Reviewer	Jack A Henry (Senior Environmental Scientist (Specialist)), Janelle Deshais (Environmental Scientist), and Aaron Longstreth (Environmental Scientist)
Contact Info	**CDFW, Northern Region,** CTP@wildlife.ca.gov
Subject	Pre-Harvest Inspection Recommendations Uploaded to CalTREES
To	Santa Rosa Review Team
Timber Harvesting Plan (THP)	1-23-00099-SON, “Steam Donkey THP”
Plan Submitter	Gualala Redwood Timber
RPF	Madeline Green
CalWater Planning Watersheds v. 2.2.1	Big Pepperwood Creek (1113.850201), Black Point (1113.850304), Mouth of Gualala (1113.850202)
Silviculture (Acres) / Yarding	Single Tree Selection (604), Special Treatment Area Prescription (169), Variable Retention (36), No Harvest (16)
PHI Dates	December 11 and 15, 2023
CalTREES PHI Recommendations Due Date	December 29, 2023
Biological Resources of Concern	Swamp harebell (*Eastwoodiella californica*), harlequin lotus (*Hosackia gracilis*), Bishop pine (*Pinus muricata*), and coast lily (*Lilium maritimum*)
Agency and Landowner Representatives	California Department of Forestry and Fire Protection (CAL FIRE) – Kim Sone (Inspector) Gualala Redwood Timber – John Bennett North Coast Resource Management Staff: Registered Professional Forester – Madeline Green Registered Professional Forester – Jamie Pusich Redwood Empire – Jesse Weaver, Stephen Borcich California Geological Survey – Dave Longstreth, Kevin Doherty, Patrick Brand, Morgan Kenner North Coast Regional Water Quality Control Board – Jim Burke California Department of Fish and Wildlife (CDFW) – Jack A Henry, Aaron Longstreth

Discussion for CDFW PHI Recommendations 1-2

Coast lily is seriously threatened in California (1B.1), with over 80% of known occurrences vulnerable to decline, or imminent decline, due to land use practices. Its range in California extends from south of San Francisco to about Westport in Mendocino County, and primarily grows within a few miles of the ocean. It is a perennial, with rhizomatous bulbs, typically flowering from May to August. Habitats include coastal prairies, and canopy openings found within closed-cone and coastal coniferous forests, less than 200 meters in elevation. It is thought to be extirpated from its southern most range (FNA, 2023). There are 84 occurrences documented in California, nine documented in Sonoma County, and of these in Sonoma, only four are documented as being stable (not under threat of extirpation). Although it grows in sun-exposed habitats, it is not an early successional plant. Lily bulbs require adequate drainage and direct impacts to the soil should be avoided. In order to further assess and reduce potentially significant impacts on the coast lily, CDFW offers the above recommendations.

CDFW PHI Recommendation 1

The botanical survey maps in THP Section V depict numbers of coast lily (*Lilium maritimum*) individuals at each location; however, it is unclear how many individuals will potentially be impacted by the proposed operations. Prior to plan approval, please revise the THP's botanical report to include the total number of coast lily individuals, per occurrence, that are proposed for direct impacts versus protected (a close estimate will suffice). Include what percentage these impacted individuals represent within the occurrence.

CDFW PHI Recommendation 2

THP Section II, Item 32 (page 94) states that coast lily populations will be flagged with native plant protection flagging, and that the LTO shall avoid excessive grading in the higher concentration areas, and as feasible, in other areas. This language is not enforceable because it lacks specificity, and the measures may be inadequate to minimize significant adverse impacts. Prior to plan approval, please revise the coast lily plant protection measures in Section II of the THP (and within the botanical report) to further specify that:

a. The outer extent (footprint) of the coast lily populations will be flagged prior to operations;

b. No harvest of trees will occur within the population flagging;

c. Trees marked for harvest will be felled away from coast lily populations to the extent feasible;

d. Heavy equipment will be limited to the running surface of the roads and skid trails, otherwise no heavy equipment will be used within 25' of the coast lily;

e. There will be no blading of roadsides or ditches within 25' of the coast lily;

f. If the running surfaces of roads are bladed, no material will be sidecast into coast lily populations;

g. There will be no herbicide used within 25' of the coast lily;

h. Within one year following operations, and while plants are dormant, any slash or debris that may have inadvertently fallen within the coast lily populations will be carefully removed using handwork; and

i. Three to five years following operations, coast lily populations will be surveyed for the introduction of noxious weeds [e.g. jubata grass (*Cortaderia jubata*), French broom (*Genesta monspessulana*), which are reported to occur in the THP]. If found, they will be removed and disposed of in a method that isolates the seed and prevents the plant(s) from spreading.

Where the above measures (2a-2i) are not feasible, the plan will be updated to clearly disclose these locations, provide a justification clarifying the lack of feasibility, and provide alternative protection measures meeting the intent of measures 2a-2i to the highest degree feasible. If the measures are updated, the measures and justification will be sent to CDFW (R3Timber@wildlife.ca.gov) for concurrence prior to operations that would utilize the new alternate protection measures.

Discussion for CDFW PHI Recommendations 3-5

Swamp harebell is categorized as moderately endangered in California (1B.2), with 20% to 80% of known occurrences vulnerable to decline, or imminent decline, due to land use practices. The species occurs in Mendocino, Sonoma, and Marin Counties, primarily within 10 miles from the coast. It is presumed extirpated from Santa Cruz County. Swamp harebell is a fragile-stemmed, rhizomatous perennial herb that can occur in the understory of mesic areas of closed cone pine forests and north coastal coniferous forests. Other swamp harebell habitat includes meadows, riparian zones within coastal prairie and freshwater wetlands, at elevations less than 500 meters. There are 155 occurrences documented in California, 46 documented in Sonoma

County, and of these in Sonoma, only 18 are documented as being stable (not under threat of extirpation). Often existing in lands proposed for timber management, the success of swamp harebell persisting into the foreseeable future requires careful management and minimization measures within timber operations.

