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CLERK OF THE BOARD
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NOTICE OF APPEAL

Monterey County Code
Title 19 (Subdivisions)
Title 20 (Zoning)
Title 21 (Zoning)

No appeal will be accepted until written notice of the decision has been given. If you wish to file an appeal, you must do so on or before July 31, 2015 (10 days after written notice of the decision has been mailed to the applicant).

Date of decision: July 8, 2015

1. Name: Nina Beety

   Address: 277 Mar Vista Dr., Monterey, CA 93940

   Telephone: 831-655-9902

2. Indicate your interest in the decision by placing a check mark below:

   Applicant _____

   Neighbor _____

   Other (please state) Community member

3. If you are not the applicant, please give the applicant's name:

   State of California/Elkhorn Slough National Estuarine Research Reserve

4. Fill in the file number of the application that is the subject of this appeal below:

	Type of Application	Area
a) Planning Commission: PC- PLN100351	Combined Development Permit	North County
b) Zoning Administrator: ZA- _____		
c) Minor Subdivision: MS- _____		
d) Administrative Permit: AP- _____		

Notice of Appeal

5. What is the nature of your appeal?

   a) Are you appealing the approval or denial of an application? Approval

b) If you are appealing one or more conditions of approval, list the condition number and state the condition(s) you are appealing. (Attach extra sheet if necessary)

6. Place a check mark beside the reason(s) for your appeal:

There was a lack of fair or impartial hearing _____
The findings or decision or conditions are not supported by the evidence ___x_____
The decision was contrary to law _____

Give a brief and specific statement in support of each of the reasons for your appeal checked above. The Board of Supervisors will not accept an application for an appeal that is stated in generalities, legal or otherwise. If you are appealing specific conditions, you must list the number of each condition and the basis for your appeal. (Attach extra sheets if necessary)

7. As part of the application approval or denial process, findings were made by the decision-making body (Planning Commission, Zoning Administrator, or Minor Subdivision Committee). In order to file a valid appeal, you must give specific reasons why you disagree with the findings made. (Attach extra sheets if necessary)

See attached "Appeal of CDFW Elkhorn Slough Ecological Reserve Eucalyptus Removal – PLN 100351"

8. You are required to submit **stamped-addressed envelopes** for use in providing notice of the public hearing on the appeal to all interested persons and all property owners within **300 feet** of the subject property. You may obtain the mailing list from the Planning and Building Inspection Department.

9. You must pay the required filing fee of $1,728.07 (make check payable to "County of Monterey") at the time you file your appeal. (Please note that appeals of projects in the Coastal Zone are not subject to the filing fee.)

10. Your appeal is accepted when the Clerk to the Board accepts the appeal as complete and receives the required filing fee and the stamped-addressed envelopes. Once the appeal has been accepted, the Clerk to the Board will set a date for the public hearing on the appeal before the Board of Supervisors.

The appeal, filing fee, and envelopes must be delivered to the Clerk to the Board or mailed and postmarked by the filing deadline to PO Box 1728, Salinas CA 93902. A facsimile copy of the appeal will be accepted only if the hard copy of the appeal, filing fee, and envelopes are mailed and postmarked by the deadline.

APPELLANT SIGNATURE _____ Date: 7-31-15

ACCEPTED _____ Date: _____
Clerk to the Board

cc: Original to Clerk to the Board; Planning & Building Inspection Department
Monterey County Land Use Fees approved on 03-24-15

Appeal of CDFW Elkhorn Slough Ecological Reserve Eucalyptus Removal -- PLN 100351

I appeal this project because the findings and decision are not supported by the evidence.

- It is in violation of the North County Plan.
- It is ideologically driven and flawed, with a lack of science demonstrating benefit.
- It affects four groves of over 1200 trees of great environmental value and the wildlife that rely on them.
- It will harm the Slough environment.
- There has been inadequate noticing and public hearings.

The following findings are in error –

Findings

1. Project Description
   Removal of 1225 or 1255 trees – there is uncertainty on the real number -- p. 6 versus p. 161. It seems to be 1255 trees. There are other examples of conflicting numbers in the MND.

2. Consistency/Suitability
   a)
      a. Inconsistent with North County Land Use Plan which emphasizes 1) protecting sensitive habitats and 2) co-existing organisms;
      b. Lack of publicity guaranteed no one knew the project was happening – the reason for no comments

   b)
      a. Inconsistent with good fire management by increasing grasslands and decreasing moisture zones;
      b. Inconsistent with local Greenhouse Gas Emissions priorities and state mandates (AB 32)

   c)
      a. Restoration "back to oak woodland which historically dominated the area" – one time period over 100 years ago or more is selected as an ideal ecosystem. This is a belief, not necessarily supported by science.
      b. "...and provides better habitat to bird and amphibian species" – this is not supported by the evidence. The MND does not provide adequate justification for
         i. why this is better, or
         ii. why removing an established functioning habitat, specifically protected under the North County Land Use Plan, is justified, or
         iii. why creating **any** impact or disturbance on special status species is justified.

   d)
      a. These eucalyptus rees are historically significant due to their long-term adaption to the area and the long-term habitat established over many generations of different species;
      b. Roosting occurs year-round;
      c. How long ago the eucalyptus were planted is unclear from MND;
      d. Eucalyptus is now rated as "limited invasive" according to Cal-IPC;

e. This will impact special status species such as the monarch butterfly and honeybee, as well as other species

g)

a. The LUAC meeting occurred in 2012 – 3 years ago. Climate change and other environmental factors have considerably worsened, California is in the midst of a terrible drought, and there have been changes in public policy. That necessitates a revisit to this plan.

3. Health/Safety
   a) This requires the addition of toxic herbicides over a long period of time to this sensitive habitat and adjacent to waterways.
   b) This increases fire risk due to removal of windbreaks and removal of the moisture-laden zones created by eucalyptus

5. CEQA
   a) This project will cause an increase in CO2 due to
      a. loss of sequestration and
      b. ongoing loss of CO2 absorption.
   b) This project will cause a decrease in O2 production.
   c) This is a violation of AB 32.
   d) County Greenhouse Gas documentation lists forest sequestration as an important mitigation measure which is being ignored by this project.

7. ESHA

   Section c: Within 100 feet, ongoing use of herbicides will impact aquatic species
   Section d: Substantial special status species are impacted by this project which will be ongoing for years with herbicide and disruption. In addition, it removes habitat and forage.
   Section e

   Biol-5 – Is annual barley a "native" since that seems to be a requirement for this project?
   Biol-7 –

   - Personnel can only remove special status species they see. How many will they miss?
   - Project priority is on removal, not protection.

   Biol-10 –

   - Every habitat has niches already taken; relocating species crowds habitat.
   - By tree and plant removal, CDFW reduces available habitat, impacting wildlife.

   Flagging of areas for humans does nothing to mitigate special status species disruption. Most of these "mitigation" measures are only for humans. Therefore, these are not mitigation measures for the species that will be disrupted by these actions.

   These are special status species that are impacted by this project, which is particularly alarming.

In short, there are too many important issues at stake for this project to proceed.

Specific issues in detail:

1. Inadequate noticing – A LUAC meeting was held three years ago. Flyers were only posted at the Moss Landing Post Office at that time. There was no other notice of the meeting.

   Since that time, by their own account, ESNERR has not held any public meetings to discuss this project.

