

VII. Replanting and Replacement Standards

Policy 7.4.4.4 Option A addresses retention and replanting mitigation standards for oak woodland removal. Policy 7.4.4.4 Option B is a fee-based mitigation option that includes, as part of the fee total, a nominal amount for replanting. The oak woodland replanting and replacement standards in this section apply to both options.

The replanting and successful propagation of oaks typically require substantial effort during at least the first 3 to 4 years of growth. Whether it is Option A on-site replacement, or a form of off-site mitigation involving restoration, replanting, and replacement, both are subject to County evaluation and approval. Acceptable sites generally are those where healthy oak woodlands exist or have the potential to exist.

Site potential to support healthy oak woodlands will be examined through soil type and aspect. A GIS query will be performed on existing oak woodland, soil map unit, and aspect. Those combinations of soil types and aspects that are known to support oak woodlands will be accepted as potential sites for replanting and replacement. Additional resources such as historic records can be considered. Examples of historic records include photographs that show where oak woodlands were present.

A. Replanting and Replacement Standards

Replanting and replacement standards are as follow:

- A combination of saplings, seedlings, and acorns may be planted as recommended by a certified arborist, registered professional forester, certified rangeland manager, or qualified biologist;
- 200 trees (or planting sites if acorns) per acre (based on Standiford et al., 2002);
- 3 acorns per planting site (based on McCreary, 2001);
- 1 acorn per planting site if pre-germinated;
- High management intensity:
 - Complete weed control for 3 years
 - Refer to Appendix H for Guidelines for Maintenance, Restoration, and Rehabilitation of Oak Woodlands and How to Grow California Oaks (McCreary, 1995)
- Local source (same geographic area and general environment as planting site); and
- Same species composition as naturally occurs in geographic area and general environment (including soil type).

The UC Cooperative Extension or County Agriculture Department can provide information to assist revegetation and restoration activities. Section XI.D (Sources of Information for Landowners) provides contact information for these and other sources of information.

B. Thinning Standards

The number of planted trees per acre needed to achieve 10% canopy cover within 10 years is higher than would occur in naturally regenerated mature woodland. If natural thinning does not occur, then the plantings may become too dense after several decades. Trees could be at a higher risk of disease or infestation, the fire danger could increase beyond an acceptable level, and wildlife values may not fully develop. Registered professional foresters, certified rangeland managers, certified arborists, and qualified biologists can provide guidance on thinning plantings. Thinning activities must comply with County guidelines and ordinances. Standards for thinning plantings are as follow:

- Oak woodlands must remain distributed across the original planting acreage;
- A mix of size classes (and species) shall be retained including saplings for regeneration and large oaks for high wildlife value;
- Consider fire safety when thinning (see, for example, the following sources);
 - Guidelines for defensible space (State Board of Forestry and Fire Protection, 2006)
 - Wildfire protection plan guidebook (Katelman, et al., 2007)
 - Fire Safe Council of El Dorado County website (<http://www.edcfiresafe.org>)and,
- Large snags (≥ 24 " DBH preferred but no less than 12" DBH) should be retained for wildlife. The desired snag density will vary with the type of oak woodland; however, one snag per every 1-5 acres should be a target. Large trees (>24 " DBH) with large dead branches and trunks can achieve some of the same wildlife values.

Thinning for Fire Safe purposes needs to consider both the General Plan Safety Element and the General Plan Open Space Element that includes oak woodland conservation. Where a conflict exists between fire safety and oak woodland conservation, this OWMP provides that fire safety take precedent as determined by a qualified professional. Defensible space standards are necessary for public safety, and proper planning will reduce potential for conflicts between those General Plan elements.

Policy 7.4.2.9 indicates that fire safe measures are exempt from habitat conservation policies, "except that Fire Safe measures will be designed insofar as possible to be consistent with the objectives of the Important Biological Corridor."

C. Deed/Covenant for Replacement Plantings

On-site replacement plantings and off-site restoration plantings that fulfill Policy 7.4.4.4 mitigation requirements shall be placed under a deed of restriction or other recorded covenant that remains with the property in perpetuity.

D. Concerns over Replanting Success

The effectiveness of plantings for mitigation is limited, as demonstrated in a study that used data from 10-year-old plantings to model the development of blue oak stand structure attributes over 50 years (Standiford et al., 2002). After 50 years, trees in planted stands were still small, and the wildlife habitat quality was not equivalent to that of mature oak woodland. This study emphasizes the need for a comprehensive approach to mitigation and to not solely rely on replantings of oak woodlands.