While swamp harebell occurs in canopy openings (and may be resilient to changes in canopy), literature lacks evidence that it is resilient to all disturbance, especially involving moving soil or compaction, which can occur during timber operations. As a species associated with mesic habitats, it is critical to maintain the local terrain's hydrography and moisture conditions, when considering minimizing harvesting impacts. An early 2000s preliminary study by CDFW found substantial decline following harvest where trees were felled and skidded through populations (Valentine et al., 2016). In order to further assess and reduce potentially significant impacts on the swamp harebell, CDFW proposes the above recommendations.

CDFW Recommendation 3

The botanical survey maps in THP Section V depict numbers of swamp harebell (*Eastwoodiella californica*) individuals at each location, however, it is unclear how many individuals will potentially be impacted by proposed operations. Prior to plan approval, please revise the THP's botanical report to include the total number of swamp harebell individuals, per population, that are proposed for direct impacts versus protected (a close estimate will suffice). Include what percentage these impacted individuals represent within its population occurrence.

CDFW Recommendation 4

Section II, Item 32 of the THP (page 94) states that some occurrences of swamp harebell are protected by EEZs, WLPZs, and/or within an STZ; however, it is unclear which occurrences will receive these protections. Prior to plan approval, please revise the botanical report and associated maps to disclose this information.

CDFW Recommendation 5

THP Section II, Item 32 (page 94) states that swamp harebell populations will be flagged with native plant protection flagging and that the LTO shall avoid excessive grading in the higher concentration areas, and as feasible, in other areas. This language is not enforceable because it lacks specificity, and the measures may be inadequate to minimize significant adverse impacts**.** Prior to plan approval, please revise the swamp harebell plant protection measures in Section II of the THP (and within the botanical report) to further specify that:

a. The outer extent (footprint) of the swamp harebell populations will be flagged prior to operations;

b. No harvest of trees will occur within the population flagging;

c. Trees marked for harvest will be felled away from swamp harebell populations to the extent feasible;

d. Heavy equipment will be limited to the running surface of the roads and skid trails;

e. There will be no blading of roadsides or ditches within 10' of the swamp harebell;

f. If the running surfaces of roads are bladed, no material will be sidecast into swamp harebell populations;

g. There will be no herbicide used within 25' of the swamp harebell;

h. Within one year following operations, and while plants are dormant, any slash or debris that may have inadvertently fallen within the swamp harebell populations will be carefully removed using handwork; and

i. Three to five years following operations, swamp harebell populations will be surveyed for the introduction of noxious weeds [e.g. jubata grass (*Cortaderia jubata*), French broom (*Genesta monspessulana*), which are reported to occur in the THP]. If found, they will be removed and disposed of in a method that isolates the seed and prevents the plant(s) from spreading.

Where the above measures (6a-6i) are not feasible, please update the plan to clearly disclose these locations, provide a justification clarifying the lack of feasibility, and provide alternative protection measures meeting the intent of measures 6a-6i to the highest degree feasible. If the measures are updated, the measures and justification will be sent to CDFW (R3Timber@wildlife.ca.gov) for concurrence prior to operations that would utilize the new alternate protection measures.

Discussion for CDFW Recommendations 6-7

The THP discloses the presence of bishop pine forests (alliance-level and associations) within the THP. Bishop pine forests are considered Sensitive Natural Communities (SNC, State ranks of S1-S3) to be addressed in the environmental review process of California Environmental Quality Act (CEQA) and its equivalents [CEQA Guidelines Section15125 (c), CEQA Guidelines Appendix G (IV)]. See https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities for more information. While

there are other SNCs disclosed within the THP, bishop pine forests are currently higher priority for CDFW to comment on based on their associations with wildlife (as pine nut-bearing trees), their currently known threats (decline in regeneration, changes in fire regimes and the introduction of exotic pests and pathogens) (Potter et al., 2019), and the potential for timber management to amplify the rate of conversion to other coniferous vegetation-types. Note, impacts on *individual* bishop pine trees are not the concern, but moreover we aim to ensure the vegetation community type continues to exist across an array of age classes into the foreseeable future.

CDFW Recommendation 6

CDFW recommends the botanical report and/or Section IV of the THP include an assessment of the proposed timber operations regarding any potentially significant direct, indirect, and cumulative impacts to bishop pine (*Pinus muricata*, a Sensitive Natural Community).

CDFW Recommendation 7

Revise the THP to specify that bishop pine (mature trees or seedlings) will not be targeted for herbicide.

References

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 18 December 2023].

Flora of North America (FNA), 2023. Lilium maritimum Kellogg, Proc. Calif. Acad. Sci. 6: 140. 1875, accessed via efloras.org on 12/18/2023

Potter, Kevin M.; Conkling, Barbara L., eds. 2019. Forest health monitoring: national status, trends, and analysis 2018. Gen. Tech. Rep. SRS-239. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 168 p.

Valentine, B.; Nelson, T.; Golec, LaBanca, T., and S. Martinelli. 2016 The Response of Swamp Harebell (Campanula californica) to Timber Harvest: a Case Study. General Technical Report PSW-GTR-258