   Signs were posted at Elkhorn Slough only during the holidays, from Dec.15, 2014 – Jan. 22, 2015, at a time when people are typically busy. Most of the signs were posted on the road or at the groves slated for destruction. One sign only was posted at the Visitor Center and only during this brief time period.

   ESNERR only posted the project notice and MND on the Elkhorn Slough Foundation website from Dec. 15, 2014 – Jan. 22, 2015, again during the holiday season.

   Apparently ESNERR did not send a press release to the news media on the project. The Planning Commission meeting was noticed once in the June 25- July 1 Monterey County Weekly, just prior to the meeting. Only those who read legal notices or Planning Commission agendas (posted just a few days prior) would be informed about this longstanding project but with very little lead time to do research.

   ESNERR has been planning this project for several years. There was plenty of time for public meetings and ample public notification. The only possible conclusion is that ESNERR and ESF did not want the public to know about this project and only did what was strictly legally required.

2. This project is in contradiction to the North County Land Use Plan.
   The North County Land Use Plan does not distinguish between so-called native and non-native species. Its focus is on protecting habitat and on environmentally sensitive habitat areas. It uses the word "fragile". It calls the viewscape of North County a "scenic" resource which must be protected.

   "*...Environmentally sensitive habitats are areas in which plant or animal life or their habitats are rare or especially valuable because of their special nature or role in an ecosystem and* ***which could be easily disturbed or degraded*** *by human activities and developments.*" The Land Use Plan puts "***all coastal wetlands and lagoons***" in this category.

   > *"****Perhaps most unique among all of these habitats are the sloughs****, the estuarine waters resulting from the mixing of seawater with freshwater.* ***They are also some of the most sensitive.****"*

> *"...A **great diversity of plant and animal habitats coexist...Interaction of variables over the years has produced several sensitive or rare habitats and species, many of which will require special attention if they are to be preserved for future generations**."*

Below are sections from the Land Use Plan, with emphasis added. Extensive scientific input must have been gathered in the preparation of this document, because, despite the pressures for coastal development, these statements are strict standards.

CDFW's project is not compatible with the North County Land Use Plan. It contradicts the purpose, as outlined in the Plan, in setting aside Elkhorn Slough as a Reserve. This project does not protect and preserve but seeks to superimpose a specific template and to disrupt an existing working and healthy ecosystem, with no guarantee of success or profit.

The language below from the Land Use Plan is very clear --

> *p. 27 -- The highest priority is placed upon the preservation and protection of natural resources including **environmentally sensitive habitat areas**, i.e., wetlands, dunes, and other areas with rare, endangered, or threatened plant and animal life.*
>
> *p. 30 -- The need for effective management of these areas is important to protect the abundance and diversity of their natural resources, **many of which are sensitive to disturbance** and have been degraded in the past due to erosion and land use practices. Effective resource management will be increasingly vital in protecting the coast's natural resources as stressed in the California Coastal Act of 1976. Areas of scenic value, **environmentally sensitive habitats**, prime agricultural value, unique communities, and areas of high geologic or fire hazard will require special attention in order to protect the public welfare and **preserve the delicate natural balance** upon which many of the resources depend.*
>
> *p. 31 -- 2.2.1 Key Policy*
> *In order to protect the **visual resources** of North County, development should be prohibited to the fullest extent possible in beach, dune, estuary, and wetland areas.*
>
> *p.32 -- 2.2.3 Specific Policies*
> *1. The scenic areas of North County including the coastal beaches and dunes, estuaries, wetlands, slopes adjacent to scenic corridors and viewpoints, and ridges shall be zoned for scenic conservation treatment.*
> *2. **Where it is found that highly sensitive scenic areas cannot be effectively protected through public regulation, then the land should be considered for public acquisition**. In such cases, the land should be purchased by agencies **with the capacity to properly manage and supervise the property**.*
> *...*

*6. **Existing native trees and other significant vegetation shall be retained to the maximum extent possible, as an essential element of the scenic beauty and character of the North County coastal area.***
The eucalyptus are significant vegetation, and therefore, an essential element.

2.2.4 Recommended Actions
*1. The beaches, dunes, estuaries, and wetlands should be zoned with a district that allows structures associated with the recreational, educational, and aquacultural use of the areas. The **scenic-wooded hills, ridges, and slopes** should be zoned with a district that allows only recreation and low density residential uses and appurtenant facilities that are compatible with the **scenic character of the area**. Procedures and standards should be designated for review of the siting, design, landscaping of, and grading for any structures proposed in these areas. No uses or structures should be allowed that are unnecessarily visible **or that significantly detract from the scenic character of these visual resources.**[many of these wooded slopes are covered with eucalyptus]*

p. 33 -- 2.3 ENVIRONMENTALLY SENSITIVE HABITATS
*Within the North Monterey County Coastal Area **a great diversity of plant and animal habitats coexist**.*

*Climate, soils, topography, the extent of marine influence, and the degree of disruption to the natural environment varies greatly. **Interaction of these variables over the years has produced several sensitive or rare habitats and species, many of which will require special attention if they are to be preserved for future generations**.*

***Environmentally sensitive habitats are areas in which plant or animal life or their habitats are rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments**. These include Areas of Special Biological Significance as identified by the State Water Resources Control Board; rare and endangered species habitat, **all coastal wetlands and lagoons**, all marine wildlife, and kelp beds; and indigenous dune plant habitats.*

***The Coastal Act emphasizes the importance of maintaining environmentally sensitive habitats** and further stresses that future development within or adjacent to sensitive areas must be appropriate with respect to type of use, siting, and design **to ensure that the sensitive areas are not degraded or threatened**. Only coastal-dependent uses are permitted within **sensitive habitat areas** including nature education and research, hunting, fishing, and aquaculture.*

Among the sensitive habitat areas found nearest the coast are the Monterey Bay itself, the delicate dunes and beaches, and the large sloughs and saltwater marshes--each with a different and changing degree of salinity. A unique community of vegetation and wildlife is supported in each area. Inland portions of the North Monterey coastal area also support

a diversity of sensitive habitats including: riparian corridors, freshwater marshes, and maritime chaparral. These have been threatened to varying degrees by agricultural and residential uses.

***Perhaps most unique among all of these habitats are the sloughs**, the estuarine waters resulting from the mixing of seawater with freshwater. **They are also some of the most sensitive.** The sloughs provide a sanctuary for harbor seals, sea otters, and a great variety of fish and birds.*

p. 34
***The list of rare and endangered species of plants and animals is lengthy for this area and many of these species exist only in the most sensitive and limited habitats. In order to preserve the viability of these habitats and the plants and animals they support, they must be protected from the damaging effects of development or inappropriate activities such as** off-road vehicle use, hunting, and **inappropriate spraying of pesticides and herbicides**. In some cases, **the protection warranted will entail public acquisition of property, and subsequent designation as a preserve or sanctuary with supervision of activities**. Such protection may be necessary for some of the dune areas along the coast which are still privately owned.*
...
*Protection in the form of land use regulation and design review of development projects in the vicinity of an environmentally sensitive habitat should be adequate in most other cases. Programs designed to alert the public to the locations of **environmentally sensitive habitats** and to educate them about **the habitat's uniqueness and fragility** may be a useful tool in protecting areas affording major public access.*

3. The California Invasive Plant Council (Cal-IPC) classifies Eucalyptus globulus as "**limited invasiveness**" – its lowest rating. Cal-IPC also notes that some groves are actually shrinking. Despite that, the MND repeatedly asserts that eucalyptus are invasive, such as these statements:

> "This project maintains and potentially expands native oak woodlands where they are currently threatened by **encroaching** non-native eucalyptus. (MND, p. 34)
> "ESNERR uplands now include almost 50 acres of the **invasive** non-native eucalyptus tree, Eucalyptus globulus." (MND, p. 5)

The MND references Cal-IPC but only for plants.

