
A PRE-EXISTING INVESTIGATION FOR THE LIVE OAK MEADOWS COMMERCIAL CANNABIS CULTIVATION, HUMBOLDT COUNTY, CALIFORNIA

COUNTY APPLICATION: 11903 ASSESSOR'S PARCEL NUMBER (APN): 215-151-002



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Note: The term artefact is used throughout this report to refer to contemporary items included in this investigation’s analysis and interpretation of the Live Oak Meadows Shade Garden. These items are not more than 50 years old and do not therefore meet the Office of Historic Preservation’s (OHP) definition of an archaeological artifact (OHP 1995:1-3)

ABSTRACT:

Arsenault & Associates conducted a pre-existing investigation on one shade style cannabis cultivation situated on a 36.43-acre parcel (APN: 215-151-002) located at 1050 Stump Lane, approximately 1.26 miles north of the unincorporated community of Whitethorn, California. This investigation, designated the Live Oak Meadows Pre-Existing Investigation (PEI), was conducted to ascertain the size and age of the Live Oak Meadows Shade Garden and determine if it meets the Commercial Medical Marijuana Land Use Ordinance (CMMLUO, Ord. No. 2559) definition for a pre-existing cultivation area. The CMMLUO requires a cultivation area to have been in use prior to January 1, 2016 to qualify as a pre-existing cultivation area (CMMLUO 55.4.14.1). The Live Oak Meadows PEI examined the deterioration of this cultivation sites’ infrastructure and the age of its associated refuse to determine that it was used between 2003 and 2016. The Live Oak Meadows Shade Garden was also found to consist of three associated, but discrete, clusters of plant locations accounting for 114 plant locations and 8,954 ft² of cultivation area. This investigation’s findings indicate that the Live Oak Meadows Shade Garden qualifies as a pre-existing cultivation area as defined by the CMMLUO (55.4.14.1).

Pre-Existing Investigation Synopsis:

The Live Oak Meadows PEI has concluded that the Live Oak Meadows Shade Garden consists of 8,954 ft² of cultivation area and was in use between 2003 and 2016. This conclusion was reached by examining the deterioration of the shade garden and its associated refuse.

Table 1. Live Oak Meadows Shade Garden Summery

General Location	Plant Locations	Assigned ft²
Cluster 1	1-74	5,811.96 ft ²
Cluster 2	75-86	942.48 ft ²
Cluster 3	87-114	2,199.12 ft ²
Totals:	114 plant locations	<u>8,954 ft² (rounded)</u>

Cover Figure: Overview of the access road situated adjacent to the Live Oak Meadows Shade Garden.

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1. INVESTIGATION SUMMARY

On September 5, 2018 Arsenault & Associates conducted an investigation of a pre-existing shade garden style cannabis cultivation situated 1.26 miles north of Whitethorn, California. Figure 1 depicts the Live Oak Meadows Shade Garden and the parcel listed on the county permit. The parcel listed on the county permit application (#11903) for the Live Oak Meadows Cannabis Cultivation is APN 215-151-002. The shade garden under investigation is situated in the eastern portion of this parcel, measures 8,954 ft² in area, and was used between 2003 and 2016, as indicated by its associated refuse and deterioration.

Illicit cultivation sites, such as the shade garden under investigation, are colloquially known as guerrilla grows and were designed to avoid detection from helicopter patrols and aerial/satellite photography. The Live Oak Meadows Shade Garden consists of a three discrete cultivation clusters contained on a spur with a southeasterly aspect. This shade garden is situated under an overgrown canopy consisting of hardwoods, such as manzanita and madrone, as well as mixed conifers and tan oak. When the Live Oak Meadows Shade Garden was an active cultivation area it is likely an open exposure was maintained over plant locations by manually trimming tree and bush limbs. Since its disuse these small exposures have become overgrown (Appendix A). The actual plant locations were denoted by remnant fertilizer bags, representing the original plant locations, containing humic soil (Appendix A). Often plant locations were situated around the edges of exposures or near low lying brush. This was likely done to minimize the visual footprint of the shade garden while still providing the plants direct sunlight. The Live Oak Meadows Shade Garden was initially investigated by Arsenault & Associates in 2018.

