## Exhibit B

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# MONTEREY BAY

Tree Assessment and Management Plan Prepared for: Mr. Edward Whittemore Property Address: 1263 Sombria Prepared by: Monterey Bay Treeworks Assessment Date: March 13, 2024 Amended 1/13/25

## Scope of Report

Monterey Bay Treeworks was retained to evaluate the conditions of trees on the property, focusing on those that failed and those removed. Stumps (both failed and intact) were assessed on-site. The findings aim to inform a management plan to mitigate the loss of tree coverage within this 4.7-acre portion of the Del Monte Forest.

#### **Documentation Reviewed**

The following documents were provided by Mr. Edward Whittemore for review:

- 1. Monterey County Housing and Community Development Correspondence:
  - Inquiry Letter dated February 23, 2024
  - Administrative Citation dated March 14, 2024
- 2. Site Plans:
  - Detailed layout for tree assessment
  - Proposed plans for replanting and mitigation efforts

#### **Violations Identified**

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- 1. Unpermitted Tree Removal:
  - Approximately 44 protected trees were removed without securing the required permits.
  - Non-Compliance with Approved Permits:
    - The property did not adhere to stipulations outlined in previously approved tree removal permits.
    - Four non-compliance permits were resolved on 5/24/24

PLN140813_	101714.
PLN140812_	101714.
TRM150008_	031315
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## **Proposed Management Plan**

- 1. Replanting Mitigation Strategy
  - Species Selection: Use native and protected tree species to restore ecological balance.
  - Planting Density: Achieve replacement at a 1:1 ratio to comply with local guidelines for mitigation.
  - Site Preparation: Ensure proper soil conditioning, irrigation, and erosion control to promote healthy growth.

#### 2. Compliance Actions

- Work with Monterey County Housing and Community Development to address the administrative citation.
- Submit a detailed replanting proposal to satisfy requirements for compensatory planting.
- 3. Monitoring and Maintenance
  - Implement a monitoring plan to track the health, survival rates, and growth of replanted trees over a 5 year period.
  - Regularly inspect for pests, diseases, and environmental stressors, and apply necessary treatments.

#### Introduction

This report details the findings of a forest restoration assessment and presents a reforestation plan for the 4.7-acre property located in the Del Monte Forest. The property primarily contains mature trees of Pinus radiata (Monterey pine) and Quercus agrifolia (coast live oak), with additional plantings of Hesperocyparis macrocarpa (Monterey cypress) and Sequoia sempervirens (coast redwood) in its southern portion. The understory includes native grasses such as Calamagrostis nutkaensis, Juncus effusus, and Olympus glaucus.

The region has been affected by fire suppression and development, contributing to an unnaturally dense and unhealthy forest structure. Recent severe weather has further impacted the local forest composition, increasing the need for active restoration.

Key Concepts in Forest Restoration and Reforestation

- 1. Forest Restoration: Involves a range of activities to return a forest to a healthy, balanced state.
  - Goals: Control invasive species, maintain tree diversity, and restore natural forest composition and structure.
  - Includes pruning, underbrush management, and enhancement of native flora.
- 2. Reforestation: Focuses on regenerating tree cover after significant forest loss due to natural or human-caused events.
  - Involves planting trees to complement natural regeneration, which is becoming less effective due to the climate crisis.
- 3. Challenges on the Monterey Peninsula:
  - Fire suppression over the last century has led to over-dense stands of trees, limiting natural regeneration.
  - Increasingly severe weather patterns, including drought, storms, and pest outbreaks, necessitate proactive intervention.

#### Site Assessment

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Observations

- 1. Tree Composition and Stand Health:
  - Mature Pinus radiata and Quercus agrifolia dominate the site.
    - Hesperocyparis macrocarpa and Sequoia sempervirens are concentrated in the southern portion.
- 2. Understory and Ground Cover:
  - Healthy growth of native grasses: Calamagrostis nutkaensis, Juncus effusus, and Olympus glaucus.
- 3. Forest Structure:

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- Dense stands of mature trees resulting from fire suppression have limited natural regeneration.
- 4. Weather and Environmental Impacts:
  - Severe storms and changing climate conditions have stressed the existing forest, increasing vulnerability to disease and pests.

#### Methods and Limitations

This assessment was conducted over three site visits and included a review of documents provided by Mr. Whittemore. No additional external information or environmental tests were used. Observations are based on walkthrough assessments and available documentation.