> ***BIO-13** – ... **The California Invasive Plant Council's (Cal-IPC)** high rated invasive weeds shall be removed from the project areas using manual or chemical methods for three years following initial eucalyptus tree removal. – MND, p. 38*

Why doesn't the MND mention Cal-IPC's designation for eucalyptus? Because it negates the rationale for this project.

4. Air Quality:
   Cutting down these trees would cause the **release** (due to loss of sequestration) of **1,451 metric tons of CO2** equivalent (CO2e, Ducks Unlimited stats[i]). Plus the emissions generated by the project are estimated at **268.84 metric tons of CO2** equivalent (CO2e).[ii] The estimated total is **1,720 metric tons of CO2 released.**

5. The eucalyptus trees also actively **absorb** and **mitigate CO2** in Monterey County, and they **generate O2**. The MND fails to mention these important positive impacts which this project would destroy.

   I found a range of values for CO2 absorption per tree, from 13 lbs per year to 48 lbs per year. That equates to **16,315 – 60,240 lbs of CO2 absorption per year**.

   In addition, there was a range for O2 production per tree – 200-6000 lbs per year.
   That equals **251,000 – 7,530,000 lbs of O2 per year** lost if this project goes through. Several sources said that one tree provides enough oxygen for two humans. Two trees provide enough for a family of four.

6. The MND compares project emissions to California as a whole. The appropriate metric is to reference Monterey County or this particular location. That allows the cumulative impacts in this particular area to be properly evaluated.

   This loss would combine with other Monterey County recent losses or projected losses due to development, such as the Veterans Cemetery (loss of coast live oaks), the Ferrini Ranch (loss of coast live oaks), the Big Sur Land Trust eucalyptus elimination project, and the proposed Monterey Downs development with its projected loss of approximately 40,000 coast live oaks. This is **local** cumulative loss of trees with its attendant impacts.

   Combine this with the rising death toll locally of trees due to drought. My family's neighbor just had three dead trees felled, with three more dead ones soon to be cut down close by. That is six large trees dying suddenly in less than an acre. This represents an ominous growing loss of carbon sequestration, a loss of CO2 mitigation, and a loss of O2 production.

   This county cannot afford to intentionally take more trees. Doing so contradicts this county's goals as well as state goals to reduce CO2.

   Climate change is now. If climate change is truly the emergency situation which local, state, and federal officials claim, then the loss of trees to ideologically driven projects with questionable benefits is a luxury we cannot afford.

7. Due to these facts, this project is in conflict with the Unincorporated Monterey County Greenhouse Gas Emissions Inventory 2005 Baseline Report, produced in 2010.

The County of Monterey has taken steps toward reducing its impacts on the environment by quantifying its 2005 GHG emissions from local government operations and its community. ***Staff and policymakers have chosen to take a leadership role in addressing climate change, and this leadership will allow the County of Monterey to make informed decisions to create and implement innovative approaches to reduce its emissions.***[iii]

8. CDFW is in violation of AB 32 for this project. AB 32 mandates that the state reduce CO2 emissions. CDFW is on the Climate Action Team charged with implementing AB 32.

The passage of AB 32, the California Global Warming Solutions Act of 2006, marked a watershed moment in California's history. By requiring in law a sharp reduction of greenhouse gas (GHG) emissions, California set the stage for its transition to a sustainable, low-carbon future.

... Pursuant to AB 32, ARB must adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

[AB32 states]

(a) Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

(b) Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state.[iv]

In 2006, California passed the Global Warming Solutions Act (AB 32) which charged the California Air Resources Board (CARB) with implementing a comprehensive statewide program to reduce greenhouse gas emissions. AB 32 established the following greenhouse gas emissions reduction targets ***for the state of California****:*

- *2000 levels by 2010*
- *1990 levels by 2020*
- *80% below 1990 levels by 2050*[v]

a. The net effect of this project is to increase CO2 emissions.

b. This project diminishes forest sequestration, in violation of the AB 32 Scoping Plan.

*The resulting AB 32 Scoping Plan was adopted by CARB [California Air Resources Board] in December 2008. It established the following measures that **the State will take to meet the greenhouse gas emissions reduction targets**:*

Item #14 on the CARB list is, *"Preserve forest sequestration".*

9. Eucalyptus groves are not deserts. They are habitat for hummingbirds, monarchs, honeybees, egrets, herons, hawks, owls, salamanders, newts, and a whole array of creatures big and small. These are ecosystems, communities, organic systems, connected webs, surviving in an increasingly challenging environment.

10. CDFW admits that eucalyptus groves provide valuable habitat.

    From CDFW News, March 2014 –

    > In Central California, the City of Merced's Wastewater Treatment Plant Wetlands offers 300 acres of seasonal wetlands that provide habitat for migrating waterfowl, song birds and raptors. **A eucalyptus grove on the property also supports great blue heron and great white egret rookeries.**

    Then why is CDFW proposing to remove valuable habitat?

11. Egrets and herons nest in colonies. Removing groves displaces **colonies** of birds.

12. There are 13 groves. CDFW plans to remove four at the present time. It may remove the others later. Why would CDFW remove nesting areas when birds are suffering so many stressors now?

13. Birds live in trees not just during breeding season, but throughout the year. This plan eliminates year-round living quarters for birds and other wildlife. This increases pressure on remaining groves, causing overcrowding, and birds will leave.

    The sloughs in Moss Landing and Watsonville have already seen a huge reduction of bird life over the years since European (non-native) immigrants started farming there. Bird populations overall are dropping drastically. Eliminating nesting grounds is counterproductive, and is the opposite of good land conservation and management.

    Especially when one of the groves is on a site called Hummingbird Island.

14. **Eucalyptus trees provide important winter forage for species such as monarchs, bees, and hummingbirds, because they flower from November – April. Barley grass and Coast Live Oak do not provide that forage.**

Monarchs and bees are already facing population declines and habitat loss. Many organizations are pledging to protect them. This project takes further habitat from these struggling species.

15. From the MND:

"Research done by ESNERR staff and graduate students has shown 1) that without control, local eucalyptus groves expand, displacing adjacent habitat, including native oaks, 2) that native amphibians are more abundant in local oak woodlands than adjacent eucalyptus stands, and 3) that eucalyptus growing near ESNERR ponds utilize more water than nearby oaks (ESNERR, unpublished data)" – p. 5-6

- This is not peer-reviewed data.
- If these trees are so expansive, why haven't they taken over the slough? These groves have been in place since before the 1930s as far back as the late 1800s. That's 100 years or more. This may be one reason Cal-IPC downgraded its rating of eucalyptus to limited invasiveness.
- Water use is different depending on the species. Is CDFW suggesting that willows or other plants or trees should be eliminated simply because they use more water than oaks? These are facts of life, not crimes.
- Animals have preferred habitat – another fact of life. Monarch butterflies, for example, prefer eucalyptus as a food source and to live. Destroying habitat preferred and/or enjoyed by native species to theoretically increase another species is illogical. Again, the North County Plan repeatedly calls the slough area "sensitive habitat". This project violates the plan by disrupting intact sensitive habitats in place for about 100 years.
- It is natural for habitats to expand and contract. Ecosystems are not set in stone. Oak habitat is expanding with the drought and warming climate. Colder climates favor other trees. What point in time is CDFW declaring the "perfect" time to judge ecosystem purity?

