

Oak Woodland and Fire Fuel Reduction Project at Lake Hodges

The following list of priorities and solutions, presented to Public Utilities staff on June 22, 2015, was developed and Staff has prepared responses, shown below each numbered item.

Priorities & Solutions

1. Halt current project(s) for reassessment

It is understood that all of these comments are personal, sincere and deeply held. Hodges Reservoir and the land surrounding it are owned and managed by the City of San Diego. Although there are recreational opportunities at Hodges Reservoir, the priority is for source water protection and the land is managed for this purpose.

Beginning in 2010, a volunteer group known as the Del Dios Habitat Protection League initiated a project to remove six inch diameter and smaller eucalyptus trees. The Lake Hodges Firesafe Council provided some minor funding over the subsequent years. In the summer of 2014 the League secured funding from the Urban Corps and received a grant from the Natural Resources Conservation Service (NRCS) for the Oak Woodland Fire Fuel Reduction Project at Hodges. This is the current project. Although the title of the project includes the words "fire fuel reduction," the larger goal of the project is to restore ecosystem function and services of the oak woodland, an important habitat under the City's Multiple Species Conservation Program (MSCP). To restore the ecosystem services, one project component is the removal of invasive, non-native floral species, particularly eucalyptus.

The tree removal in the current project is complete but further funding is being sought for this purpose. These projects have used adaptive management strategies, with an emphasis on a systems approach. By using the best available scientific information to guide the project, the team is working toward efficiently meeting the project's goals and objectives. These long-term goals will aid in oak woodland recovery that will result in renewed habitat diversity and benefit native species, of many taxa.

While pepper trees, palms and other invasive plants are targeted, this project is focused on eucalyptus. Blue gums' most obvious environmental impact involves the native plants they displace. Where they grow thickly, blue gums compete very effectively with other plants for water and sunlight, and their dropped bark and leaves contain chemicals that retard the growth of other plants. There are plenty of large stands of eucalyptus along the California coast with almost no other plant species to be found, and where the eucalyptus grow thinly, they still seem to reduce native plants' vigor.

One of the biggest ecological threats posed by blue gums is that the trees can radically change a landscape's natural fire cycles. The trees' shredded bark and oily dead leaves provide abundant fuel for wildfire, along with a way to carry that fire up into the treetops. That in turn increases the likelihood that wind will pick up and carry embers for miles. The mature blue gums also

exhibit a tendency to explode when they catch fire. And though many Californian native plants respond to fire by resprouting, few match the blue gums' ability to do so. A fire in a eucalyptus grove merely strengthens the blue gums' hold on the land.

Due to similar favorable climatic conditions, eucalyptus plantations have often replaced oak woodlands, for example in California, Spain and Portugal. The resulting monocultures have raised concerns about loss of biological diversity, through loss of acorns that mammals and birds feed on and the absence of hollows that in oak trees provide shelter and nesting sites for birds and small mammals and for bee colonies. The Point Reyes Bird Observatory reports that bird diversity in eucalyptus groves is about 70 percent lower than in oak woodlands or native riparian forests in the same locale.¹ A study comparing wildlife use of eucalyptus trees versus native vegetation on Angel Island found three times more arthropods, more small mammals, and more bird species in the native oak-bay woodland and grassland than in eucalyptus. The few bird species found to prefer eucalyptus were widespread species that occupy many different habitats throughout their range.² These include herons, egrets, cormorants and raptors, such as red-shouldered and red-tailed hawks, which will use eucalyptus to roost.

One way in which the avifauna changes is that cavity nesting birds including woodpeckers, owls, chickadees, wood ducks, etc. are depauperate in eucalyptus groves because the decay-resistant wood of these trees prevents cavity formation by decay or excavation. Also, bird species that glean insects from foliage, such as warblers and vireos, have population declines when eucalyptus forests displace oak forests.

2. Do not take down any more LIVING Mature Trees Including but not limited to Eucalyptus, Palm & California Pepper Trees.

****Mature tree defined as those trees with trunks measuring 6" in diameter or greater***

Eucalyptus generate abundant seed. For this project to be effective, mature trees must be eliminated as well as smaller trees. The 6 inch diameter threshold came from the earlier project that was limited to volunteer efforts and therefore incapable of handling larger diameter trees. Maturity is typically measured by age, not tree girth but we did find this info regarding size: Mature height: 100-200' feet, mature diameter up to 7 feet.³

Removal of eucalyptus, palm and pepper trees is part of the grant contract. If tree removal ceases, the project would be in noncompliance with this contract, and funding would need to be repaid to the grant program.