The Live Oak Meadows PEI was primarily designed to document the size of the shade garden and ascertain its duration of use. Three clusters of plant locations are included in the Live Oak Meadows Shade Garden. Plant locations were diffusely scattered under a closed exposure throughout each of these respective clusters. Cluster 1 was found to contain 74 plant locations and is the most southernly of the clusters. Clusters 2 and 3 are situated approximately 174 feet (ft) to the northwest of Cluster 1 and contain 12 and 28 respective plant locations. These cluster areas are separated by a switchback in the main access road and are best depicted in Figure 2. Since plant locations were inconsistently scattered throughout each cluster raw acreage was assigned to the clusters based on the number of plant locations they contain. Clusters 1, 2, and 3 all contain plant locations consisting of a plastic bag filled with potting soil and are situated on the same east facing spur. The environmental context and plant locations suggest that these clusters are associated with each other and were used concurrently. Temporally diagnostic items were collected from two of the three clusters, as well as an irrigation site, depicted in Figure 2, located to the immediate west of Cluster 1, and demonstrates they all were likely used between 2003 and 2016.

Cultivation area for each cluster was determined by assigning every plant location a generalized and consistent amount of cultivation area. Plant locations were assigned an 8'6" foot diameter area which reflects the size of the cannabis plant that plant location likely represents. An additional 1.5 feet was added to this dimension to reflect the necessary walkway area around each cannabis plant.