16. Elkhorn Slough personnel have reportedly stated that poop from nesting egrets and/or herons eventually kills the host tree.[vi] If eucalyptus trees are killed, the birds will nest in and kill other trees including natives. By cutting down the eucalyptus, CDFW would, in effect, be killing other trees.

17. The MND jumps from "preliminary data **indicate**...this **suggests**... removing the eucalyptus could **potentially** increase the amount of water..." (p.30) to the conclusion "Research done by ESNERR staff and graduate students **has shown...** 3) that eucalyptus growing near ESNERR ponds utilize more water than nearby oaks (ESNERR, unpublished data)" (summary on p. 5-6)

> ***Preliminary data*** *from ESNERR researchers* ***indicate*** *that eucalyptus transpire approximately twice as much as adjacent coast live oaks. This* ***suggests*** *that ESNERR eucalyptus use more water than oaks, and put added pressure on already stressed underground water reserves in the region. Therefore, removing the eucalyptus* ***could potentially*** *increase the amount of water available to Reserve ponds that support two listed amphibians, the California red-legged frog and the Santa Cruz long-toed salamander, and one State species of concern, the western pond turtle. (p. 30)*

Eucalyptus may scavenge water more readily from the air and from fog since it is adapted to arid climates. Fog drip from leaves can also mitigate groundwater uptake.

Underground reserves are stressed by area agriculture which has unsustainably been drawing down the aquifers for years. To blame this on trees is misplaced. CDFW is basing a removal policy by scapegoating and fails to confront the real problem.

How much water would be saved by removing land from agricultural use in the vicinity of the Reserve? This would have many other benefits including lessened erosion and silting of waterways, decreased air and water contamination from herbicides, pesticides, and fertilizers, and the possibility of revegetation.

18. Eucalyptus groves actually create moisture zones and stay green during drought conditions – extremely valuable for the plants, animals, and insects that depend on them.

> *Preliminary data from ESNERR researchers indicate that **eucalyptus transpire approximately twice as much as adjacent coast live oaks**. (p. 30)*

California is in a horrible drought. No one has any idea when it will end.

In the MND photos of "before" and "after" tree removal – p. 19-25 --

a. Which landscape is going to be drier?
b. Which photos show cool, shade-creating, earth-shielding habitat?

19. "Plantings will be maintained by watering and weeding. Plants will be watered the first summer if necessary."[vii]

This project will not only remove habitat and moisture-retaining vegetation and trees, but it will require inputs of scarce water. With this drought, plantings will require constant water and care.

In a very real sense, this project is not sustainable. Further reading under "Revegetation" (p. 9-10) shows big questions about whether and which "native" species will survive, and the amount of tending necessary for these "native" species.

If they are native and adapted to this area, shouldn't they thrive more easily than non-native species?

20. "The removal of the groves will convert 13.6 acres of eucalyptus forest to grassland." p. 163, MND

Fire is not a major issue for the Reserve, since there are no dwellings and few buildings in the slough. Fire is not mentioned in the MND. Yet, fire was raised by CDFW at the Planning

Commission hearing. Grasslands are a very fire-prone setting, and CDFW seeks to expand existing grasslands.

> "...it cannot be over emphasized, moisture content is one of the most important factors in determining wildfire risk... Fire Science has proven that every living tree — regardless of its species — due to its moisture content and canopy coverage of ground fuels, contributes to wildfire hazard **mitigation**." -- fire expert David Maloney

It is surprising that the 2009 letter from David Maloney[viii] and information from other fire experts have not been used to create a more scientific policy within CDFW and other state agencies. By removing the eucalyptus that provide windbreaks and fire damping due to their moisture content and transpiration, CDFW is creating a greater fire risk on the Reserve. Since CDFW has not utilized this type of expertise, this raises questions about the scientific basis of other statements CDFW makes in this MND.

David Maloney, retired firefighter and expert on the panel investigating the Oakland-Berkeley panel cites the Fire Protection Handbook:

> *"Two conditions of fuel moisture have major influence on the rating of fuel types. One concerns the greenness, or curing stage, of vegetation. The other relates to the shade and protection furnished by green timber.*pg. 13-63... *it cannot be over emphasized, moisture content is one of the most important factors in determining wildfire risk.*
> *[It was the logging of the trees on Angel Island in 1999 that caused the Angel Island Fire of 2008.]*
>
> *"While fuel is a key ingredient for any blaze, and fuel accumulations can exacerbate fire intensity, most large blazes result from drought and wind – not fuels. Yet, because fuel treatments are emphasized in management prescriptions, the general public is led to believe that fuels are the driving force in large blazes and, by inference, that fuel reduction by tree thinning will prevent large fires." Wild Fire: A Century of Failed Forest Policy. Pg. xiii, part of the section entitled 'Myth: Big Fires Are the Result of Too Much Fuel.' Edited by George Wuerthner.*
>
> *.. The [East Bay Hills FEMA project] wants to give a high fire hazard rating to green (living) trees and cut them down, because they did not originate in California, when it has been shown over and over again that green trees, regardless of where they originated, are a bulwark against wildfire because of the moisture they contribute to the ground fuels and because they act as windbreaks.*
>
> *... **The fuel hazard ratings relative to the Eucalyptus trees are ideologically driven and therefore cannot be trusted**...*
>
> *In fact one of the Eucalyptus species mentioned, the Blue Gum, is very fire resistant... The Blue Gum has a thick bark, branches that are high from the ground, and because it*

evolved in the arid and fire rich climates of northern Australia and Tasmania, an astounding ability to retain moisture, which ability gives it a high bark water content."

"Sound wildfire hazard mitigation does not make a distinction between whether a species was here before or after Columbus landed in the Caribbean. Sound, effective, wildfire hazard mitigation does not determine that a plant or species is a fire hazard because of where it originated.

Such a determination..gives rise to propagandistic statements which are designed to scare the public, but which have no basis in fire science. "

He goes on to mention that though there are references to coniferous trees as a fire hazard in the Fire Protection Handbook, there is not one reference to eucalyptus trees.

21. CDFW wants to kill trees and leave them in place as snags.

From fire expert David Maloney:

> Again, from Vol. II, page 13-62 of the Fire Protection Handbook,
> "Snags, or tree stumps, are one of the most important aerial fuels that influenced fire behavior. Although green trees greatly outnumber snags in most forests, more fires start in snags because they are drier and are arranged for easier ignition."[ix]

Internet ad from CalFire and PG&E:

> Remove your dead trees.
> Reduce your wildfire risk.

So, by increasing grasslands and intentionally leaving dead trees in place, CDFW is actually increasing the fire risk at ESNERR.

22. CDFW contradicts its assertion that eucalyptus trees eliminate "native" trees and plants by showing that **native species are co-mingling with eucalyptus**.

> Pg. 17 "At Cattail Swale, the removal of eucalyptus is expected to reveal **small but mature oaks currently growing in the understory of tall eucalyptus trees** (**Figure 6**). "
> Pg. 9 "The second [reference] site is the Cattail Swale eucalyptus grove. **Germination and re-colonization of an existing native seedbank** occurred after the removal of a thick cape ivy understory, opening up space and **producing a rich assemblage of coast live oak woodland habitat and several native herb species not previously recorded on the ESNERR plant list**."

