



Fiscalini Ranch Preserve Forest Health Goals

Proposed treatments will thin understory vegetation and treat dead and dying trees to improve forest health and fire resilience. Monarch overwintering sites have treatments designed to maintain or improve habitat quality, while maintaining overall forest health objectives.

Forest health treatments will promote the health and vigor of Monterey pine forests through:

- Retaining a forest of healthy Monterey pines, oaks and a mosaic of understory species to support diverse communities of plants and animals including habitat features like standing snags, downed wood, and forest openings.
- Reducing the number of dead, dying, and diseased Monterey Pine trees, including concentrations of smaller and deformed Monterey pines, to reduce hazardous fuel concentrations.
- Increasing healthy Monterey pine natural regeneration including planting Monterey pine in areas lacking adequate regeneration.

Treatment Prescription and Specifications

Forest health treatments will be achieved utilizing hand crews and tracked chippers to treat forest material. General forest health treatment prescriptions will adhere to the following specifications:

Chipping and Thinning Specifications (55 ac.)

- a. All live, healthy trees $\geq 6"$ DBH shall be retained, including pines and oaks unless they are irreversibly diseased, dead, dying or present a hazard to crews of the public.
 - i. An average overstory spacing of approximately 8' reflects a desired stand condition but shall not be achieved through removal of otherwise healthy trees ≥ 6 inches DBH
 - ii. Treatment of trees $\leq 6"$ DBH shall focus on reducing competition and ladder fuels and targeted under the drip line of larger, more established trees
 - iii. Retention of some small trees $\leq 6"$ DBH shall be retained to maintain regeneration and age-class diversity
 - iv. Within the $\leq 6"$ size class, retain healthy, vigorous trees. Where removal is necessary, select diseased or damaged individuals first
 - v. In areas of dense regeneration, thin seedlings and saplings to approximately 2-4' spacing to reduce competition, while retaining structural variability to support age class diversity
 - vi. Limb retained conifers 5'-8' to reduce ladder fuels, keep limbed height variable to
 - viii. maintain natural appearance.
 - vii. While management is focused on promoting the health and resilience of Monterey pine, retain native oak species to maintain species diversity and ecological function. Limit oak removal to instances where it is necessary to meet fuel reduction or safety objectives.
- b. Understory Vegetation and Shrub Treatments

- i. Maintain a component of native shrub species in a mosaic pattern leaving root systems intact; retain combined shrub crowns 15-25 feet wide should be spaced 20-30 feet apart in contiguous areas outside of the drip lines of trees
 - ii. Retain coffeeberry and toyon to the extent possible over poison oak
 - iii. Native shrubs can be cut further than a 20-30 foot distance apart if
 - 1. Necessary for access or safety.
 - 2. Damaged by treatment activity or equipment.
 - 3. As directed by retention flagging or Project Management team.
 - iv. No hydrophytic species should be removed (fern, carex spp. rushes, elderberry).
 - v. Native forbs, grasses, monkey flower and low-lying species shall be retained to extent feasible
- c. Limit disturbance at access points from trail/road systems. Chippers may track as needed to access inner treatment locations. It preferred to have light tracking throughout and not have concentrated access points
- d. Dead/dying/diseased removal
 - i. Cut dead, dying or severely diseased trees up to 16" DBH within treatment area interior.
 - ii. Cut and treat hazard trees of any size along trails or near homes unless specifically retained for habitat.
 - iii. Treat downed material up to 12" treat/remove with chipper
 - iv. Cut weight bearing limbs on ≥12" boles of downed trees to promote contact with forest floor to expedite decomposition
 - v. Retain at least 1-3 larger snags per acre, or those with wildlife use.
 - vi. Retain at least one stove pipe per acre
 - vii. Legacy dead and dying standing trees will be retained for future snag habitat
 - viii. Retain at least 1-4 logs equal or greater than 12 inches DBH and 15 feet in length shall be retained per acre. Favoring the largest logs for beneficial wildlife habitat.
- e. Treated Material for Interior Treatment Areas
 - i. Chip depth should not exceed 6" depth and have an average depth of ~ 3".
 - ii. Chip downed material up to 12" in diameter.
 - iii. Cut and treat trees hung up or leaning into other trees as allowed by safety.
- f. Treatment Along Trails and Roads
 - i. For treatment along trails/roads: The goal is to have no chips cast within 50' walking areas.
 - 1. Chippers may utilize roads for access.
 - 2. Material shall be pulled from treatment area for minimum of 50' to chipper. Chipped material can be broadcast onto trail or road up to 12" deep; or chipped into piles along trails or roads. No chips are to be broadcast into the 50' zone along trails or roads.
- g. Lop and Scatter Specifications
 - i. Where chipping is not feasible or possible, lop and scatter cut vegetation including material less than 8-10 inches DBH unless otherwise specified
 - 1. Along roads and trails lop to 12" depth max depth.
 - 2. Interior locations lop to 18" max depth.
- h. Wildlife Protection Measures
 - i. Protection buffers for special-status wildlife species will be determined on a case-by-case basis by the qualified biologist or RPF.

