



July 26, 2018

To: Pete Calarco, Assistant Director, Development Services, Butte County

From: Angela Moskow, California Wildlife Foundation/California Oaks

RE: Draft Butte County Oak Woodland Mitigation Ordinance and Oak Woodlands Technical Manual

Thank you so much for reaching out to California Wildlife Foundation/California Oaks, as well as local stakeholders, during the development of the Oak Woodland Mitigation Ordinance and Oak Woodlands Technical Manual. We very much appreciate the opportunity to provide the input contained in this memo and attachment.

ORDINANCE

Applicability of the ordinance to agricultural lands: We understand that the ordinance is being drafted as a means for Butte County to develop procedures for discretionary projects, so that the impact review and mitigation of projects with oak impacts does not require case-by-case environmental review. We also understand that the ordinance is shaped by the provisions of California Public Resources Code 21083.4. Nonetheless, we suggest that the provisions of the ordinance apply to agricultural lands for the reasons articulated below:

Although California Public Resources Code 21083.4 states that agricultural conversion of oak woodlands are exempt from California Environmental Quality Act (CEQA), these lands are not exempt from CEQA's required analysis of the Greenhouse Gas (GHG) impacts of the conversion to agricultural acreage. Net present value of greenhouse gas emissions forms the foundation of the state's greenhouse reduction objectives, as well as the California Forest Protocol preservation standards. Every ton of carbon dioxide (CO₂) released into the atmosphere by oak woodland or forest conversion—alongside the loss of the woodland's or forest's role in carbon sequestration—represents a measurable potential adverse environmental effect, which is covered by CEQA. Thus California requires the analysis and mitigation of greenhouse gas emissions associated with proposed oak woodland or forest conversions.

We offer that current climatic trends, including net emissions from California's natural areas, make it imperative that the ordinance is protective of ongoing carbon sequestration in Butte County's working landscapes. Standing trees and associated soils sequester carbon while providing habitat, watershed, and other important ecosystem benefits. Oak woodlands have a productive understory of grasses that support approximately 60% of California's rangelands. Further, acorns are a highly nutritious food source for livestock. It is vital that these oaks remain standing and regenerate.

Further, we suggest that the next iteration of Butte County’s Climate Action Plan include discussion about the importance of keeping trees standing in agricultural settings. In *Soil Carbon Pools in California’s Annual Grassland Ecosystems*, the authors note:

...Sites that contained woody plants at the time of sampling consistently had high soil C (carbon) pools, even when controlling for temperature and precipitation. Oak woodlands and wooded savanna make up a significant proportion of the rangelands in California (Griffen 1977). These ecosystems are characterized by tree islands in a grassland matrix. Oak understories tend to have higher soil C and nutrient pools and lower bulk densities than the surrounding grasslands (Dahlgren et al. 1997). Oaks have greater rooting depth than grasses, providing an important contribution to deep soil C. These ecosystems may also be better at retaining C over time due to more complete use of seasonally available water (Ma et al. 2007).¹

In the research paper, “Soil Organic Carbon Stability Across Mediterranean Oak Agroecosystem,” which was delivered at the Seventh Symposium on Oak Woodlands: Managing Oak Woodlands in a Dynamic World, Leslie M. Roche et al. found total soil organic carbon to be positively correlated with woody plant cover. The authors also found the carbon stores can be quickly degraded and lost upon removal of woody cover: “Although there is considerable potential for carbon sequestration with woodland conservation and restoration, these carbon stores are not more resilient to disturbances than grassland carbon pools and can be quickly degraded and lost upon oak removal.”²

In the chapter on Watershed Management in Oak Woodlands of *A Planner’s Guide for Oak Woodlands* the authors speak about oak trees creating “islands of enhanced soil fertility... The result is deposition of two or three times more organic matter under an oak canopy and 35 to 40 percent more organic carbon and nitrogen in soils under an oak canopy than in grassland soils.”³

Section XX9 Oak Woodland Evaluation Plan. The County of San Luis Obispo maintains a listing of qualified individuals to prepare Oak Management Plans as part of the Oak Ordinance, which was enacted in 2017. Contact information is in the first attachment.

