

MAY 2018

Cultivation and Operations Plan
for Birds of Paradise, LLC
APNs 221-071-027 & 221-071-042

PREPARED FOR

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1 PROJECT DESCRIPTION

Birds of Paradise Farms, LLC seeks to obtain land use approval to cultivate 19,840 square feet (SF) of cannabis. Operations will take place on Humboldt County Assessor's Parcel Numbers, 221-071-027 & 221-071-042 located in the Salmon Creek Watershed. Operations will consist of full sun outdoor and light deprivation greenhouses. Post-harvest cannabis curing and processing will also generally take place on-site.

2 DESCRIPTION OF CULTIVATION ACTIVITIES

Cannabis Cultivation activities for these properties consist of full sun outdoor cultivation with greenhouses used to protect plants during early and late season. All greenhouses have earthen floor and footpaths, and thereby do not preclude the agricultural use of the underlying soil.

Cultivation will be divided between two types of growing technique's:

1. Full Term Outdoor – Plants are grown in fields with no cover and allowed to mature naturally during the growing season, May-October. Currently there is approximately 10,000 SF of outdoor cultivation.
2. Light Deprivation Greenhouses – Plants are grown in two cycles during the year greenhouses are used to protect plant early and late in the season. A Run, plants are started early spring and deprived of light mid-summer to encourage early flowering, April-August. B Run, plants are started mid-season and allowed to mature naturally, July-November. Currently, there is approximately 9,840 SF of light deprivation cultivation.

To improve overall agricultural yield from the property, the landowner plans to convert additional Full Term Outdoor area to Light Deprivation Greenhouses in the future.

2.1 Mixed Light Cultivation

At this time, no supplemental lighting will be used for cultivation. However, in the future, some supplemental lighting may be used for plant starts during March and April.

3 SCHEDULE OF CULTIVATION ACTIVITIES BY MONTH

Operations schedule is based on previous years and may change due to new farming techniques and weather considerations.

Schedule of Cultivation Activities by Month

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
General												
Facility Maintenance	x	x	x	x	x	x	x	x	x	x	x	x
Erosion Control	x	x	x	x						x	x	x
Water Storage Monitoring	x	x	x	x	x						x	x
Water Usage Monitoring				x	x	x	x	x	x	x		
Garden Preparation		x	x	x	x							
Garden/Property Winterization									x	x	x	x

Cultivation – Full Sun Outdoor												
Planting				x	x							
Harvesting									x	x		
Curing/Processing										x	x	x
Cultivation – Light Deprivation												
Raising Nursery Stock		x	x	x	x							
Light Deprivation					x	x	x					
First Harvest & Replanting							x					
Second Harvest										x	x	
Processing							x	x		x	x	
Generator Usage										x		

4 WATER SOURCE, STORAGE AND USE

The main source of water on the property for cannabis cultivation is stored rainwater. There are four off-channel, unlined rainwater catchment ponds on the property which have no significant sources of water other than rainwater catchment (and some minor groundwater percolation input/outflow). The locations of the ponds are shown in the plot plan (Appendix A) and each pond is described below:

- Pond 1 is the smallest pond on the properties with a volume of ~120,000 gallons. This pond is not currently supplying irrigation water and is the primary source for fire suppression. Approximately one-third of the pond's storage percolates into the ground in the early summer, but the pond holds ~80,000 gallons through the summer (excluding evaporation). The pond has a drainage area of less than 1 acre.
- Pond 2 has a capacity of ~230,000 gallons and holds water well throughout the summer. It is used for irrigation on APN 221-071-42. This pond is located on a ridge and has a drainage area of less than ½ acre.
- Pond 3: This pond has a capacity of ~210,000 gallons but only holds approximately 40,000 gallons of water by the beginning of summer with the rest of the water percolating into the ground. This pond is located on a ridge and has a drainage area of less than ¼ acre. The landowner plans to line this pond to increase water storage capacity on the properties.
- Pond 4: This pond has a capacity of ~200,000 gallons and holds water throughout the summer. It is used for irrigation on APNs 221-071-19 and 221-071-27. This pond has a drainage area of less than 1 acre.