This is more evidence that this project springs from ideology and not from an objective reality-based perspective. David Theodoropoulus has extensively documented native species living alongside so-called non-native species including eucalyptus.

23. From the MND:

> "Historically dominated by coastal prairie, coastal scrub, freshwater meadows and coast live oak woodlands, ...Eucalyptus trees were planted on the property before the **1930s**,..." (p. 5)
> ...Beginning in the mid- to late-1800s, coast live oaks and shrubs were cleared in many parts of the eastern Elkhorn Slough watershed for firewood, timber and to open space for agricultural use. In **the late 1800s** and **early 1900s**, eucalyptus trees were popular due to their rapid growth." (p. 30)

This document is not consistent in its time frames. When was the eucalyptus planted?

At what point in time is the statement "historically dominated" true? What is historic? At which time period?

The present habitat has been in place for 100 years or more, and functioning despite the many severe changes and stresses to the entire region's ecosystem. That is an enormous plus for all the creatures that rely on it.

This is no longer the world of the 1880's, the 1900s, or 1930s. Earth's climate is changing dramatically, and the region is not at all the ecosystem it was 100 years ago. To attempt to "go back" given current levels of environmental degradation and instability, and climate change is a folly. This is not scientific to any degree and is ungrounded wishful thinking.

24. Viewscape degradation and information in the MND is ideologically driven. Statements such as "The removal of eucalyptus would **increase the visibility** of grasslands and oaks from ESNERR's South Marsh Trail (**Figure 8**)...At South Marsh (**Figure 5**), the removal of eucalyptus would **improve views** from ESNERR's South Marsh trail of one freshwater pond and tidal wetlands currently hidden behind the Trees...**Historically dominated** [These groves have been in place for about 100 years] by coastal prairie, coastal scrub, freshwater meadows and coast live oak woodlands, ESNERR uplands now include almost 50 acres of the **invasive** non-native eucalyptus tree, *Eucalyptus globulus* and approximately one acre of *Eucalyptus camaldulensis* spread out over 13 groves. "

Outside of those who believe in "good" trees and "bad" trees, most people see beautiful nature and scenery. When nature is disrupted or destroyed, most people see that as a bad thing and ugly. Trees are a beautiful part of scenery. Only ideology puts blinders on that.

25. Some of these groves are at the water's edge. The North County Land Use Plan established buffer zones for development because of the sensitive nature of the Slough. This project violates that.

26. Herbicide use will be harmful to the Slough.

RoundUp Pro (active ingredient **glyphosate**), R-11, **Garlon 4** (active ingredient: **triclopyr ester**) with 70% Hasten.
As an example of impacts:

a. Glyphosate has now been classified a Class 2A carcinogen (probable).
b. It does not biodegrade, but bioaccumulates in the environment, impacting all species and their offspring.
c. It causes genetic damage.
d. RoundUp targets an enzyme which is also found in the bacteria in the intestines of humans. Presumably, this bacteria is in the intestines of other species as well.
e. Plants become resistant to this herbicide, creating superweeds and more problems, with truly invasive weeds. Using the herbicides begins a downward process.
f. Glyphosate is showing up in human breast milk and urine, even in those who eat only organic produce. What about otters, seals, and other animals in the slough?

Triclopyr/Garlon
"The MSDS for Garlon 4 Ultra states that it is a health hazard:

- "This product is a **"Hazardous Chemical"** as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200."
- "Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312: **Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard"**

Marin Municipal Water District (MMWD) hired a consulting firm to conduct a risk assessment of herbicides that MMWD was considering for possible use. The risk assessment reports the following risks of triclopyr, the active ingredient in Garlon:

- "Triclopyr poses the **highest risk to workers, the general public and most aquatic and terrestrial wildlife**. The primary factor contributing to high human risk is dermal exposure from handling the chemical during applications or from vegetation contact."
- "Triclopyr...[is] **inherently more toxic to mammals. Triclopyr is particularly toxic to pregnant animals, causing severe birth defects** in the fetus if the mother is exposed during pregnancy...Triplopyr...[is] an order of magnitude more **toxic to birds** than the other herbicides, and triclopyr is the **most toxic of the five herbicides to bees**..."
- "Although most of the field studies designed to measure triclopyr water contamination indicate that triclopyr will not run off in substantial amounts, actual monitoring data indicate that **triclopyr contamination of waterways is occurring**...In California, where triclopyr is used...11.5% of 227 samples contained detectable triclopyr." [x]

27. CDFW ignores the research of Cleve Backster and others, demonstrating the intelligence, sentience, and communication abilities of plants and trees with other species.[xi] This further demonstrates the importance and interconnectedness of habitats, and the trauma done when habitats are disrupted.

28. Invasion biology is an ideology. It is very controversial in the scientific community because of the lack of science to support it and many failures of "restoration" projects. Unfortunately, this belief system has become a sacred cow in government circles, encouraged by the herbicide companies that benefit from its eradication methods.[xii]

    From the California Invasive Plant Council:

    > Speaking of sponsors, the list of institutional supporters in the last issue of Cal-EPPC News accidentally left out **Mike Krebsbach of Monsanto**. He has been one of our most consistent supporters, and we want to be sure to give him credit here. His contributions not only helped keep conference costs low, but also helped print the 2003 Wildland Weeds of California calendar.[xiii]

29. It is surprising when a European immigrant-based society talks about invasiveness. Eucalyptus trees don't pave over streams, meadows, or woodlands – all important habitat – to build freeways, shopping centers, or housing developments. They don't build polluting factories or power plants, drive polluting cars, or contaminate aquifers.

30. CDFW claims habitat enhancement is the goal, yet this agency promotes hunting. These two activities are mutually exclusive. Hunting disrupts and harms wildlife populations, and inflicts trauma on ecosystems. Especially in view of the sharp declines in bird populations in recent years, this is not logical. Hunting is even allowed in the environs of the Slough.

31. As stated in #17, if habitat degradation is a focus, it would be far more productive for CDFW to buy adjacent land degraded by agriculture in order to restore the soil vitality and replant the stripped land with coast live oak and habitat.

    That would cause a reduction of silt, pesticides, fungicides, fertilizers, loss of habitat, erosion, soil compaction, perhaps overgrazing, aquifer depletion, heavy equipment, and pollution. Why isn't that on the table? That would be a win-win for everyone.

These are some of the main issues. Time does not permit a more extensive critique.

These trees are mature, this habitat is well-established. Benefits to maintaining these trees and plants in place are moisture retention, protection of many species, oxygen creation, sequestering and reduction of CO2, the elimination of hazardous herbicides, and lack of disturbance of this sensitive ecosystem.

Conclusion:
The project creates unacceptable impacts which cannot be mitigated. It is in an area which Monterey County has specifically singled out for protection due to its sensitivity and high value. This project is also proposed during a time of major environmental changes, already taking a huge toll on ecosystems and species.

Protecting these healthy and adapted habitat environments should be the highest priority of CDFW and this county.

Please overturn the Planning Commission's approval and deny this project.