- ii. Wood rat nests receive a 5-10 foot “no cut” buffer at minimum. Trees and other vegetation shall not be felled into the woodrat buffer.

Monarch Overwintering Stands Treatment.

Core zone treatments and Shelter zone treatments (100') buffer on cores are outlined below.

Within the project area, overwintering sites were identified, utilizing recorded clustering locations available from Xerces. A roughly 100ft buffer was digitized around the known cluster trees' locations. This is the area of highest conservation priority and is very sensitive during the overwintering season (~October- February). Therefore, recommended guidelines for vegetation management activities are given for the core zone, and separately for the less sensitive shelter zone surrounding it.

Core Zone Guidance by Management Activity (~2 acres)

- All vegetation management work in the core zone should be suspended when monarch clusters are present during the overwintering season (~October-February). A monarch specialist or biologist should survey the area and confirm monarch cluster absence if work within the core zone is absolutely necessary during the overwintering season.
- Trees that have been used for clustering should be marked with a tree tags to ensure hand crews and personnel do not accidentally trim, cut, or damage them if they are live.
- Tree thinning and removal of standing trees of any diameter possessing living foliage is not advised unless a tree is identified as an imminent hazard to property or personnel through a tree hazard analysis protocol. An exception is dead, leaning trees which are at risk of damaging other trees; these should be assessed for benefits/risks of removal on a case-by-case basis.
- Removal of downed trees, through bucking, lop and scatter, and other mechanical methods to reduce fuel load is encouraged outside of the overwintering season.
- Control and removal of invasive species such as French Broom are also encouraged outside of the overwintering season.
- Tree trimming and reduction of ladder fuels such as branches can be conducted within the core zone outside of the overwintering season, if branches above ~10 feet off the ground are not removed.
- Pile and broadcast burning can be conducted, if necessary, outside of overwintering season (March-September), but should not occur directly under known cluster trees, as monarch clusters break up or drop to the ground when exposed to heavy smoke (Brower and Malcolm, 1991).

Shelter Zone Guidance by Management Activity (~5 acres)

- Control and removal of invasive species such as French Broom is encouraged.
- Removal of dead and dying trees, succumbing to pathogens and removal of other ladder fuels using hand crews and mechanical techniques is encouraged. However, see below recommendations on use of heavy machinery and thinning of living trees.
- Thinning through the removal of small diameter live trees (up to 6" diameter for FRP) and understory vegetation in the shelter zone is acceptable, with the following guidance. Retain a portion of existing small diameter trees to maintain a diversity of age classes within the grove. This will provide redundancy of wind and other protections in the grove in case other large gaps may form due to age or storm damage in future seasons.

- Use of heavy machinery should not be harmful to the integrity of the overwintering site as a whole. However, its use should be avoided within a 100 ft radius from the center of the core zone when clustering monarchs are present during the overwintering season (October-February). This 100ft Buffer zone is shown on the provided map.
- Prescribed pile and broadcast burning to further remove additional understory and dead, dying and diseased trees is recommended, as needed. Burning should be avoided if possible, during the overwintering season (October-February). If burns must be conducted during the overwintering season, they should be completed following a smoke mitigation protocol, attached.
- Select herbicide application to control invasive forbs/shrubs implemented as described in the proposal and following state and federal guidelines should pose a low risk to monarchs.