Ponds 2 and 3 supply water to the cultivation site on APN 221-071-42 via solar pump, small tank, and piping. Pond 4 supplies water to APNs 221-071-05, 221-071-19 and 221-071-27 via pump, tank, and piping. As previously mentioned, the landowner is planning to line Pond 3 and is also considering installing additional storage based on further assessment of future operation plans. On dry years, a surface water diversion (POD2) is used to supplement the rainwater for irrigation uses.

There are four residences on the property with a connected water system. Domestic water demands are met predominantly from a shallow cistern diversion (POD3) and is occasionally

supplemented by two other surface water diversions (POD1 and POD2) on an as-needed basis. POD1 is located on APN 221-071-027; POD2 is located on APN 221-071-005; and POD3 is located on APN 221-071-005. The Point of Diversion locations can be found on the Plot Plan (Appendix A). Water from POD3 is pumped via a solar pump to poly tanks which gravity feed domestic water storage tanks and residences. There is 5,800 gallons of domestic water storage on APN 221-071-42, 4,000 gallons of domestic water storage on APN 221-071-05, 20,000 gallons of domestic water storage on APN 221-071-27. Domestic use across the five parcels is estimated at 800 gallons per day based off 200 gallons per day per household.

5 PROCESSING PRACTICES AND PLAN

Cannabis cultivated will be processed on-site as well as being delivered to off-site processing facilities. An existing processing building (See plot plan - 800 SF shed on APN 221-071-042 - built to code; owner-build permit to be applied for) will be used to dry and cure plants prior to trimming. A hand washing station for this facility will be located outside of building. A private road will be used to access the processing facility.

5.1 Summary of Processing Practices

- a. Great care is taken to maintain a clean working environment during all stages of processing. Work surfaces and equipment is kept in a clean and sanitary condition. Protocols to prevent contamination of cannabis product with mold or mildew are followed at all times.
- b. Harvested cannabis plants will be transported from garden area to processing area where the plants are inspected and the flower (Bud) with approximately 18 inches of stem is removed from the stalk of the plants to be hung for drying. Large water leaves are also removed during this process. All work is performed by gloved workers using sheers or clippers.
- c. Bud sections are then hung in an on-site drying shed for 7-10 days to dry. Natural wood heat and de-humidifiers are employed as necessary to help facilitate the drying process. During the drying process the buds are carefully monitored for moisture content and mold growth.
- d. Once it is determined that buds have reached the desired moisture content they are removed from the drying facility and placed in sealed totes to cure for 1-2 additional weeks.
- e. Post curing, totes are moved to trimming facility where gloved trimming technicians inspect buds for mildew and impurities, technicians then trim any remaining small leaves and stems from the buds. After trimming, Buds are stored in sealed containers to await distribution for medical use.

6 EMPLOYEE PRACTICES

Currently, work is conducted by family members that live onsite. If, in the future employees are hired, the following practices will be implemented:

1. Birds of Paradise Farms, LLC shall only employ persons for hire as allowable by law.
2. Birds of Paradise Farms, LLC shall comply with all applicable federal, state, and local laws and regulations governing California Agricultural Employers, which may include: federal and state wage and hour laws, CAL/OSHA, OSHA, California Agricultural Labor Relations Act, and the Humboldt County Code (including the Building Code).

6.1 On-site housing

No worker housing is planned.

6.2 Worker Safety Practices

Safety protocols will be implemented to protect the health and safety of employees. All employees shall be provided with adequate safety training relevant to their specific job functions, which may include:

- 1) Employee accident reporting
- 2) Security breach
- 3) Fire prevention
- 4) Materials handling policies
- 5) Use of protective clothing such as long sleeve shirts, brimmed hats, and sunglasses.