Nina Beety
Monterey, CA
nbeety@netzero.net

Documents:

Email from Dave Feliz, Reserve Manager, Elkhorn Slough Ecological Reserve
Elkhorn Slough National Estuarine Research Reserve; July 23, 2015

Another Kind of Genocide -- Review of Invasion Biology: Critique of a Pseudoscience
Toby Hemenway
http://www.patternliteracy.com/201-another-kind-of-genocide

CDFW News, March 2014
https://cdfgnews.wordpress.com/2014/03/page/2/

Assessment of Tasmanian blue gum (Eucalyptus globulus)
California Invasive Plant Council (Cal-IPC), March 2015
https://savesutro.files.wordpress.com/2015/04/eucalyptus_globulus-final-reassessment-by-cal-ipc.pdf

Letter, David Maloney, expert on Task Force on Emergency Preparedness and Community Restoration, to East Bay Regional Park District, October 29, 2009
http://www.saveeastbayhills.org/uploads/4/7/8/8/47884333/maloney.pdf

North County Land Use Plan
http://www.co.monterey.ca.us/planning/docs/plans/NC_LUP_complete.PDF

Unincorporated Monterey County (DRAFT) Greenhouse Gas Emissions Inventory
2005 Baseline Report
http://www.co.monterey.ca.us/planning/major/Pebble%20Beach%20Company/Pebble_Beach_DEIR_Nov_2011/Pebble_Beach_DEIR_Admin_Records_Nov_2011/AMBAG/AMBAG_2010_Monterey_County_GHG_Inventory_2005.pdf

[i] MND, p. 163, 165

[ii] MND, p. 163, 165

[iii] Unincorporated Monterey County (DRAFT) Greenhouse Gas Emissions Inventory
2005 Baseline Report, p. 50

[iv] http://www.arb.ca.gov/cc/ab32/ab32.htm

[v] Unincorporated Monterey County (DRAFT) Greenhouse Gas Emissions Inventory
2005 Baseline Report, p. 8

[vi] Private email

[vii] MND, p. 10

[viii] Served on the 1991 ***Task Force on Emergency Preparedness & Community Restoration*** created to investigate causes of the 1991 Oakland-Berkeley Hills Fire to prevent recurrence

- ***Chief of Fire Prevention*** at **Oakland Army Base,** appointed by U.S. Dept. of the Army (1989)
- Firefighter, Oakland Fire Dept., retired 1988

Link to letter -- http://www.saveeastbayhills.org/uploads/4/7/8/8/47884333/maloney.pdf

[ix] http://www.saveeastbayhills.org/uploads/4/7/8/8/47884333/maloney.pdf

[x] http://milliontrees.me/herbicides/

[xi] The Secret Life of Plants, Tompkins and Bird, Harper & Row, 1973

[xii] The New Wild by Fred Pearce
Rambunctious Garden by Emma Marris
Where do camels belong? by Ken Thompson
Invasion Biology: Critique of a Pseudoscience by David Theodoropoulos

[xiii] http://www.cal-ipc.org/resources/news/pdf/caleppc_news2368.pdf

From : "Feliz, Dave@Wildlife" <Dave.Feliz@wildlife.ca.gov>
To : "'nbeety@netzero.net'" <nbeety@netzero.net>
Subject : Elkhorn eucalyptus project
Date : Thu, Jul 23, 2015 01:19 PM

Ms Beety :

Thanks for your interest in the Eucalyptus removal project. In response to your inquiry, these are the outreach efforts we engaged in to get the word out about the project:

Public Meeting:
Feb. 7, 2012, North County Land Use Advisory Committee, 29 Willow Rd. Las Lomas. Outreach to ESNERR staff and volunteers. Flyers were posted at the Moss Landing Post Office and the project was included in the Committee's public agenda.

Public Review Period:
December 15, 2014 through Jan 22, 2015; five signs describing the project were posted at 1700 Elkhorn Rd. Four signs were posted along the public South Marsh Loop Trail, one at each eucalyptus grove proposed for removal. One sign was posted at the Elkhorn Slough Visitor's Center along with the MND document for public review. The Elkhorn Slough Foundation (ESF) website was the "off-site" location for posting the MND document for public review. A description of the project and the MND document were posted on the ESF website December 15, 2014 through January 22, 2015. This document was also available for the CDFW website.

Public Hearing:
July 8, 2015, Monterey County Planning Commission, 168 West Alisal St. Salinas. Five Notice of Public Hearing signs were posted on June 28, 2015 at 1700 Elkhorn Rd. Four signs were posted along the public South Marsh Loop Trail, one at each eucalyptus grove proposed for removal. One sign was posted at the Elkhorn Slough Visitor Center.

I would like to invite you to come out to the Reserve. I would personally show you the sites where we hope to work, and discuss the project with you. Please call me on my cell phone at 831 595 6605 and we can set a date for your visit.

Dave Feliz
Reserve Manager
Elkhorn Slough Ecological Reserve
Elkhorn Slough National Estuarine Research Reserve
1700 Elkhorn Road
Royal Oaks, CA 95076
(831) 728-2822

Every Californian should conserve water. Find out how at:

SaveOurWater.com · Drought.CA.gov

October 29, 2009

FROM:
David Maloney
San Francisco CA

TO:
Brian Wiese
Chief, Planning and Stewardship
East Bay Regional Park District

Dear Mr. Wiese:

I retired from the Oakland Fire Department in 1988. In 1989 I was appointed by the United States Department of the Army to be Chief of Fire Prevention at the Oakland Army Base. In 1991, I was appointed to serve on the Task Force on Emergency Preparedness and Community Restoration. This task force was formed to investigate the causes of the most destructive wildland/urban interface fire in the history of the United States, the Oakland-Berkeley Fire of 1991, and make recommendations to prevent its recurrence.

Following are my comments about the East Bay Regional Park District's Wildfire Hazard Mitigation Plan (the Plan), and EIR.

An inordinate amount of the Plan is an attempt at land transformation disguised as a wildfire hazard mitigation plan. If it is implemented it will endanger firefighters and the general public; and it will be an outrageous waste of the taxpayer's money.

The objectives of a land transformation plan are different than the objectives of a wildfire mitigation plan. The only way a land transformation plan can succeed in masquerading as a wildfire mitigation plan is if it treats important data needed to compose a sound wildfire mitigation plan in a superficial manner, or ignores such data or circulates misinformation.

The Plan submitted to the East Bay Regional Park District (hereafter referred to as the Park, or EBRPD) does all three. It omits important Fire Science principles, disseminates misinformation about selected fuels, and ignores data that would be contrary to its aim of land transformation.

CLEAR CUTTING

Section IV: Fuel Treatment Methods; subsection A.2 of the Plan advocates clear cutting of trees. Not only does it advocate clear cutting with the phrase "...completely removing an overstory canopy;" it justifies this by standing fire science on its head by ignoring the

significant role that tree canopies play in facilitating moisture which dampens ground fuels, and ignoring that volatile grasses will grow on the ground below the canopy gaps.

Clear cutting is anathema to the Fire Service. Clear cutting to effect wildfire hazard mitigation violates every Fire Science principle relative to wildfire mitigation. Clear cutting dramatically increases the chance of a wildfire. It is a tool of land transformation. Therefore the Plan has a prominent self-contradiction.

Fire Science has proven that every living tree — regardless of its species — due to its moisture content and canopy coverage of ground fuels, contributes to wildfire hazard mitigation.

"The shade and protection afforded by timber stands influence fuel type ratings due to favorable fuel moisture conditions that are created. In a dense forest, ground fuels are protected from the sun and wind. Temperatures and wind velocities are lower so that moisture does not evaporate as readily from the dead fuels situated beneath dense timber canopies." The Fire Protection Handbook (20th edition, 2008), published by the National Fire Protection Association, Volume II, pg. 13-63.