Section XX10 Impacts. Consideration should be given to the question of whether 24-inches is a sufficiently protective metric for blue oaks since the trees grow so slowly. Perhaps a lower figure could be used for blue oaks.

B and C. Discussion of removal of up to 70% of canopy: Butte County's Oak Woodland Assessment Report calls for maintaining a 30% canopy. We commend the county for reflecting similar language in the ordinance. We recommend that the language of the ordinance, which in the current draft allows no more than *70% removal*, be modified to reflect goal of the

¹ Whendee L. Silver, Rebecca Ryals, and Valerie Eviner, *Rangeland Ecology and Management* 63:128–136. January 2010. DOI: 10.2111/REM-D-09-00106.1, Page 113.

² Roche, L.M., Chang, J.F., Six, J. O’Geen, A.T., Tate, K.W. An abbreviated version of this paper was presented at the Seventh California Oak Symposium: Managing Oak Woodlands in a Dynamic World, US Forest Service, Pacific Southwest Research Station, held in Visalia, CA. November 2014. Page 227.

³ Edited by Giusti, G.A., McCreary, D. D., and Standiford, R.B. Chapter authors: Larsen, R., Lewis, D., and Valachovic, Y. *A Planner’s Guide for Oak Woodlands*, Second Edition, University of California Agriculture and Natural Resources Publication 3491. 1993, rev. 2005. Page 35.

maintenance of a 30% canopy (otherwise, removals will potentially result in much lower canopies, especially for lands in which oak removals occur over a number of years). We also encourage the Butte County to consider greater protections than the 30% threshold, which was recommended by UC Cooperative Extension before warming climactic trends were fully understood.

XX-12 Replacement Ratio: Please find attached a document that summarizes some of the provisions of Santa Barbara County's tree removal ordinance, along with contact information for the county. Note the very high replacement ratios required.

Other Considerations: Is Butte County interested in including language in the ordinance to maintain the natural resource values on slopes of a certain percentage where oaks grow to prevent erosion and to protect waterways? Perhaps there are zoning regulations that address this.

TECHNICAL MANUAL

A second document, which may be of interest, is a publication developed through the Willamette Oak Accord process. It is too large for us to attach, but it may be downloaded at: <http://willamettepartnership.org/oak-habitat-metric-user-guide-calculator/>. We recommend it because it provides a means of linking oak conservation with habitat quality.

We appreciate your of review of our comments.



INFORMATION FROM SANTA BARBARA AND SAN LUIS OBISPO COUNTIES REGARDING OAK ORDINANCES

Santa Barbara County: Tree removal ordinance (Sections of possible interest are included.)

Also see: https://qcode.us/codes/goleta/view.php?topic=15-15_09-appx_a_grading_ordinance_guidelines_for

Where deciduous oak tree removal requires a permit under this ordinance, the following standards shall be adhered to:

1. The preparation and implementation of an Oak Tree Management Plan for the lot on which the oak tree removal will take place and any lot used for off-site replacement shall be required. The Management Plan shall be prepared or endorsed by the Oak Tree Specialist. The plan shall:

- a. Demonstrate how the mix of deciduous oak tree savannas, woodlands, and forests on the lot will be preserved, created, enhanced, restored, and maintained, so that:
 - (1) The removal of protected oak trees does not divide the remaining savanna, woodland, and forest habitats into small, isolated fragments.
 - (2) Protection, maintenance, restoration, and enhancement of large blocks of savanna, woodland, and forests are given priority over maintenance, restoration, and enhancement of smaller, more isolated habitat patches.
 - (3) Valley and blue oak trees that link on- or off-site oak tree savannas, woodlands, forests, or other existing, proximate habitats are retained to the maximum extent feasible.
 - (4) On-site replacement is given priority over off-site replacement except where no suitable on-site locations exist, or reasonable use of the lot would be precluded as determined by Planning and Development along with the Oak Tree Specialist. In such cases the replacement oak trees may be planted in an off-site location acceptable to the applicant, the landowner and the Oak Tree Specialist. For off-site replacement planting locations priority shall be given to nearby sites and to sites adjoining existing deciduous oak woodlands or providing links between deciduous oak woodlands.
 - (5) There is avoidance of removal of actively used granary trees, raptor roosting or nesting trees, and trees in riparian and other wildlife corridors.
- b. Comply with the following requirement, when applicable.
 - (1) When required by the Oak Tree Specialist on a case-by-case basis, a buffer area protecting the critical root zone shall be maintained around identified valley and blue oak trees retained on the lot.
- c. Identify valley and blue oak tree replanting, restoration, conservation and enhancement sites on a plan or aerial photograph to facilitate mitigation monitoring and tracking; and identify the species, location, and size of all oak trees that are planted or protected as mitigation or to fulfill a condition on the permit.
- d. Provide the deciduous oak tree replanting schedule and nurturing regime.