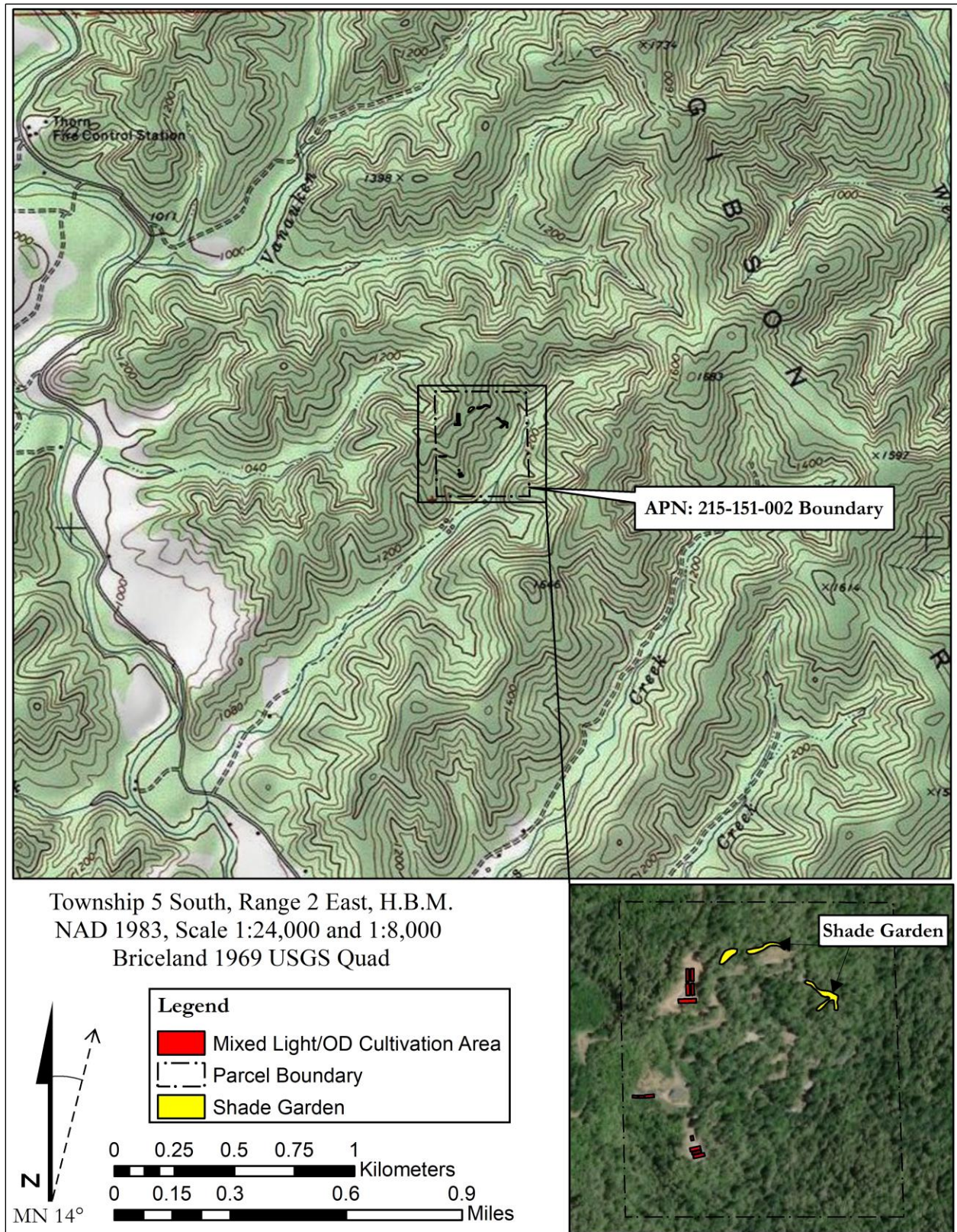


Figure 1. Investigation Location Map

The total amount of square footage assigned to each plant area was therefore equivalent to a 11.5-foot by 11.5-foot area. This 78.54 ft² area includes both the relatively large canopy of an outdoor, loosely controlled, cannabis plant and the area required around/between individual plants. Specifically, the spacing between each plant is significant since this is what deterred the cultivation's detection from aerial patrols and allowed cannabis farms to access the plant locations. Just as the correct spacing between plants grown in mixed light conditions is essential to a cultivation's survival and longevity so was the spacing, and placement, of shade garden grown plants important. Generally, plants grown in shade garden conditions grew larger than their mixed light counterparts and required more area between plant locations. Therefore, an average and approximate area of 78.54 sq. ft. (10-foot diameter area) was assigned to each plant location. Given that the Live Oak Meadows Shade Garden was found to contain 114 plant locations, 8,954 ft² of pre-existing cultivation area was assigned to this garden. Temporally diagnostic items were collected from two of the three clusters, as well as an irrigation site, and demonstrates that this garden was likely used between 2003 and 2016.

The intent of the Live Oak Meadows PEI was to both measure and date the Live Oak Meadows Shade Garden. In order to identify and collect temporally diagnostic contemporary cultural constituents associated with the Live Oak Meadows Shade Garden the garden was surveyed using pedestrian transects. These transects were spaced between 5-10 m apart and systematically aligned throughout the shade garden area. The shade garden was primarily dated by collecting and examining temporally diagnostic items associated with it. These materials consist of discarded agricultural refuse that provides investigators a window into past activities undertaken at the Live Oak Meadows Shade Garden.

From an archaeological perspective these discarded agricultural materials serve the same function as artifacts which are often recorded and interpreted as material data. The type and frequency of the material data found at an archaeological site is used to inform on the function and duration of human use of that site. This approach to interpreting past human behavior was applied by the Live Oak Meadows PEI to date the contemporary use of the shade garden under investigation. The term artifact, as it is defined by the Office of Historic Preservation (OHP), does not apply to contemporary materials because they are less than 50 years old (OHP 1995:1-3). However, remains less than 50 years old fit the more broadly recognized social anthropological definition for an artefact, which is simply a human produced and used object that is the focus of scientific and/or anthropological inquiry (Henare 2003). Given that these items meet the social anthropological definition of an artefact they will henceforth be referred to as such. Additionally, the use of the alternative spelling of the word artefact is used throughout this report to help avoid unnecessary confusion when describing contemporary artefacts vs. prehistoric or historic-era artifacts.

Specific attention was paid to identify artefacts that still contained markings or labels which could later be dated. These items were considered temporally diagnostic and were collected for further analysis at the offices of Arsenault & Associates. In total 16 artefacts were collected as part of the Live Oak Meadows PEI. Fifteen of these artefacts were considered temporally diagnostic and yielded dates falling between 2003 and 2016. Specifically, the temporally diagnostic items included an irrigation timer with batteries from 2003, planter cartons from 2008, and fertilizer bags with a best buy date of 2019, indicating they were bagged and sold at least two to three years prior. These

artefacts demonstrate that the Live Oak Meadows Shade Garden was in use between 2003 and 2016. This conclusion is additionally supported by the deterioration and closure of the exposures above the individual plant locations.

1.1 PROFESSIONAL QUALIFICATIONS

The field crew for this investigation consisted of Mark Arsenault, MA, RPA. Mr. Arsenault is a professional archaeologist recognized by both the Register of Professional Archaeologists (RPA) and the California Historic Information System as a qualified Principal Investigator. He also meets the United States Secretary of the Interior's Professional Qualifications Standards for Archaeology (Title 36 CRF Part 62). Mr. Arsenault has been working in archaeology in northwestern California since 2011 and regularly takes part in phase I, II, and III investigations. In addition to serving as this investigation's Principal Investigator Mr. Arsenault holds an M.A. in applied anthropology, specializing in archaeology. Since Mr. Arsenault is the acting Principal Investigator on this project it was conducted as an anthropological study and as such includes the use of anthropological terms, methodologies, and interpretive modes for examining past human behavior.