"If too much wood was in the forests, it seemed intuitive, to some people, that cutting down tress must help the situation. Many pointed to the massive fires in the 1990's as evidence that not enough logging was going on. Yet, throughout the [20th] century large fires had followed logging." Burning Questions: America's Fight With Nature's Fire, pg. 253, by David Carle.

[It was the logging of the trees on Angel Island in 1999 that caused the Angel Island Fire of 2008.]

"While fuel is a key ingredient for any blaze, and fuel accumulations can exacerbate fire intensity, most large blazes result from drought and wind – not fuels. Yet, because fuel treatments are emphasized in management prescriptions, the general public is led to believe that fuels are the driving force in large blazes and, by inference, that fuel reduction by tree thinning will prevent large fires." Wild Fire: A Century of Failed Forest Policy. Pg. xiii, part of the section entitled 'Myth: Big Fires Are the Result of Too Much Fuel.' Edited by George Wuerthner.

There is not one single fire science authority who supports clear cutting for the sake of wildfire hazard mitigation.

MOISTURE

"Two conditions of fuel moisture have major influence on the rating of fuel types. One concerns the greenness, or curing stage, of vegetation. The other relates to the shade and protection furnished by green timber." The Fire Protection Handbook, previously cited, pg. 13-63

The Plan ignores the relationship between specific tree moisture, amount of canopy protection afforded to ground fuels by copses of trees due to the shade and windbreak these trees provide, amount of ground moisture which is created and dependent on the tree canopy above the ground, and ground moisture created by the size and type of the leaves of trees. (One of the major contributions leaves make to wildfire hazard mitigation is collecting moisture and dripping it onto the ground.)

Even though moisture is a critical key element in evaluating wildfire hazard, there is no mention of use of a hygrometer to evaluate how much moisture, according to season, is present in the various sections of the EBRPD, especially those sections where clear cutting might be considered.

Additionally, there is no mention of the specific hygroscopocity, according to season, of the various species of trees within the Park, especially of those species of trees for which clear cutting is recommended.

There is no discussion, or even a mention, of the average daily, weekly, and monthly dew, dewfall and dew point in those sections of the EBRPD affected by the Plan.

The Plan confuses cloud cover and precipitation with moisture. Moisture is different than cloud cover and precipitation. Cloud cover and precipitation contribute to moisture levels, but they are not the sole determinants of moisture. The Plan barely mentions the moisture content of the lands and sections of the East Bay Regional Park District. Again, it cannot be over emphasized, moisture content is one of the most important factors in determining wildfire risk.

The EBRPD is located in a moisture rich environment. Its location is the envy of wildfire managers across our nation. Yet, there is not one chart or graph that shows the average weekly and monthly moisture content within the Park's boundaries or within specific sections of the Park, especially within those sections where it is proposed that clear cutting of trees take place. There is not one chart that compares the amount of moisture in the holdings of the EBRPD with the moisture content of other areas in California and the United States.

Are these omissions because showing the moisture content of the EBRPD, would lead to a downsize of the Plan, thereby negatively impacting land transformation?

[It was the moisture laden air coming from the Pacific Ocean through the Golden Gate, crossing San Francisco Bay and interfacing with the Oakland Hills Fire of 1991 that lowered the temperature of the fire sufficiently to halt its spread and allow firefighters to contain it. The fire began in grasses, spread to the rooftops of houses, where it attained sufficient heat to dry out the moisture in the trees of the East Bay Hills, and then caught the trees on fire.]

PRESCRIBED BURNING

The Plan recommends prescribed burning in a cavalier manner. Prescribed burning is a very serious and dangerous undertaking. It is only to be used narrowly and judiciously. It is only to be used to effect wildfire hazard mitigation by clearing underbrush and ground fuels, and even then it is used sparingly. It is never to be used to effect land transformation by preventing trees from sprouting.

Due to the fact that so many prescribed burns have "escaped" the boundaries to which it was thought they would be confined, there is more and more momentum in the Fire Service to use prescribed burns less and less. A moratorium was put on prescribed burns after the Bandelier National Monument Fire in the year 2000. That fire was a prescribed fire that got out of control and burned 47,650 acres and destroyed 235 homes. The moratorium was lifted after new, more stringent guidelines governing prescribed burns were promulgated.

Still, prescribed burns continue to get out of control with alarming frequency. In August of 2009 the Big Meadow Fire in Yosemite began as a prescribed fire that was planned to burn 91 acres. It got out of control and burned 7,425 acres. That same month a prescribed burn in Scofield, Utah, got out of control and almost burned down 50 homes.

The Plan states in Appendix G page 5, "The California Invasive Plant Council has published a manual on the use of fire as a tool for controlling invasive plants that should be referred to for further information than that provided here."

The California Invasive Plant Council is not a fire prevention or fire suppression organization. Its primary goal is land transformation. Why is an organization that is not a fire service organization, but primarily a land transformation organization, being used as a reference for the very dangerous undertaking of prescribed burning? Is it because the objective is not wildfire hazard mitigation, but land transformation?

Again, this Plan treats prescribed burning in a cavalier manner, which is inconsistent with safe wildfire hazard mitigation.

INVASIVE SPECIES

Sound wildfire hazard mitigation does not make a distinction between whether a species was here before or after Columbus landed in the Caribbean. Sound, effective, wildfire hazard mitigation does not determine that a plant or species is a fire hazard because of where it originated.

Such a determination is putting idealogical or economic considerations ahead of the safety of firefighters and the public, and gives rise to propagandistic statements which are designed to scare the public, but which have no basis in fire science. Below are several examples of such statements from the Plan.

"Eucalyptus is well known for its long distance ember distribution, casting firebrands miles from the flaming front to ignite spot fires in grass, brush or roofs ahead of the main fires."

"The presence of volatile oils in the trees increases the speed of fire spread, total output and overall ignitability. Ignited leaves and bark are easily lofted into the air by heavy winds and increase the potential for starting new fires long distances from a fire."

"The size of leaves and bark from mature eucalyptus trees are typically large enough to ensure that the ember is still burning (versus small particles that could be extinguished in flight) when it lands. Heat output from mature eucalyptus fires is high when sufficient fuel has accumulated in the area."

To refute these statements it is worth quoting extensively from Vol. II, page 13-62 of the Fire Protection Handbook.

"Aerial Fuels: Tree Branches and Crowns. " The live needles of coniferous trees are a highly flammable fuel. Their arrangements on the tree branches allow free circulation of air. In addition, the upper branches of trees are more freely exposed to wind and sun than most ground fuels. These factors, plus the volatile oils and resins in coniferous needles, make tree branches and crowns important components in aerial fuels."

Nowhere in the twenty editions and tens of thousands of pages of the Fire Protection Handbook is there a mention of the leaves or bark of the Eucalyptus trees. The only aerial fuel singled out for mention because of its high flammability and volatility are the needles of coniferous trees. The oils and resins of Euclyptus leaves and barks are not mentioned because they are not as flammable as the oils and resins of the needles of coniferous trees.

If the leaves and bark of Eucalyptus trees were more of a fire hazard than the thousands of other species of trees that are in California it would be noted in the Fire Protection Handbook.

[Any tree, no matter what its species, that is close to ignition point or is on fire, is going to have its sap, resins, and oils boiling.]

