

**California Oak Foundation**  
**Oaks, CEQA, Carbon Dioxide and Climate Change**

The following California Environmental Quality Act public comments apply to all mitigated negative declarations and environmental impacts reports where native forests, including oak woodlands, are converted to non-forest use.

Re: Project EIR Climate Change Analysis

Dear X:

*"[W]e cannot afford to ignore even modest contributions to global warming. If global warming is the result of cumulative contributions of myriad sources, any one modest in itself, is there not a danger of losing the forest by closing our eyes to the felling of the individual tree?"* [Center for Biological Diversity v. National Highway Traffic Safety Administration (US Ninth Circuit Court, 2007)]

The Conservation Organization (CO) writes to advise the Lead Agency that the Project EIR is remiss in failing to meaningfully analyze or mitigate carbon dioxide (CO<sub>2</sub>) biological emissions associated with the conversion of oak woodlands to non-forest use. By this omission, Project disregards the California Environmental Quality Act (CEQA), Office of Planning and Research (OPR) guidelines, California Attorney General opinions and Court decisions by not making a good faith effort to analyze or mitigate project oak woodlands CO<sub>2</sub> biological emissions.

The California Global Warming Solutions Act (AB 32) defined thresholds are to **reduce** carbon dioxide emissions by 2020 to 1990 levels, with a further 80 percent CO<sub>2</sub> reduction by 2050. That means every ton of CO<sub>2</sub> emitted back into the atmosphere by Project oak woodlands conversion, plus the loss of future increases in tree carbon sequestration, represents a measurable potential adverse environmental effect.

Carbon

Carbon storage occurs in forests and soils primarily through the natural process of photosynthesis. Atmospheric CO<sub>2</sub> is taken up through leaves and becomes carbon in the woody biomass of trees and is released back into the atmosphere when a tree dies. Approximately half of vegetation mass is sequestered carbon. In terms of its global warming impact, one unit of CO<sub>2</sub> released from dead oak biomass has the same ecological effect as one unit of CO<sub>2</sub> released from a car tailpipe.

The foundation of the AB 32 reduction objectives and California Forest Protocol preservation standards is the "net present value" of GHG emissions – an emission avoided today is more valuable than an emission avoided tomorrow. Thus, a ton of oak woodlands carbon currently sequestered is more critical than a ton of woodland carbon stored in the future.

A state standard (recognized universally) to measure oak woodland CO<sub>2</sub> biological emissions exists under the 2007 California Air Resources Board (CARB) Forest Protocol. This Protocol provides the analytic tools and methodology for measuring CEQA forest carbon baselines-impacts. Notably, COF has the Forest Protocol-accredited professional capability to calculate for any oak woodlands conversion both the amount of carbon dioxide currently sequestered and the CO<sub>2</sub> biological emissions if those woodlands are impacted.

## CEQA

CEQA requires that the Lead Agency evaluate potential environmental effects based to the fullest extent possible on scientific and factual data. In the absence of defined thresholds, significance conclusions must be based on substantial evidence, which includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts. (CEQA Guidelines § 15064) Based on science, fact, expert opinion (attached) and the AB 32 defined thresholds, Project removal of X thousands of oaks on X acres is indisputably a potentially significant carbon biological emissions effect.

The fact is CEQA review doesn't require specific carbon emission regulations issued by any government agency; CEQA review only requires substantial evidence of a significant effect and a fact-based methodology to measure that impact. Scientific studies, passage of Assembly Bill 32 (2006) and adoption by the California Air Resources Board (2007) of the California Climate Action Registry Forest Protocol (2005) are all the CO2 science, fact and law necessary for CEQA review.

On January 8, 2009 the Governor's Office of Planning and Research released draft regulatory guidance with respect to the analysis and mitigation of the potential effects of greenhouse gas emissions (attached). OPR corroborates that analysis-mitigation of carbon biological emissions due to oak woodlands conversion to non-forest use and the CARB Forest Protocol are integral to CEQA review.

## Significance Thresholds

In the future CARB may or may not set a numerical threshold for project carbon biological emissions. If a significance standard is set it will be very low. This is a product of oak's ability to both store atmospheric carbon dioxide (CO2) and release CO2 back into the atmosphere when killed. Thus two CO2 biological emission impacts must be considered for CEQA review. Additionally, CEQA significant oak woodland biological effects are the sum of carbon emission impacts and wildlife habitat impacts. This intrinsic duality is the focal point for CEQA oak woodlands biological analysis and mitigation.