2. FINDINGS

The Live Oak Meadows PEI examined both the spatial and temporal aspects of the shade garden contained on APN 215-151-002. The fieldwork for this investigation was conducted on September 5, 2018 and included a pedestrian survey of the cultivation area and a collection of temporally diagnostic artefacts to date on-site cultivation activity. The cultivation site consists of three cultivation clusters situated on a spur with a southeasterly aspect. Originally this cultivation area and the corresponding exposures were manually maintained to provide cannabis plants full sun exposure during the growing season. These exposures are now overgrown with mixed hardwood bushes and annual forbs and grasses, suggesting it has been abandoned for some time. The irrigation system, closure of the manually maintained exposure, and deterioration of the refuse associated with this cultivation site indicates that the Live Oak Meadows Shade Garden has not likely been occupied or in use since at least 2016. Additionally, this shade garden was found to contain a total of 114 plant locations accounting for 8,954 ft² of cultivation area. These conclusions were reached by analysis of both field and lab work phases of the Live Oak Meadows PEI.

2.1 METHODS

Fieldwork began with a systematic pedestrian survey designed to locate temporally diagnostic refuse and plant locations associated with the Live Oak Meadows Shade Garden. This survey was supplemented by a guided tour of the cultivation site from Maceo Gienger, the proprietor of Live Oak Meadows, LLC and the cannabis cultivation on APN 215-151-002. Identified plant locations were initially flagged to avoid recounting or redocumenting the same location twice. The documentation of these plant locations included taking a GPS point, photograph, and basic measurements of the plant location. A Garmin GPSMAP 64S and Delorme inReach GPS were used to take points and a Pentax Optio WG-2 digital camera was used to photograph plant locations. All the digital data pertaining to this investigation is on file at the offices of Arsenault & Associates, located in Arcata, California, and can be accessed by contacting Mark Arsenault, MA, RPA at mjaarsenault@gmail.com. Any temporally diagnostic materials identified in association with the Live Oak Meadows Shade Garden were collected. All the collected materials were acquired from within the one of the shade garden clusters or from an irrigation site situated within its immediate vicinity. Once acquired, artefacts were transported to the offices of Arsenault & Associates for further analysis.

Laboratory analysis consisted of identifying basic descriptive information, researching the production date, and entering each artefact into a master catalog (Appendix B). The basic descriptive information collected on each artefact included the size, color, function, material, and general shape of that item. Each item was then examined to determine the minimum number of items (MNI) represented and assigned an arbitrary catalog number. Finally, each artefact was researched to determine if its production could be dated. Dates for the earliest possible production of an artefact are known as the *terminus post quem* (TPQ) a term which translates to “limit after which”. The latest possible date for an artefact’s production was indicated by the term *terminus ante quem* (TAQ) which translates to “limit before which”. Artefact research can yield both general and specific TPQ/TAQ dates for specimens collected from the Live Oak Meadows Shade Garden. The master catalog generated by the Live Oak Meadows PEI can be found in Appendix B of this report.

2.2 FINDINGS

Fieldwork at the Live Oak Meadows Shade Garden acquired 16 artefacts, all of which are agriculturally associated items. For a summary of this investigations master catalog see Table 1. Items collected from the Live Oak Meadows Shade Garden were cataloged according to the site they originated from. All the artefacts collected by this investigation were associated with the Live Oak Meadows Shade Garden.

The Live Oak Meadows Shade Garden consists of three cultivation clusters. Clusters 1, 2, and 3 were found to contain 114 plant locations. An irrigation site was also identified in association with and to the immediate west of Cluster 1 (Figure 2). This shade garden is situated in the eastern portion of APN 215-151-002 along a spur with an easterly aspect. The plant locations were denoted by fertilizer bags full of potting soil. Cluster 1 was the largest of the cultivation clusters included in the Live Oak Meadows Shade Garden.

Cluster 1 contains 74 plant locations (Plant Locations 1-74) distributed across an approximately 6,000 sq. ft. area and is situated on an east facing spur with a closed exposure. All the plant locations in Cluster 1 were represented by remnant VermiFire bags containing potting soil. Cluster 1 is the most accessible cluster and is located adjacent, to the south, of the southern staging area. Since Cluster 1 contains 74 plant locations it was determined to represent a total of 5,811.96 ft² of pre-existing cultivation area. Cluster 2 is located approximately 174 ft upslope from Cluster 1 on the opposite side of an access road switchback.