Ongoing meetings with Assistant Planner, Christina Vu. Per her request on 12/10/24 this report has been amended to meet the current updated request.

Per the request of Hya Honorato on 3/25/25, the report has been amended to include changes to the restoration portion of the report.

#### **Reforestation Plan**

1. Tree Planting

- Species Selection: Prioritize native species resilient to climate variability, including Pinus radiata and Hesperocyparis macrocarpa per monterey County.
- Planting Density: Follow a 1:1 replanting ratio to compensate for removed trees and restore the canopy.
- 2. Understory Management
  - Remove invasive species and underbrush to reduce competition for water and nutrients.
  - Encourage the growth of native grasses and shrubs to support biodiversity and prevent soil erosion.
- 3. Fire Risk Mitigation
  - Implement fuel reduction strategies, including thinning over-dense stands and pruning lower branches.
  - Create defensible space around structures and pathways as per local fire regulations.
- 4. Monitoring and Maintenance
  - Monitor replanted trees for survival, growth, and pest resistance over a 5 year period.
  - Conduct periodic thinning and pruning to maintain forest health and reduce fire risks

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#### Forest Management Plan

Goals

- 1. Enhance forest health and diversity.
- 2. Reduce potential hazards to the structure and surrounding areas.
- 3. Support the natural regeneration of Pinus radiata and introduce diverse species for long-term ecosystem resilience.
- 4. Ensure compliance with Monterey County HCD regulations.
- Key Strategies
- 1. Tree Removal and Replacement
  - Remove high-risk and decayed stumps within the 100' radius to mitigate hazards.
  - Replace removed trees with native species:
    - Pinus radiata (Monterey pine)
    - Monterey Cypress (Hesperocyparis macrocarpa)
  - Include species tolerant to future climate stressors.
- 2. Diverse Succession
  - Introduce trees at various stages of growth to create a balanced forest structure.
- 3. Ecological Restoration
  - Promote natural regeneration of Pinus radiata seedlings in less densely populated areas.
  - ° Manage invasive species to reduce competition with native plants.
- 4. Habitat Enhancement
  - Retain selected snags and fallen logs to support wildlife habitat.
  - Maintain understory vegetation, including native grasses and shrubs, to promote ecosystem health and prevent soil erosion.
- 5. Fire Risk Mitigation
  - ° Remove ladder fuels and prune lower branches of remaining trees to reduce wildfire risk.
  - Thin overly dense areas to improve airflow and tree health.
- 6. Long-Term Monitoring and Adaptive Management
  - Regularly monitor the forest's response to implemented measures.
  - Adjust strategies based on observed outcomes, changes in environmental conditions, and emerging challenges.

#### **Proposed Action Plan**

Immediate Actions

- 1. Remove the uprooted stumps and address the risk posed by other decayed 7 stumps within the priority area.
- 2. Plant properly selected tree species in place of removed stumps.
- Medium-Term Actions
- 1. Develop a structured planting schedule to introduce diverse species and promote natural propagation.
- 2. Implement habitat and fire risk mitigation measures.

Long-Term Actions

- 1. Conduct biannual monitoring to evaluate tree health, growth, and survival rates.
- 2. Report findings and adapt management strategies as needed to ensure compliance with HCD regulations.

#### **Observations of Natural Regeneration**

#### Natural Seedling Development

During property walkthroughs, multiple Monterey pine (Pinus radiata) seedlings were observed in the eastern and western portions of the property. These seedlings are thriving in open spaces within the remaining stand of Monterey pines, where the following conditions favor their development:

- Lower water table: Provides optimal soil moisture without saturation.
- Suitable soils: Promote healthy root growth and nutrient uptake.
- Preservation of Genetic Diversity

Encouraging the growth of these native seedlings is essential for maintaining the genetic diversity of the Monterey pine stand. These naturally propagated trees are well-adapted to the specific conditions of the site, making them more resilient to environmental stressors and contributing to the ecological balance of the forest.