## Carbon Mitigation

Dual oak woodland CO2 emission effects must be considered for CEQA review: Direct CO2 emission impacts from dead tree disposal and cumulative impacts due to the loss of future increases in live tree carbon sequestration. Notably, the absence of **value** and **timeliness** exclude on-site oak woodlands retention or the planting of oaks as valid CO2 biological emission mitigation measures. Here's why:

The XYZ project site contains 30,000 native trees (400 acres), of which 10,000 trees (100 acres) will be removed for development.

1. The 20,000 retained trees (300 acres) won't start growing any faster, so they contribute **zero** toward mitigating for the CO2 that would've been stored had the 10,000 impacted trees (100 acres) lived.
2. Planting mitigation oaks contributes **negligible** CO2 mitigation because they don't begin to sequester significant carbon for at least 20 years, longer for slow growing blue oak. This means oak mitigation planting contributes **zero** mitigation for carbon biological emissions in the Assembly Bill 32 short-term (2020/2050) and their a long-term (Forest Protocol 100-year) ability to store CO2 is greatly exceeded by the amount of carbon that would've been sequestered by the 10,000 impacted trees over the same 100-year period.
3. On-site woodland retention and planting oaks contribute **negligible** mitigation for CO2 biological emissions associated with the disposal of 10,000 dead trees.

4. Once the carbon math is complete, by a process of elimination off-site mitigation of equivalent oak woodlands is the lone feasible and proportional mitigation measure available for XYZ. Moreover, because each XYZ impacted tree has a distinct carbon value and a distinct habitat value, **only** off-site mitigation "replacement" of at least 100 acres with similar trees can meaningfully mitigate these **dual** adverse biological effects. Any alternative oak woodland mitigation proposals will discover how technically arduous it can become trying to comply with/reconcile local standards or Public Resources Code §21083.4 (SB 1334) and the Forest Protocol.

CEQA CO2 questions to be answered include: (1) how much potential CO2 sequestration over the next 100 years will be lost due to impacts to live native trees three (3) inches dbh or greater; (2) how much sequestered CO2 will be released if the live trees, standing dead trees or woody debris are burned or otherwise disposed; (3) how will oak woodland CO2 biological emission impacts be proportionally mitigated?

California has officially designated CO2 a grave human health risk. Consequently, local jurisdictions cannot invoke ministerial or overriding consideration prerogatives in determining proportional mitigation for carbon biological emissions due to oak woodlands conversion to non-forest use. It would be an abuse of discretion to declare an inadequately mitigated oak woodland conversion a public benefit when in fact woodland conversion represents a demonstrable public health hazard.

#### Summary

California's official greenhouse gas policy categorically places a premium on conserving native forests over the next 100 years. Yet, the Project refuses to meaningfully analyze direct and cumulative CO2 emissions from the conversion of X acres of oak woodlands to non-forest use, despite a universally accepted California standard for measuring those carbon biological emission effects. Simply asserting that the "*project's contribution to cumulative GHG emissions is considered **cumulatively considerable and significant and unavoidable**,*" doesn't relieve the project from the CEQA responsibility to thoroughly analyze and mitigate for potentially significant CO2 effects from oak woodlands conversion. (See Center for Biological Diversity, et al. v. City of Desert Hot Springs, et al. (2008) Riverside County Superior Court - Case No. RIC 464585 and Berkeley Keep Jets Over the Bay Committee vs. Board of Port Commissioners (2001) 91 Ca.App.4th 1344, 1370-71.)

CO contends there is substantial evidence to support a "fair argument" that Project conversion of oak woodlands will have a significant effect on the environment. To provide proportional woodlands mitigation for Project significant carbon biological emission impacts, CO urges that the project adopt the following mitigation measure:

*"The applicant shall preserve off-site, in perpetuity by grant of conservation easement in a form acceptable to the Director of Planning to a qualified recipient approved by the Director of Planning, at least 100 contiguous acres of oak woodland located within the County, which 100 contiguous acres shall be equivalent in ecological function and quality to the woodland on the project site."*

Until these California Environmental Quality Act requirements are met, the Conservation Organization objects to approval of the project and adoption of the DEIR.