¹ <http://archive.audubonmagazine.org/incite/incite0201.html>

² Keane, J.J., and M.L. Morrison. 1990. Comparative use of eucalyptus versus native vegetation by wildlife on Angel Island State Park, California. 1990 Transactions of the Western Section of the Wildlife Society 26:44-50.

³ http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/eucalyptus/globulus.htm

3. To Reduce [Tree] Fire-Fuel Zone:

Remove lower limbs of trees ("prune") to at least 6 feet up to 15 feet (or the lower 1/3 branches for small trees). Properties with greater fire hazards, such as steeper slopes or more severe fire danger, will require pruning heights in the upper end of this range. Clear surface fuels Prune branches at least 6 ft.

Eucalyptus is a self-pruning tree and dense stands of eucalyptus can accumulate significantly higher fuel loads than native woodlands. One study found fuel loads of 31 tons/acre in eucalyptus stands as compared to 12 tons/acre in coast live oak woodlands⁴. By removing invasive plants and trees, the project is reducing fire fuels. However, this is not a brush management project. The methods described above are employed within 100' of residences. Utilizing this method to control invasive plants would not be cost effective.

4. Discontinue the use of the herbicide ROUND-up (Glyphosate) as a chemical maintenance tool.

The use of Glyphosate is regulated by State law for use in cut stump application and as a foliar spray. Spraying by plane or helicopter are the most common methods used, and are generally restricted to agricultural settings. This project applies Glyphosate as foliar spray in the spot application method, using a backpack sprayer. This is very different than broadcast spraying, which requires specialized equipment.

Glyphosate is rainfast (absorbed into the plant) between 30 minutes and two hours. The Roundup label states the Non-Agricultural Use Requirements as such "Keep people and pets off treated areas until spray solution has dried to prevent transfer of this product onto desirable vegetation." Typical drying time is 15 minutes.

Glyphosate disrupts the shikimic acid pathway (a seven step metabolic route) through inhibition of an enzyme. The shikimic acid pathway is specific to plants and some microorganisms. This pathway is absent in mammals and may explain the low toxicity of glyphosate to non-target organisms. Please refer to this pesticide technical fact sheet:

<http://npic.orst.edu/factsheets/glyphotech.pdf>

Glyphosate is used widely in agriculture. Crops have been genetically modified to remove the shikimic acid pathway, making the plants "RoundUp ready" or immune to the herbicide. Consequently, planes can spray ag fields liberally, without harming the crops. This of course deposits the glyphosate on a product that will be ingested by humans. For this reason glyphosate has come under fire. This project uses the herbicide on nonedible plants.

⁴ National Park Service 2006. Eucalyptus. San Francisco Bay Area National Parks, Fire Education Office, Point Reyes Station, CA. <http://biomass.forestguild.org/casestudies/1001/Eucalyptus.pdf>

The herbicide illness database of the California Dept. of Pesticide Regulation lists all reports of herbicide or pesticides illnesses for the state. The database records cover the last 20 years. Glyphosate is listed many times in the database because of contact with the eyes. All incidents are investigated. No serious injuries have been recorded. There is a commonality among the incidents: most involve a worker who was not wearing eye protection when a hose bursts or they were trying to unplug a nozzle, again without eye protection. The soap in most glyphosate mixes will irritate the eyes, but does not cause any lasting injury. The antidote is to wash the eyes out with water. The database often reports that the workers hadn't been trained in the proper use of safety gear, i.e., eye protection. The problem of eye irritation from direct contact with the glyphosate mix is clearly listed on the label on all packages of glyphosate, including the ones sold at Home Depot.

The City, County and State have approved the use of Glyphosate around water because it is the safest, most efficient herbicide for this purpose. The City will consider any reasonable alternatives, should any be presented.

5. When using Herbicides ALWAYS display & define area to be sprayed in ADVANCE with CLEAR & OBVIOUS signage alerting the public of the area & substance used.

The State of California Department of Pesticide Regulations mandates public notification of pesticide use in public spaces. The only requirements relate to spraying adjacent to agricultural areas. However, in an effort to respond to concerns, the project began and continues to post on the same day spraying occurred. Moving forward, the project will commit to post the area 24 hours in advance of and a minimum of 24 hours post application.

6. Once an area of vegetation has been worked, if undergrowth clearing was part of the process, establish & post clear signage prohibiting public access to & through that newly exposed area before leaving the area.

The public trail is a challenge. We do not want trail users to leave the trail. Trail users regularly left the trail prior to the inception of this project (e.g. the swing and photography sessions.) The department also has a fishing program that allows fishermen to leave the trail and walk to the edge of the reservoir.