#### **Reforestation Plan Requirements**

#### Tree Replacement Mandate

The County of Monterey Housing and Community Development (HCD) requires the replanting of trees to compensate for those removed. Based on the property assessment, a total of **44** trees will be included in the reforestation plan:

- 1. 7 Monterey pine 5 gallon, 10 Monterey pine (cells), 24 Monterey pine naturally regenerating on site .
- 2. **3 Monterey cypress 5-g**allon

Compliance with Monterey County regulations and to achieve the required total of **44** replaced trees. Planting Plan

Recommended Tree Species

- Pinus radiata (Monterey pine) To maintain continuity of the existing forest.
- Hesperocyparis macrocarpa (Monterey cypress) Adds structural and habitat diversity.
- Planting Strategy

• Eastern Portions of the Property: Support the natural propagation of the Monterey pine seedlings by managing competition (e.g., removiing invasive plants and improving soil conditions if needed

## Summary of Observations and Findings

Assessment of Stumps

- Objective: To determine if trees were prematurely removed.
- Findings:
  - Whole Tree Failures: Several stumps, both onsite and on adjacent properties, showed signs of complete failure due to recent severe storms.
  - Contact with Structures: One large stump was documented as having caused significant damage to the house.
  - Decay Presence: Multiple stumps showed moderate to advanced decay at the root crown, indicating they were in poor health or at risk of failure.
  - Fractured Canopy: The surrounding forest canopy is fragmented due to current and past storm events, contributing to tree decline and increased vulnerability.
  - Premature Removal: While tree health and structural integrity varied, it can be determined from the stumps onsite that 44 trees were removed prematurely.

## Forest Health and Risk Mitigation

The trees onsite are predominantly over-mature, declining, and at risk of failure, posing hazards to property and people. Removing weakened or diseased trees improves forest health by:

- Reducing the spread of disease and pests to healthy trees.
- Creating space for regeneration and growth of native species.
- Enhancing safety for residents and property by reducing the risk of falling trees.

#### Reforestation and Landscape Recommendations

Replanting Plan

- Tree Count: A total of 44 trees will be included in the reforestation plan.
  - 41 Monterey pine seedlings onsite will be planted and monitored to comply with Monterey County.
  - **3 Monterey cypress** trees will be planted to comply with Monterey County Resource Management Agency requirements.

Tree Selection and Placement

- Species Recommended:
  - Pinus radiata (Monterey pine) Native and adapted to site conditions.
  - Hesperocyparis macrocarpa (Monterey cypress) Adds structural diversity.
- Understory Recommendations: Incorporate native grasses and shrubs compatible with the forest ecosystem to support biodiversity and prevent soil erosion.

Five-Year Program

- Monitoring: Quarterly assessments during the first year by a qualified professional to inspect tree health, growth rates, and overall forest development. The second and third years each will require a once annual assessment. At the end of five years, a final assessment is recommended for consultation only, to the property owner, but is not required by the county
- Management Practices:
  - Ensure proper irrigation for newly planted trees during establishment.
  - Protect young trees from pests and herbivory with guards or fencing.
  - Manage invasive species and promote natural regeneration processes.

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#### **Forest Stand Condition**

The stand of Monterey pines (Pinus radiata) at 1263 Sombria Lane is in a state of over-maturity and senescence. The combined effects of urban development, natural occurrences, and climate variability have restricted the forest's ability to regenerate, resulting in suppressed flora and fauna.

- Soil Characteristics:
  - Classified as Narlon (loamy fine sand, 2-9% slopes), the soils in the area are derived from clayey marine deposits and are somewhat poorly drained.
  - Root penetration is restricted to the parent material, with depths averaging 18-24 inches, typical for Monterey pine in poorly drained conditions.
  - Saturated soil conditions with standing water were observed around failed trees, indicating insufficient drainage and poor oxygen levels.
- Root System Observations:
  - Failed Monterey pines displayed flat, poorly developed root systems typical of shallow soils with high water tables.
  - Larger roots (3-4 inches in diameter) showed moderate to advanced decay, consistent with over-saturation.
  - Root Crown Decay: Seven stumps exhibited visible signs of decay, confirming systemic health issues starting in the root system and advancing up the trunk.
- Understory and Vegetation:
  - Current vegetation is indicative of high water tables and boggy soil conditions:
    - Juncus effuses (Common rush): Thrives in standing water.
    - Calamagrostis nutkaensis (Pacific reedgrass): Found in seasonally or permanently saturated habitats.

#### **Climate and Environmental Impacts**

- Recent record-setting winter storms and climate change have significantly altered the hydrology of the Monterey Peninsula, contributing to soil saturation and poor drainage.
- These conditions have further stressed an already over-mature stand of trees, increasing the risk of failures.