Cluster 2 contains 12 plant locations (Plant Locations 75-86) distributed across an approximately 3,000 ft² area situated on a spur with a southeasterly aspect and partially open exposure. The plant locations were identified the same way as those in Cluster 1. Since Cluster 2 contains 12 plant



Figure 2. Site Map

locations it was determined to represent 942.48 ft² of pre-existing cultivation area. Cluster 3 is the smallest cluster and located approximately 47 feet west of Cluster 2.

Cluster 3 contains 28 plant locations (Plant Locations 87-114) distributed across an approximately 3,000 ft² area and situated on the same landforms as Clusters 1 and 2. Unlike Clusters 1 and 2, Cluster 3 contains plant locations represented by black plastic bags filled with potting soil (Appendix A: Figures 13 and 14). Cluster 3 contains 28 plant locations and therefore represents 2,199.12 ft² of pre-existing cultivation area. Plant locations as well as the corresponding GPS points and photograph numbers are enumerated Appendix B.

Sixteen artefacts were collected as part of the Live Oak Meadows PEI. The assemblage acquired from the Live Oak Meadows Shade Garden includes one irrigation timer, 11 planter cartons, and four fertilizer bags originally used as a plant location. Each of these items, their catalog numbers, and basic descriptive information is listed in Table 1 and Appendix B. While all these items showed signs of fatigue and weathering consistent with being left at the shade garden for several years only 15 of the items yielded definitive date ranges. The most temporally diagnostic item collected from the Live Oak Meadows Shade Garden is the irrigation timer. This item, which was designated Catalog #1, contained four AA size batteries with best buy dates of 2003 (Figure 15). The irrigation timer was therefore assigned a TAQ of 2003 since the batteries indicate that was the latest possible date it was used. The timer and all the planter cartons were collected from the irrigation site situated to the immediate west of Cluster 1. Ten of the planter cartons collected from this site contained a “Gage Industries, Inc.” maker’s mark. Gage Industries, Inc. was an agricultural product company that was acquired by Sabert Corporation in 2008 (Bloomberg 2018). These items were consequently assigned the TAQ of 2008 since they could not have been produced after Gage Industries, Inc. closed. The final temporally diagnostic artefact type acquired from the Live Oak Meadows Shade Garden were the plant location fertilizer bags themselves.

The four VermiFire Potting Soil bags used to cultivate the shade garden’s cannabis plants were collected from Cluster 1 and 2. All the collected fertilizer bags were marked with a best buy date of January 17, 2019. A new 2018 bag of VermiFire Potting Soil was found at Northcoast Horticulture Supply in McKinleyville, CA. This bag was marked with the best buy date of February 13, 2020, indicating the bags collected from the Live Oak Meadows Shade Garden were likely placed there in late 2016 or early 2017. These bags represent a continuation of use of the shade garden and do not demonstrate that the shade garden post dates 2016. The date ranges provided by the Gage Industries, Inc. planter cartons and irrigation timer, which date to 2008 and 2003 respectively, suggest the VermiFire Potting Soil bags only reflect the latest period of use at this shade garden.

Table 2. Summary of Master Catalog

Catalog Number	Function	Type/Shape	MNI	TPQ	TAQ	Color	Important Markings
1	Irrigation Timer	Square	1	-	2003	Gray	Gilmore
2	Planter	Square	1	-	-	Black	JM McConkey & Co.
3	Planter	Square	10	-	2008	Black	Gage Industries
4	Fertilizer Bag	Bag	3	2016	-	White	VermiFire
5	Fertilizer Bag	Bag	1	2016		White	VermiFire

***Full catalog available in Appendix B.**

2.3 CONCLUSIONS

The findings laid out in Section 2.2 indicates that the Live Oak Meadows Shade Garden meets the CMMLUO's definition for a pre-existing cultivation area. Specifically, the irrigation timer dating to 2003 and planter cartons dating to 2008 best supports this conclusion. Additionally, observational data such as the accumulation of duff on top of the plant locations (Appendix A: Figures 6-14) and the closure of the manually maintained open exposures above the plant locations indicates this shade garden predates January 1, 2016. The Live Oak Meadows Shade Garden was found to consist of three cultivation clusters that contain 114 plant locations. Each plant location was found to represent an approximately 10 ft diameter circle of cultivation area (78.54 ft²). Given that each plant location was assigned 78.54 ft² of cultivation area the Live Oak Meadows Shade Garden represents 8,954 ft² of cannabis cultivation area. This geospatial data supplemented with date ranges provided by the collected artefacts indicates that the permit applicant has 8,954 ft² of pre-existing shade garden cultivation area, all of which is situated on APN 215-151-002. It is recommended that the Humboldt County Department of Planning and Building award permit #11903 for the pre-existing cultivation area for the Live Oak Meadows Shade Garden situated on APN 215-151-002. **The data collected by this investigation demonstrates that the Live Oak Meadows Shade Garden was continuously used for several cultivation seasons between 2003 and 2017.**