We have established and posted signage in the newly cleared areas. We can commit to ensuring these signs are posted as soon as possible in new areas and properly maintained or replaced.

Should a cleared area provide enticement to leave the trail, we will commit to reviewing proposals to cordon off these areas on a case-by-case basis.

7. If piles of brush, cut wood or plant material is created through the course of work on the Project - Remove those piles within 7 days from the time that they were created. Do not create more drying debris until that which is created has been removed.

Going forward, the project will commit to debris removal in a timely and orderly fashion. Since cost efficient practices used by the project includes partial drying of slash and rounds, cut wood and brush will be removed within 30 days. In addition, effort will be made to remove debris as soon as possible.

8. Make publically available a Site Specific COMPLETE Environmental Impact Report including report on Current Wildlife counts

Notwithstanding the fact that because the project is funded with federal funding and is therefore subject to NEPA, not CEQA, the impacts associated with this project were evaluated by NRCS in 2014 with all Environmental Impact Reporting completed as part of the funding requirements. Impacts to wildlife were deemed temporary in nature. This project scope was also evaluated under CEQA in 2008 and is under a watershed permit for the San Dieguito Watershed. In order to make these documents “publically available,” the requestor would need to follow the procedures set forth by the Freedom of Information Act (FOIA) with the U.S. Department of Agriculture. Since this process was never enacted, these documents were never made publically available. It is USDA-NRCS policy to protect all sensitive information for its landowners and clients.

The City would not use public funds to commission something that is not required. Should you wish to commission a biologist to prepare a wildlife report, the City would cooperate fully and take the report under review. We can provide the City’s list of Qualified Biologists and provide access to the property for the survey.

9. Deliver pertinent Information to citizens via U.S. Postage to area mailboxes & Display plans in sealed Lake Hodges Park Bulletin Board.

The project will maintain maps and other announcements in the kiosk at Del Dios Park. The Habitat Protection League is currently developing a web presence and we have asked them to build into it the option for individuals to sign up for project notifications. We are not opposed to citizens sharing information with neighbors via the U.S. Postal Service but we do request that the information is accurate.

10. Include Aesthetics as an integral part of the projects plan

Aesthetics is very general issue area, with specific meaning tied to individual taste. This term has been applied to the areas where cut wood and material has been left on site, which is addressed under number 6 above. Certainly, aesthetics are taken into account in a restoration plan by virtue of mimicking a natural ecosystem.

11. Factor in the cost & commitment of the long term maintenance of planted saplings.

The costs of long term maintenance of restoration are considered both in the grant application process and by the City.

12. Factor in the ongoing drought & shortage of water statewide.

The drought is another reason why this project is important to Public Utilities. Historically, the eucalyptus' ability to take up water was known and given as the reason many were planted in California. In the first biennial report of the State Board of Health for 1870-71, the eucalyptus tree was reported as being serviceable: "The roots act as a sponge, pumping water and drainage ground and emitting odorous antiseptic emanations from its leaves. It absorbs from the soil ten times its weight in water every twenty-four hours."⁵

The fast-growing and extra large blue gum, in particular, helped eliminate swampy, unhealthy land in the poorly drained lower areas of the Sacramento and San Joaquin valleys where malaria-type fevers were a plague to the inhabitants.⁶

In a paper read before the California Medical Society in 1889, it was said that a stagnant swamp of two hundred acres would have water absorbed by eucalyptus trees growing in the area at the rate of millions of gallons per day.⁷

13. Factor in wasted Taxpayers monies on removing vital habitat & established trees against a waiting time of decades for surviving sprouts to provide the same.

This is a federally funded grant program, fully vetted by the federal government. No County of San Diego taxpayer funds have been or will be used on this project. Because Del Dios is not within the City's jurisdiction and you are not City of San Diego Public Utilities water ratepayers, no enterprise funds into which you pay are funding this project.

Federal, state and local governments, as well as non governmental organizations, fund this type of project on a regular basis. The time to reestablish plants is taken into account.

14. Factor in the reality of Climate Change & impact of the lack of shade from towering trees upon the fauna, flora & soil beneath.

In 2008, the San Diego Foundation compiled an impact assessment report of potential climate change impacts to the region in The San Diego Foundation Regional Focus 2050 Study. The study purports that climate change will further compound the current issues related to the "interrelationship between urban and natural systems".⁸ Specifically these effects include

⁵ http://www.sfgenealogy.com/sanmateo/history/smcady_1.htm

⁶ <https://www.sandiegohistory.org/journal/70fall/eucalyptus.htm>

⁷ Ibid

⁸ The San Diego Foundation Regional Focus 2050 Study. 2008.

http://www.cleantechsandiego.org/reports/Focus2050_whitepaper_final.pdf.

diminished imported and local water availability due to drought, increases in the number of heat wave days, and increased frequency of wildfires. Together these three impacts, with projected increases in population, will put terrific pressure on the region's ecosystems.

