 arrangement pictured) from the top of bank where a class III stream originates. Drainage from the site is to the northeast where no nearby watercourse is present. Slopes on the proposed cultivation area are approximately 20%, and no grading is proposed as part of this relocation except that required by hand tools to stabilize outdoor cultivation pots. Access to the cultivation pots will occur via existing roads and footpaths.

Area A from the figure above involves an expansion of the existing footprint to the available area to the East up to the tree-line as pictured. When considered with the reduction in size from Area B, the total cultivation footprint is likely subject to only a modest increase. There are no nearby watercourses with long vegetated buffers for run-off control. The cultivation slope is similar to Area B, at approximately 20% across the proposed cultivation perimeter. No grading is proposed at this location except that required by hand-tools to stabilize outdoor cultivation pots. Access to the area will be performed via existing roads and footpaths.

6.2 Relocation Receiving Area: “GH #26 & 27”



Figure 16: Greenhouses #26 & 27.

Greenhouses #26 & 27 (Left and right, respectively in the figure above) are located on what appears to be a natural bench with 0-5% slopes. The flat is located near a Class III watercourse to the South with the nearest greenhouse approximately 63 feet to top of bank. Drainage from the site is disconnected from any nearby watercourses and travels approximately East-Southeast. Greenhouse #26 is dimensioned 23.5-ft x 100-ft and greenhouse #27 is 30-ft x 100-ft.

No grading is proposed at this site, and any existing disturbance has revegetated with native grasses and shrubs or been mitigated through application of gravel. The site appears to remain relatively dry most of the year, with no hydrophilic plants found by OE. A ground level view of the site can be seen in Figure 17 below. The southern portion of road from the fork to the access road is to be abandoned per the WRPP and the road section in the figure above which is shown intersecting with one of the greenhouses has already been abandoned and partially revegetated and/or covered by vegetative debris with no evidence of erosive issues. Access is still provided to the site via the North driveway with no interruptions to road connectivity.



Figure 17: Greenhouses #27 & 28. View looking Northeast.

6.3 Relocation Receiving Area: “Area #S”



Figure 18: Proposed Area #S aerial view. Image date 5/29/2014 Yellow line shows approximate parcel boundary per Humboldt County GIS shapefile, but existing fence in image appears approximately 20-ft further in the Southeast direction.

Area #S has no current nor known historical cultivation activity. It is located across the road from cultivation area “CA#3”. It consists of a grassy clearing with approximate slopes of 5% shaped in an approximately 2,758-ft² triangle with approximate base 85-ft and height of 32-ft. There are no nearby watercourses. Development of this location for the purposes of cultivation would consist of laying cultivation pots and irrigation line for full-sun cultivation. No grading or significant hand-tool work is anticipated as part of the proposed relocation to this area.

6.4 Relocation Receiving Area: “CA #9”



Figure 19: Cultivation area CA#9 as it appeared on 5/29/2014.

CA#9 consists of a historic cultivation area with a total estimated square footage of 4,692 ft² per OE's CAV Response Memo and consisted of a mix of greenhouses and full sun cultivation beds and pots. The owner has not cultivated in this area for the last 2 years, but it remains a viable cultivation area with historic precedent and is consistent with the proposed operation. The square footage was assessed by drawing relatively tight boundaries around pre-existing cultivation. OE believes that infill between these boundaries can easily account for an additional 2,300 ft² of cultivation in the form of cultivation pots placed on the ground. Some light clearing of existing fruit trees and small shrubbery may be required, but OE does not believe cultivation will need to extend beyond the existing developed perimeter. No grading is anticipated as a result of this expansion via infill. The nearest watercourse is approximately 180 feet to the Southwest, and the ground does not appear saturated nor was the presence of any hydrophilic plants noted.

6.5 Relocation Receiving Area: “CA #3”

CA #3 is not a true relocation area. Since it was identified in the County CAV document, OE opted not to challenge the square footage authorization for the 2014 basis year. The “additional” 500 ft² at this site is proposed to count against the total square footage of the site, formally making it a “relocation area”, but it does not in fact represent any actual increase in cultivation square footage. The square footage estimate made by OE was derived from in-field measurements of actual existing cultivation and not subject to the types of errors inherent to orthographic projection of an oblique angled photograph of a curved surface. The following figure is a comparison of the 2014 aerial image and the 2018 aerial. While the image quality is poor, it is clear that the cultivation arrangement in both years is essentially identical.



Figure 20: Left image CA#3 on 5/29/2014, Right image same site on 9/28/2018