For more information regarding the Live Oak Meadows PEI or the specimens referred to in this report please contact Mark Arsenault, with Arsenault & Associates, at (510) 673-2207 or via email at mjaarsenault@gmail.com.

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APPENDIX A: FIELD/LABORATORY PHOTOGRAPHS



Figure 3. Photo of a discarded cannabis stalk.



Figure 4. Photo of irrigation line to the immediate west of Cluster 1.



Figure 5. Discarded pile of bamboo sapling stands near irrigation site.



Figure 6. Photo depicting plant location 20 in Cluster 1.



Figure 7. Photo of Plant Location 29 in Cluster 1.



Figure 8. Photo of several plant locations in the southern portion of Cluster 1.



Figure 9. Photo of Plant Location 48 in Cluster 1.



Figure 10. Photo of Plant Location 57 in Cluster 1.



Figure 11. Photo of Plant Location 86 in Cluster 2.



Figure 12. Photo of Plant Location 84 in Cluster 2.



Figure 13. Photo of Plant Location 90 in Cluster 3.



Figure 14. Photo of Plant Location 98 in Cluster 3.



Figure 15. Item #1, an irrigation timer.

APPENDIX B: MASTER CATALOG

Table 3. Master Catalog

Catalog Number	Provenience	Function	Type/Shape	Material	Inventory Number	MNI	Length	Width	TPQ	TAQ	Color	Markings	Citation	URL	Comments
1	Irrigation Site	Irrigation Timer	NA	Plastic	6	1	4.5	3.75	-	2003	Gray	Gilmore	-	-	2003 Batteries
2	Irrigation Site	Planter	Square	Plastic	1	1	4	3.5	-	-	Black	JM McConkey & Co.	-	-	-
3	Irrigation Site	Planter	Square	Plastic	10	10	4	3.5	-	2008	Black	Gage Industries	Bloombe rg 2018	https://www.bloombe.com	-
4	Locus 1	Fertilizer Bag	-	Plastic	3	3	30	19	-	-	White	VermiFire			
5	Locus 2	Fertilizer Bag	-	Plastic	1	1	30	19	-	-	White	VermiFire			

Table 4. Plant Location List

Plant Location #	Photo #	Cluster
1	4367	1
2	4368	
3	4369	
4	4370	
5	4371	
6	4372	
7	4373	
8	4374	
9	4375	
10	4376	
11, 12	4377	
13-17	4378	
18	4379	
19	4380	
20	4381	
21	4382	
22	4383	
23	4384	
24	4385	
25	4386	
26	4387	
27	4388	
28	4389	
29	4390	
30	4391	1
31	4395	
32	4396	
33	4397	
34	4398	
35	4399	
36	4400	
37	4401	

38	4402	
39	4403	
40	4404	
41	4405	
42	4406-4407	
43-45	4408	
46	4409	
47	4410	
48	4411	
49	4412	
50	4413	
51	4414	
52	4415	
53	4416	
54	4417	
55	4418	
56	4419	
57	4420-4421	
58	4422	
59	4423	
60	4424	
61	4425	
62	4426	
63	4427	
64	4428	
65	1048	
66	1049	
67	1050	
68	1051	
69	1052	
70	1053	
71	1054	
72	1055	
73	1056	
74	1057	
75	4457	2
76	4458	
77	4459	
78	4460	
79	4461	
80	4462	
81	4463	
82	4464	
83	4465	
84	4466	
85	4467-4468	
86	4469	

87	4429	3
88	4430	
89	4431	
90	4432	
91	4433	
92	4434	
93	4435	
94	4436	
95	4437	
96	4438	
97	4439	
98	4440	
99	4441	
100	4442	
101	4443	
102	4444	
103	4445	
104	4446	
105	4447	
106	4448	
107	4449	
108	4450	
109	4451	
110	4452	
111	4453	
112	4454	
113	4455	
114	4456	