Each garden site and or processing area have the following emergency equipment:

- 1) Personal protective equipment including gloves and respiratory protection are provided where necessary
- 2) Fire extinguisher
- 3) First Aid Kit
- 4) Snake Bite/Bee Sting Kit
- 5) Eye Washing Kit

7 WATERSHED & HABITAT PROTECTION/ SUSTAINABLE FARMING PRACTICES

To improve watershed and habitat conditions a holistic land management approach has been implemented. By managing the entire landscape, we can: protect water quality & quantity, reduce fire hazard through fuel load reduction, improve wildlife habitat conditions, and offset climate change through increased carbon storage. Specific measures taken to improve watershed conditions and protect habitat include, but are not limited to the following:

1. The majority of the 19,840 sf of proposed cultivation will be maintained on or near existing locations to minimize land disturbance. 5,000 sf of cultivation on APN 221-071-027 is proposed to be relocated in 2019 to a more suitable location on the parcel to protect water resources.
2. Approximately 16,000 SF of cultivation on APN 221-071-027 is being reduced to 9880 SF; the 15,023 sf of cultivation on APN 221-071-019 and the 8,644 sf of cultivation on APN 221-071-005 will be decommissioned and restored (no permit was applied for on APN 221-071-019, permit to be withdrawn on APN 221-071-005). Therefore, across the entire ownership, the overall square footage of cultivation will reduce from approximately 63,000 sf to 19,840 sf with implementation of the proposed plan.
3. The site has been assessed by Stillwater Sciences' engineer, and conditions are summarized in Appendix B (Monitoring and Reporting Program Details for the Regional Water Quality Control Board Waiver of Waste Discharge Order R1-2015-0023)

4. Soil management practices are transitioning toward development of regenerative, living soil to reduce offsite inputs and improve soil health.
5. Best practices have been employed to ensure minimal runoff from site.
6. Minimal organic fertilizers and pesticides are used for cultivation and are not stored onsite.
7. A Lake and Streambed Alteration Agreement was filed with the California Department of Fish and Wildlife for maintenance and replacement of 14 stream crossings, three surface water diversions and remediation of one of the cultivation sites.

7.1 Site Drainage, Runoff and Erosion Control Measures

Site drainage is shown on the Plot Plan in Appendix A. Roads and flats are properly engineered to disperse any run-off in a manner that slows, spreads, and sinks water into vegetated meadow or forest soil. Additionally, the landscape is monitored for erosion and pre-emptively maintained to prevent loss of topsoil and degradation of graded features.

7.2 Road Use

Birds of Paradise Farms, LLC will monitor and maintain the road network to ensure that it is in good condition and not a source of sediment. Workers will be instructed to drive minimally and share vehicles when possible. Workers will be encouraged to walk when possible to minimize environmental impact and improve personal health. Roads will be used minimally during wet winter months.

8 SOIL FERTILITY AND AGRO-CHEMICAL USE

8.1 Fertilizers, Amendments, and Other Agro-Chemicals

Birds of Paradise Farms, LLC will follow best organic operation practices. Fertilizers, amendments or other agro-chemicals will be stored in dedicated locations within 800 SF shed on APN 221-071-042. All fertilizers or other regulated and non-regulated agro-chemicals shall be stored within covered areas with secondary containment.

8.2 Fuels

Petroleum products are being stored adjacent to each residential area on each of the two parcels where cultivation is occurring (APNs 221-071-027 and 221-071-041). Each curtilage has approximately 500 gallons of diesel fuel and ~10 gallons of gasoline used for small machines. All petroleum products and liquid chemicals shall be stored in secondary containers that are sufficiently impervious and compatible with the substance being stored to prevent discharge or seepage. The registrant shall also implement spill prevention countermeasures and have spill kits with an ample supply of absorbent pads near storage and work areas.