Sincerely,  
Conservation Organization

## Oak Woodlands Carbon Attachment

### Oaks and Climate Change Explained

The current carbon dioxide contribution to global warming is in part a byproduct of mankind's conversion of the Earth's forest cover to non-forest land use: *"In the last 8,000 years about 45% of the Earth's original forest cover has disappeared, cleared mostly during the past century"* (Smithsonian 2003). Continuing *"deforestation accounts for about 20% of the carbon dioxide spewed into the atmosphere each year"* (Wall Street Journal 2008). According to the Intergovernmental Panel on Climate Change, *"Carbon dioxide is the most important anthropogenic greenhouse gas ... The global increases in CO2 concentration are due primarily to fossil fuel use and land-use change"* (2007).

Based on the latest University of California figures (2007), California Oak Foundation estimates that since 1990 California has converted 325,000 acres of oak woodlands to non-forest use. This means in California there are substantially less acres of oak forest to help reduce state CO2 emissions to 1990 levels by 2020 as required by Assembly Bill 32 (2006). Additionally, the escalating deforestation of oak woodlands (25,000 acres annually) will make it that much more difficult and expensive to meet the primary AB 32 goal of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050.

The California Climate Change Center has reported that *"There is substantial evidence that temperatures in California are projected to rise 4.7 to 10.5 degrees Fahrenheit by the end of the century [and] temperatures can increase air quality problems"* (2007). Blue oak woodlands constitute nearly 50 percent of the state's woodlands resource. A University of California study examining the effects of California temperature increases on blue and valley oaks *"found that the areas of the state where the climate is suitable for these species to grow will shift northward and could shrink to nearly half their current size as a result of global warming"* (2005). Thus, the more that oak woodlands are converted to non-forest use, the greater the rise in California temperatures and the greater the temperature increases, the faster oaks are extrapolated from the California landscape.

The peer-reviewed publication "Oaks 2040: The Status and Future of Oaks in California" (2006) estimates that up to 750,000 acres of oak resources are at risk of conversion to non-forest use by 2040. A companion study, "Carbon Resources in California Oak Woodlands" (2008), calculates that *"California oak woodlands and forests could sequester a billion tons of carbon [and] up to 33 million tons of sequestered carbon are at risk [by 2040] of entering the atmosphere should development processes eliminate these oak woodlands and forests, and their associated carbon pools."*

The California Forest Protocol was initiated by Senate Bill 812 in 2002, approved by the California Climate Action Registry in 2005 and adopted by the California Air Resources Board (CARB) on October 25, 2007. This Forest Protocol: (1) classifies the conversion of oak woodlands to non-forest use as a CO2 biological emission; (2) establishes the methodology used to measure oak woodland biological emissions for CEQA review: Live tree biomass (including roots), standing dead tree biomass and wood lying on the ground.

On January 8, 2009 the Governor's Office of Planning and Research released draft regulatory guidance with respect to the analysis and mitigation of the potential effects of greenhouse gas emissions. OPR validates that analysis and mitigation of carbon biological emissions due to oak woodlands conversion to non-forest use and the CARB Forest Protocol are integral to CEQA review:

**Preliminary Draft CEQA Guideline Amendments for Greenhouse Gas Emissions  
CEQA Guidelines Appendix G  
Environmental Checklist Form**

EVALUATION OF ENVIRONMENTAL IMPACTS

II. AGRICULTURE AND FOREST RESOURCES ... In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526)?

d) Result in the loss of forest land or conversion of forest land to non-forest use?

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

Forest Protocol Key Terms

*Biological emissions:* For the purposes of the forest protocol, biological emissions are greenhouse gas emissions that are released directly from forest biomass, both live and dead, including forest soils.

*Biomass:* The total mass of living organisms in a given area or volume; recently dead plant material is often included as dead biomass.

*Bole:* A trunk or main stem of a tree. For the purposes of the Protocol, any tree bole with a minimum diameter of three inches should be included in the inventory to estimate carbon stocks.

*Carbon pool:* A reservoir that has the ability to accumulate and store carbon or release carbon. In the case of forests, a carbon pool is the forest biomass, which can be subdivided into smaller pools. These pools may include above-ground or below-ground biomass or roots, litter, soil, bole, branches and leaves, among others.

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