#### **Monterey Pine Forest Dynamics**

Monterey pine forests are naturally suited to deep sandy loam soils with good drainage, often found on sloping terrain. The current soil profile at 1263 Sombria does not align with these ideal conditions, exacerbating forest health issues. Healthy Forest Composition

- Soils under healthy Monterey pine stands typically feature a thick organic layer supporting:
  - Shaggy bark manzanita (Arctostaphylos tomentosa)
  - California huckleberry (*Vaccinium ovatum*)
  - Poison oak (Toxicodendron diversilobum)
  - Bush monkey flower (*Mimulus aurantiacus*)

These species contribute to approximately 40% of the understory and provide critical habitat and biodiversity.

#### **Decline Factors**

- At approximately 65 years, Monterey pine stands naturally experience reduced density due to competition, disease, and slow growth.
- Restricted root systems, poor drainage, and high water tables further accelerate decline and increase vulnerability to failure.

#### **Closing Statement**

A biological report was submitted by Thompson Wildland Management (TWM) to Mr. Edward Whittemore on February 28, 2025. The restoration plan within the arborist report by Monterey Bay Treeworks recommends using native stock for tree replacement, removing exotic species, and conducting yearly monitoring to document the success of tree plantings and the removal of non-native species. The restoration project will be monitored quarterly during the first year and annually for the following three years to ensure its effectiveness.

In conclusion, adhering to proper guidelines and recommendations for tree removal and replanting is vital to prevent similar incidents in the future. The Whittemores are demonstrating responsible stewardship of their property by committing to the recommended replanting program and prioritizing the safety and health of their land and the surrounding ecosystem.

By completing the replanting of 44 trees, the Whittemores will meet the requirements set forth by the Monterey County Resource Management Agency. This effort not only addresses compliance but also contributes to restoring the natural balance, biodiversity, and resilience of the local forest ecosystem.

To further enhance the landscape, it is also recommended to incorporate a diverse understory of native and compatible plant species. This will support soil health, improve habitat for wildlife, and complement the new tree plantings. Encouraging the natural propagation of existing Monterey pine seedlings, alongside replanting efforts, will preserve the genetic diversity of the stand and contribute to its long-term vitality.

Finally, it is recommended to implement a five-year program with recommended monitoring by a qualified professional. This will ensure the successful establishment and growth of the replanted trees, maintaining the beauty and ecological health of the landscape for years to come.

By taking these proactive measures, the Whittemores can help ensure a thriving forest ecosystem while safeguarding their property and contributing to the broader environmental health of the Monterey Peninsula. Monterey Bay Treeworks will remain available to provide professional guidance and support throughout the reforestation and monitoring process.

Native seed is often considered better than nursery stock because it promotes greater genetic diversity within a plant population, is better adapted to local soil and climate conditions, supports native wildlife through food and habitat, and generally requires less maintenance like watering and fertilization compared to cultivated varieties found in nurseries; essentially, using native seed helps maintain a healthy ecosystem by supporting the natural plant communities in a region.

#### Key points about native seed vs. nursery stock:

• Genetic diversity:

Nursery stock often consists of cultivars bred for specific traits, which can lead to reduced genetic diversity, while native seed represents a wider range of genetic variations within a species, making them more resilient to environmental changes.

• Local adaptation:

Native plants have evolved to thrive in their specific soil conditions and climate, requiring less supplemental care compared to non-native plants from nurseries.

• Wildlife support:

Native plants are essential food sources and habitats for local wildlife, including insects, birds, and mammals, which can decline when non-native plants are dominant.

• Environmental benefits:

Using native seed can help manage stormwater runoff, reduce erosion, and improve soil health due to their deep root systems.

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A mixed forest is generally considered better than a monoculture because it offers greater biodiversity, resilience to pests and diseases, improved carbon sequestration, and a wider range of ecosystem services compared to a single-species plantation, making it more sustainable in the long run.

Key points about mixed forests:

• Biodiversity:

Mixed forests support a wider variety of plant and animal life due to the different tree species present, creating a more diverse ecosystem.

• Resilience:

Different tree species can have different tolerance levels to pests, diseases, and environmental stresses, making a mixed forest less vulnerable to large-scale damage.