9 DEPARTMENT OF ENVIRONMENTAL HEALTH INFORMATION

9.1 On-Site Wastewater Treatment

- Structures and manmade landscape features on the property. (See Plot Plan in Appendix A)

- Typically, 4 family members would be working under CMM Permit during production April-October. During peak harvest periods as many as 8 family members may be working on the property in September and October.
- There is one septic system (engineered but not yet permitted) on the property adjacent to the 800 SF shed on APN 221-071-042. In the future, as necessary, the applicant would consider installing temporary facilities (porta-potties) as needed.
- Distance between restrooms and work areas range from 200' to ~1 mile

9.2 Water Production/Well Construction

- Water source is shallow well water for drinking and stored rainwater for agriculture.
- Daily water demand will vary by season. Projected use during operational periods will vary from 800-3,200 gallons. For complete water use information please see submittals to Regional Water Board (Appendix B).

9.3 Hazardous Material

- Diesel, gasoline, and propane are stored on site for heating and power supply. All fuels shall be stored in approved storage containers. Diesel and gasoline shall be stored in covered areas with containment device.
- All fertilizers, soil amendments, and pesticides used on site are stored indoors in approved containers. See operations plan for list of products and storage procedure. Safety Data Sheets (SDS) for commercial products attached.
- Bleach and alcohol are used on site to clean small hand tools typically these products would be stored in office areas in one gallon bottles or smaller. Other household sanitizers may be used in kitchen and bathrooms.
- Small equipment and generator oil may be changed on site if so procedure will be completed over containment devices to prevent spillage

9.4 Solid Waste/Recycling

- Garbage is stored in secure areas within the 800 SF shed on APN 221-071-042. Covered recycling storage containers and provided at each work area.
- Garbage will be removed from property on a weekly basis.
- Solid waste is hauled to approved County collection locations.
- All spent growth medium will be tilled back into grow beds or deposited into approved composting bins for future re-use in soil medium.

10 DESCRIPTION OF GENERATOR USE, POWER SOURCE, AND STORAGE

Birds of Paradise Farms, LLC utilizes multiple solar PV systems and a micro-hydro system for operational power. During normal operation times and weather patterns these systems provide sufficient power. A 25 KW diesel generator is utilized to provide backup power at the processing building on an as-needed basis to augment solar PV system during peak demand periods.

The generator is a 25KW Multiquip Whisper Watt Diesel generator housed in a shed. The 25Kw Multiquip generator is rated at 63 Db 23 feet away from the generator. The expected noise level at the nearest property line (approximately 800 feet) calculated using

<https://www.engineeringtoolbox.com> is 32.2 dB. As previously mentioned, the generator is located in a shed, so the actual noise level is significantly less than those calculated above.

11 SECURITY PLAN

This security plan has been developed to incorporate best practices suggested by security industry professionals* and law enforcement personnel. Security plan will be continually updated and improved as further information is available.

1. First layer of security comes with the education of the workers and delivery personnel. All personnel are briefed in being discrete as well as professional in their jobs. They are also briefed with this plan and understand what is outlined here.
2. Very few people have access to the property, which lowers the probability of breach of security measures.
3. This property lies at the end of a single lane private road, no one else gets access through the property.
4. A neighborhood watch is in place to identify and alert land owners of possible suspicious activity or vehicles.
5. A locked gate is in place on the access to the property. The combinations are changed frequently. This is to help secure the property from people who have made deliveries or other access.
6. No trespassing signs are posted on the single access road.
7. Curtilage is fenced and posted with no trespassing signs.
8. Security cameras are to be placed along access road, and signs will be in place saying, "security cameras in use".
9. Motion sensor detection devices and lights are to be placed along access road. This will alert workers of incoming traffic.
10. Workers are to be briefed on evacuation plan if security is breached.
11. No large quantities of cash or valued items are to be left on the property at any time.
12. Workers are informed to call 911 and local responders in case of any emergency. They are also briefed on the address and access to the property in case of any emergency.