Natural ecosystems can offer services to mitigate greenhouse gas accumulation through processes such as carbon sequestration. Following the California Assembly Bill 32, passed by the Legislature and signed by the Governor in 2006, the United States Environmental Protection Agency (EPA) created regulatory initiatives to reduce greenhouse gas emissions. An intact native landscape is well equipped to sequester carbon at a regional scale with minimal human input over time. An intact natural landscape will also better adapt to climatic changes and be able to contribute even more services to reversing the effects of climate change.

A full grown oak (*Quercus agrifolia*) can easily reach 50 feet with a branch spread of 50 feet. Typical stands are from 40-110 years old, and occasionally a specimen may live to 250 years.⁹

Other Concerns

Lack of Transparency to tax paying public in regard to projects' objectives, timeline & funding dispersal.

This is a federally funded project. Information related to the grant program is available on the NRCS website.

Closed & secretive project meetings held within the community.

Project meetings, such as the one held in May, are not required to be open. That meeting was focused on matters internal to the Del Dios Habitat Protection League, such as development of a web page and whether they should seek not for profit status. This project has been and will continue to be compliant with the Brown Act.

Lack of scientific process on selection of trees to be spared --- emphasis placed on removal of view blocking specimens (see article)

This project has involved the removal of invasive trees all around the reservoir, including locations outside the viewshed of any residents. The decision as to which trees should be removed was made by NRCS and City staff, not residents working on the project. The selection process of trees to be left in place was based on community feedback. The referenced article was retitled from a post on the electronic community bulletin board where a local realtor identified an ancillary benefit of the project: lake views. As the native plants and trees fill in, those views will be minimized.

⁹ United States Forest Service
<http://www.fs.fed.us/database/feis/plants/tree/queagr/all.html>

Lack of prompt follow-through on promised actions: i.e.: signage for herbicide spraying; signage for sensitive habitat & trail closures; timely removal of cut wood & brushy debris etc.

This statement is inaccurate regarding signage, which is currently posted the day that spraying occurs and trail closure, which occurs when spraying is adjacent to the trail. The project will be held to new standards for signage and debris removal.

Lack of concern for aesthetics on 'finished' project. "War Zone" vision acceptable per biologist comment in UT article.

We recognize that after felling trees and removing debris the site is not aesthetically pleasing. This is, however, temporary. The article references the aftermath of a storm, not a war zone, and goes on to say that this is the beginning of habitat restoration. The biologist's comments acknowledge the temporary destruction necessary to create a viable native (and aesthetically pleasing) site.

Overall dismissal by all involved in regard to the realities of Climate Change & the impact the resulting lack of shade & shelter will have on existing flora, fauna, soils & human visitors.

These elements have not been dismissed. City staff and NRCS staff meet regularly with regional scientists to discuss these concerns and more.

Dismissal of BioBlitz results of remarkable biodiversity & wildlife population prior to the extreme habitat disruption caused by current city lakes project.

The BioBlitz, conducted outside of the eucalyptus forests at Hodges, indicate a fantastic biodiversity. It is a project objective to increase the biodiversity at Hodges.

With respect to the lowering of the invasive category of blue gum eucalyptus:

Cal IPC revised its scores for criteria used to determine a plant's invasive priority. This resulted in a change in the overall score from "Moderate" to "Limited" for blue gum eucalyptus. This assessment considers the **statewide** status of blue gum, whose impacts and ability to spread vary significantly in different parts of the state. Along the coast, some blue gum stands have expanded significantly, while in other areas, stands are shrinking. Fortunately, blue gums are not nearly as aggressive in conquering new territory as many other invasive plants. Though they do reseed reasonably well in areas where there's a lot of moisture, blue gums seem not to be expanding their range at all in drier places farther inland. According to Cal IPC, for blue gum stands in a natural reserve, this assessment may provide the basis for prioritizing blue gum as a high-priority target for removal (except where they support monarch butterflies).

Since almost no one is planting blue gums deliberately any more, the future of eucalyptus invasions in California may be limited to edgewise spreading in places where they already grow.

For this reason, while the statewide priority for this invasive was lowered, the project addresses eucalyptus in this area as a high priority.

With respect to the comment regarding erosion in the project area:

We will schedule a site visit to review the potential for erosion in light of potentially heavy rains associated with the predicted El Niño this coming winter.