2. Protected oak trees that are removed shall be compensated at a 15:1 ratio by replacement planting, or protection of naturally occurring oak trees between six (6) inches and six (6) feet tall on the lot.
 3. Naturally occurring valley and blue oak seedlings/saplings, growing on the lot and between six (6) inches and six (6) feet in height that are protected and nurtured for five (5) years, may be counted as replacement (mitigation) trees under the Program.
 4. Any combination of acorns, planted seedlings/saplings, or naturally occurring valley and blue oaks between six (6) inches and six (6) feet tall, if established according to the requirements herein, may be used to achieve the required number of replacement trees.
 5. Replacement deciduous oak trees that are planted must come from nursery stock grown from locally-sourced acorns, or use acorns gathered locally, preferably from the same watershed in which they are planted. If planting is done using acorns, the ratio of acorns to protected oak trees removed shall be a minimum of forty-five (45) acorns for every protected valley oak tree removed. Up to three (3) acorns may be planted in the same hole.
 6. Replacement deciduous oak trees shall be established in a location suitable for their growth and survival as determined by the Oak Tree Specialist, no closer than twenty (20) feet from each other or from existing oak trees and no farther than 165-180 feet from each other or existing oak trees unless otherwise approved by the Oak Tree Specialist.
 7. Valley oaks shall replace valley oaks removed and blue oaks shall replace blue oaks removed.
 8. The replacement deciduous oak trees shall be nurtured for five (5) years, the last two without supplemental watering, using techniques consistent with the most current version of the University of California publication "How to Grow California Oaks." At the end of the five years, ten trees for every protected tree removed must be alive, in good health as determined by the Oak Tree Specialist, and capable of surviving without nurturing and protection.
 9. Each replacement deciduous oak tree must be protected against damaging ground disturbance, soil compaction, or over-irrigation within the dripline. It must be fenced to protect it from grazing or browsing by animals both below and above ground until it has reached a minimum of eight (8) feet in height.
 10. Where conditions warrant and where agreed to by the landowner and Oak Tree Specialist, tree planting designs and nurturing practices (e.g. protective structures, watering schedules) may be adjusted to improve the probability that replacement trees will be established successfully.
 11. Valley oak tree removal encompassing an area of five (5) acres or greater shall require valley oak replanting of an area of comparable size in accordance with the requirements of this section, in an area of existing or historic valley oak habitat.
This area shall be protected in the long-term where feasible.
 12. For the purposes of this ordinance, all replacement trees are considered protected oak trees regardless of size.
- Contact:** Alex Tuttle, Supervising Planner Development Review, 805-568-2000, atuttle@countyofsb.org, for more information : *Alex has worked on the oak tree ordinance so any questions or concerns can be directed to him.*

San Luis Obispo County maintains a listing of qualified individuals to prepare Oak

Management Plans as part of the Oak Ordinance, which was enacted in 2017. See: <https://www.slocounty.ca.gov/Departments/Planning-Building/Long-Range-Planning/Services/Oak-Woodland-Ordinance.aspx> Contact Megan Martin at (805)781-4163 or mamartin@co.slo.ca.us for more information. (She was a key staff person in developing the oak ordinance for the county.)