12 EMERGENCY CONTACTS

Birds of Paradise Farms, LLC shall visibly post and maintain an emergency contacts list which will include at a minimum:

1. Managerial and property owner contact(s):
 - a. Property Owner/Manager: Dan Gribi – (707)943-3006
2. Emergency responder contact(s):
 - a. EMERGENCY CALL 911
 - b. Nonemergency Sheriff: (707) 445-7251
3. Hazardous Material/Poison control contact(s):
 - a. EMERGENCY CALL 911
 - b. Poison Control Centers 1-800-222-1222
 - c. Humboldt County HazMat: (707)445-6215
 - d. Humboldt County Ag Dept: (707)441-5260

Appendix A Plot Plan

Appendix B
Regional Water Quality Control Board
Monitoring and Reporting Program Details

Operations Plan Addendum

Birds of Paradise Farms LLC

221-071-042

PLN-12533-SP

07/21/2023



This addendum to the previously submitted Operations/Cultivation Plan was prepared as a response to the incomplete letter dated 07/21/2023 for cultivation permit PLN-12533-SP.

Water Irrigation and Storage Plan

Irrigation water for this project is sourced from two rainwater catchment ponds located on the parcel. These ponds are labeled on the site map as pond 2 and pond 3. Pond 2 has a capacity of 230,000-gallons and retains its collected water throughout the summer months. Pond 3 has a capacity of 210,000-gallons. These rainwater catchment ponds provide more than enough water to supply the irrigation needs of this project. The main water source for this project is pond 2, and pond 3 is used on an as needed basis. The water is pumped from the ponds to the water tanks and circulated back to the ponds via a solar pump. Water use for this project is estimated to be 112,275-gallons annually.

A rainwater catchment analysis was completed using prism.oregonstate.edu/explorer to analyze the capability of the rainwater catchment to capture sufficient water for the project. The average rainfall was taken from the lowest rainfall years from the past 30 years (1991-2021), which were 1991 at 35.07", 2013 at 21.68" and 2020 at 32.53". Average rainfall amount is 29.76". The rainwater catchment surface of pond 2- $5,700\text{ft}^2 \times 29.76" \times 0.6234 = 105,748$ -gallons can be collected annually in this pond. Rainwater catchment surface of Pond 3- $4,500\text{ft}^2 \times 29.76" \times 0.6234 = 83,486$ -gallons can be collected annually in this pond. Total annual rainwater catchment for these two ponds is 189,234-gallons of rainwater collection annually. This is more than enough water to serve this project.

Domestic water is sourced from surface water diversions that are interconnected to all the residences on the multi-parcel property owned by the applicant. The main point of diversion utilized for domestic purposes is labeled as POD 3 and is located on adjacent parcel 221-071-005 under the same ownership. The applicant also utilizes and maintains points of diversion POD 1 and POD 2 on an as needed basis. POD 1 is located on adjacent parcel 221-071-027, and POD 2 is located on 221-071-005, also under the same ownership. There is a total capacity of 10,000-gallons of domestic water storage serving the five parcels that make up this multi-parcel property. Domestic water use is estimated at 800-gallons per day across all five parcels and multiple residences.