• Carbon storage:

Studies show that mixed forests can store more carbon than monocultures due to the complementary root systems and canopy structures of diverse species.

• Soil health:

A mix of trees can contribute to better soil health by utilizing nutrients at different depths and improving soil structure.

Drawbacks of monoculture:

• Vulnerability to pests and diseases:

When only one tree species is present, a single pest or disease outbreak can significantly impact the entire forest.

- Reduced biodiversity:
  - A monoculture supports fewer plant and animal species compared to a mixed forest.
- Less resilient to climate change: A single tree species may not be able to adapt as effectively to changing climate conditions as a mixed forest.





	SPECIES	COMMON	REMOVED	FAILED	REPLANTED	SIZE
•	Pinus radiata	Monterey pine	41		• 41	(7) 5-gallon (10) cell
•	Pinus radiata	Monterey pine		13		(24) natural
•	Hesperocyparis macrocarpa	Monterey cypress	3			
•	Hesperocyparis macrocarpa	Monterey cypress		3	• 3	(3) 5- gallon
	TOTAL		44	16	44	

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Failed trees on west property line



Failed trees on NW corner property line

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Failed trees on house and at entrance to property



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Failed trees NE property line.



Rootballs of failed trees exhibit low soil volume and high water table.



This failed tree developed in saturated soils as indicated by this supporting buttress root with advanced decay. This was noted on other failed trees as well

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High risk of failure trees

These 4 trees remain onsite and should be removed.





Dead and damaged trees.



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These stumps were in a poor location located too close to infrastructure.



These trees would have caused future damage to driveway. Replacing with a proper tree selection and placement will allow for the longevity of the tree with no impacts to hardscape.









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The stand is mature and senescing. This fractured canopy on the east side provides open space and proper soil for establishment of current seedlings and placement of planting Monterey pines.





Monterey pine seedlings are visible throughout this area and should be encouraged to develop.

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Coast redwood will develop here with adequate space for rooting and canopy development. This tree has a wide spreading canopy and will fill space accordingly.



With proper spacing, Monterey cypress will replace and develop a natural stand on the northwest side without raising concerns of safety for the house.

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Young Coast redwood are developing well onsite. This is a recommended tree for replacement.

Coast live oak develop within the front of the property and is recommended for low canopy tree replacement in this area.

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**Certifying Statement** 

I, Albert Weisfuss, certify that:

- I have personally overseen the inspection of this tree and property referred to in this report, and have stated my findings accurately.
- I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved. The opinions and conclusions stated herein are my own. •
- My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party. •

Albertabusques

Albert Weisfuss

December 11, 2024

Date

Amended 1/13/25

Amended 3/30/2025

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#### Success Criteria:

A tree planting effort will be deemed successful if a minimum 85% survival rate is maintained across all planted and naturally propagated trees over the five-year monitoring period.

- If a tree (seedling or purchased) dies during this period, it must be replaced.
- A naturally propagated seedling may be replaced with a purchased cell 6" tree.
- A purchased 5-gallon tree must be replaced with another 5-gallon tree of the same species.
- Each replacement restarts its individual five-year monitoring period.

#### Growth Benchmarks (Optional but recommended for added accountability):

- Year 1: Establishment with visible signs of healthy leaf production and no major pest/disease.
- Year 3: Minimum of 30% increase in height or trunk caliper from initial measurement.
- Year 5: Demonstrated healthy canopy growth, root establishment, and overall vigor; no signs of decline.

#### **Contingency Measures:**

In the event of tree failure (death), a new replacement tree will be installed as soon as feasible. This triggers a restart of the fiveyear monitoring period for the replacement tree.

#### **Spacing Requirements:**

To prevent overcrowding and ensure optimal growth:

- Minimum spacing between planted trees must follow these guidelines:
  - Small trees (<25 ft mature height): 10–15 ft apart
  - Medium trees (25–40 ft mature height): 15–25 ft apart
  - Large trees (>40 ft mature height): 25–40 ft apart
- Trees must be spaced to allow unobstructed root and canopy development, avoid shading younger plants, and reduce competition for water and nutrients.
- Adjust spacing based on species-specific growth habits and site conditions.

Per the request of: Hya Honorato Assistant Planner HCD

Amendment to report for: Ed Whitmore 1263 Sombria.

Albert Weisfuss 04/14/25