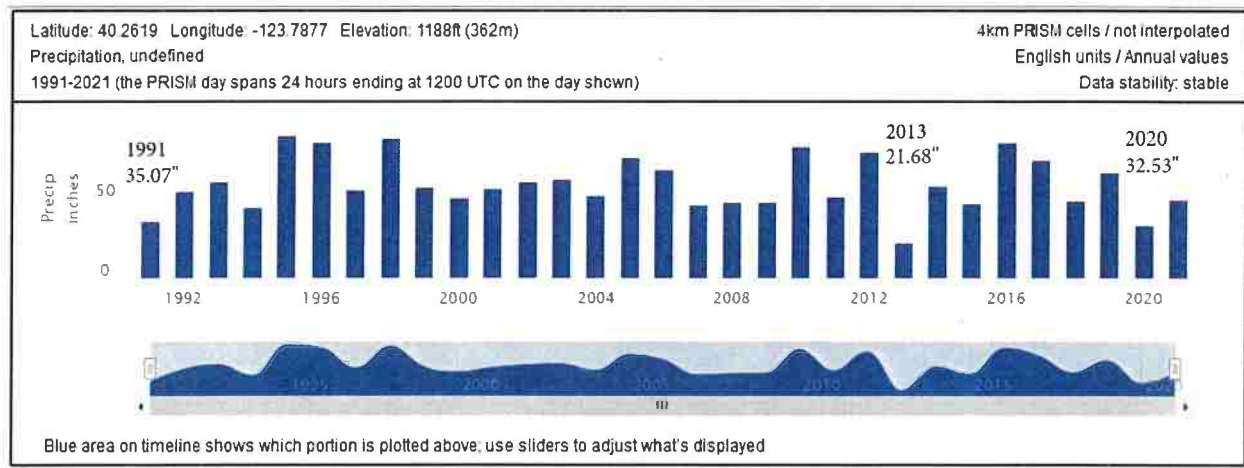
There is an additional pond on adjacent parcel 221-071-005 under the same ownership that is used strictly for fire protection. This pond is labeled as Pond 1 on the map. This pond has a capacity of 120,000-gallons. Even though this pond loses some water to ground percolation, it still maintains a capacity of approximately 80,000-gallons throughout the summer for fire protection use.

Type/Size of Infrastructure	Water Source	Use
2 qty. 2800-gal. HDPE tanks	Ponds 2 and 3	Irrigation
2 qty. 1200-gal. HDPE tanks	Ponds 2 and 3	Irrigation
2 qty. 3000-gal HDPE tanks	POD 3 (POD 1 & 2 as needed)	Domestic
1 qty. 2800-gal. HDPE tank	POD 3 (POD 1 & 2 as needed)	Domestic
1 qty. 1200-gal. HDPE tank	POD 3 (POD 1 & 2 as needed)	Domestic

Annual Water Usage

Month	Cannabis Use in Gallons	Domestic Use in Gallons (combined for all parcels)
January	0	24,800
February	0	22,400
March	3775	24,800
April	6200	24,000
May	11900	24,800
June	16700	24,000
July	22400	24,800
August	22400	24,800
September	18900	24,000
October	10000	24,800
November	0	24,000
December	0	24,800
Totals	112,275-gallons	292,000-gallons annually across 5 parcels

Rainwater Catchment Analysis Graph from Prism.oregonstate.edu/explorer- Annual Values over 30 years



Noise Plan

The energy sources for this project are multiple Photovoltaic Solar systems and a Micro-Hydro Electric system with a Honda EU6500isA Generator at the processing building for back up. The generator is only used during times of low energy output from the solar and hydro systems, on an as needed basis during times of peak power demand. The generator is rated at 60db at 23' from the generator. The decibel level measured at 100' from the generator was 48db. The closest property line is 270' from the generator location.

Employees/Contractors

This project is operated by the family members that live on the property. In addition to the applicant and spouse, there is a maximum of six (6) family member employees at any time. The project is mostly run by the applicant and spouse, with supplemental help from additional family member employees as needed during peak operation times.

Worker Safety Practices

Safety protocols will be implemented to protect the health and safety of employees. All employees shall be provided with adequate safety training relevant to their specific job functions, which may include:

- Employee accident reporting
- Security breach
- Fire prevention
- Emergency Numbers

Materials handling policies

Use of protective clothing such as long sleeve shirts, brimmed hats, and sunglasses. Each garden site and or processing area have the following emergency equipment:

Personal protective equipment including gloves and respiratory protection are provided where necessary,

Fire extinguisher

First Aid Kit

Snake Bite/Bee Sting Kit

Eye Washing Kit

Comply with all applicable federal, state, and local laws and regulations governing California Agricultural Employers, which may include federal and state wage and hour laws, CAL/OSHA, OSHA, California Agricultural Labor Relations Act, and the Humboldt County Code (including the Building Code).