Again, from Vol. II, page 13-62 of the Fire Protection Handbook,

"Snags, or tree stumps, are one of the most important aerial fuels that influenced fire behavior. Although green trees greatly outnumber snags in most forests, more fires start in snags because they are drier and are arranged for easier ignition."

"Burning embers blown from shaggy-barked snags are prolific starters of spot fires."

There is no mention of any particular species of tree. The entire passage concerns dead fuels. Some people have it backwards. They want to give a high fire hazard rating to

green (living) trees and cut them down, because they did not originate in California, when it has been shown over and over again that green trees, regardless of where they originated, are a bulwark against wildfire because of the moisture they contribute to the ground fuels and because they act as windbreaks.

From page 13-63 of the Fire Protection Handbook: *"As the amount of flammable materials in a given area increases. The amount of heat a fire produces also increases. The hottest fires, as well as those most difficult to control, occur in areas containing the greatest quantity of fuel."*

The statement from the Plan: "Heat output from mature Eucalyptus fires is high when sufficient fuel has accumulated in the area" is misleading and disingenuous. It strongly, and erroneously, implies that the heat from a Eucalyptus forest fire is greater than the heat from a forest fire involving other species of trees. In fact, the heat generated by a forest fire is not dependent on the species of tree involved in the fire, but on the quantity of fuel in the area of the fire.

The Fire Protection Handbook on page 13-63 of volume II addresses the issue of spot fires.

"The development of spot fires depends not only on topographic and weather factors but also on the character of the fuels in the main fire and fuels beyond the main fire. In the main fire, rotten, shaggy barked snags, such as broken-topped hemlock snags, and large quantities of ground fuels, such as heavy logging slash, are the fuels most likely to cause spot fires."

No species of living tree is singled out as being more likely to cause spot fires than ground fuels or dead fuels, because ground fuels and dead fuels are more likely to cause spot fires than living trees no matter what their species.

On page 13-64, Vol. II, of the Fire Protection Handbook is a section dealing with the characteristics of crown fires. None of the various species of Ecualyptus tree is mentioned in this section. Why not? Because any species of living tree that has had the moisture dried out of it by a fire, and then catches fire, can "throw burning embers far out ahead of the main fire."

Table 13.5.3 on page 13-63 vol. II of the Fire Protection Handbook gives the time lag relationship to fuel size for dead fuel moisture. This table should have been used as a reference point by the authors of the Plan, and coordinated with the moisture levels of the land holdings of the EBRPD.

The fuel hazard ratings relative to the Eucalyptus trees are ideologically driven and therefore cannot be trusted.

In fact one of the Eucalyptus species mentioned, the Blue Gum, is very fire resistant.

As S.T. Michaletz and E.A. Johnson showed in their article "Heat Transfer Processes Linking Fire Behavior and Tree Mortality," the three characteristics that determine a tree's ability to withstand fire are the thickness of its bark, the height of its branches from the ground and its bark water content.

The Blue Gum has a thick bark, branches that are high from the ground, and because it evolved in the arid and fire rich climates of northern Australia and Tasmania, an astounding ability to retain moisture, which ability gives it a high bark water content.

The Plan makes no mention of the ratio of surface area to volume of a wildfire fuel. This is an important ratio in contributing to determining the flammability of a wildfire fuel.

RECOMMENDATION ON HOW TO IMPROVE THE PLAN:

Prepare a grid map for EBRPD land holdings. Set up a rotational schedule so that every four or five years ground crews have gone into each section and removed ground fuels and ladder fuels. This is ecologically safe and will cost the taxpayer a fraction of what the other methods and schedules in the proposed Plan will cost.

Pay attention to the causes of wildfires as listed in the Fire Protection Handbook, Vol II. Page 13-56, table 13.5.2:

1) Arson: 25-39% of wildfires are caused by arsonists.
2) Trash Burning – 18-23%
3) Careless Smoking – 17-19%
4) Miscellaneous/unkown- 10-14%
5) Lightning- 9%
6) Machine use – 7-8%
7) Railroads- 5%
8) Campers- 3-6%

Develop programs that will specifically address and preclude fires due to the above reasons.

CONCLUSION:

The Plan has serious flaws that need to be addressed and rectified. Among these flaws are erroneous explanations of fire dynamics.

These erroneous explanations lead the public to believe statements such as, "The leaves of Eucalyptus trees are oily and so are highly flammable," which simplify and reduce fire science and fire dynamics to a highly inaccurate sound bite; and apparently are designed to mislead the public, and thereby enlist public support for a fundamentally flawed

wildfire hazard mitigation agenda, which, if implemented, will have major negative ecological and financial repercussions on the taxpayer.

There is nothing wrong with advocating for native plant restoration. There is nothing wrong with advocating for land transformation. There is everything wrong with trying to effect either one or both under the guise of wildfire hazard management. It injures the reputation of the fire service; endangers the firefighters, who will be called to fight the fires that will be caused by improper wildfire hazard management due to putting ideology ahead of fire science; and imperils the public.

David Maloney:

- Served on the 1991 ***Task Force on Emergency Preparedness & Community Restoration*** created to investigate causes of the 1991 Oakland-Berkeley Hills Fire to prevent recurrence
- ***Chief of Fire Prevention*** at **Oakland Army Base**, appointed by U.S. Dept. of the Army (1989)
- Firefighter, Oakland Fire Dept., retired 1988

http://www.patternliteracy.com/201-another-kind-of-genocide

Another Kind of Genocide

By Toby Hemenway, permaculture expert and author of Gaia's Garden

Review of *Invasion Biology: Critique of a Pseudoscience,* a book by David Theodoropoulos

Avvar Books, Blythe CA. 2003. 237+xiv pp. Paper. $14.50

One of my favorite ways of setting off small explosions is to tell a group of gardeners that I don't dislike invasive plants. Since the polarization over the natives-versus-exotics issue is fierce, the discussion quickly heats up. But lately I've noticed some thinning of the ranks of the natives-only army, and the debate has grown much more nuanced and sophisticated. Many people still cling to the simplistic battle cry of "natives good, exotics bad" that was once almost the only view to be heard—or to get funding. But the murmurs of a few questioning voices have now grown to a full-scale argument, with a growing body of data on the "don't blame exotics" side.

David Theodoropoulos, a conservationist and founder of an excellent resource for seeds of multi-functional plants, J.L. Hudson Seedsman, has waded into the battle with an arsenal of scholarship. His book, *Invasion Biology: Critique of a Pseudoscience*, ranges beyond an examination of invasive-plant science (more properly, the lack it) and also explores the psychological, political, and cultural reasons behind our eagerness to hate certain species.

Theodoropoulos opens by reviewing the underpinnings of the anti-exotics movement, or invasion biology—the idea that certain organisms belong in certain places, and others don't. Quickly we see that unlike most scientific reports, papers in even academic journals such as Conservation Biology and Restoration and Management Notes bristle with xenophobic rhetoric: "all [species] should be treated as threats . . . unless proven otherwise." Species are labeled "nefarious," "stealing," "stormtrooper plants," and "intruders" that should be "weeded out" to "prevent their escape." Hardly the language of objective science.

Good science also requires that definitions and operating terms be rigorous and uniformly applied. Yet invasion biologists have not defined their terms and use them in varying, idiosyncratic senses. The usage of the words native, exotic, diversity, natural community, and other terms slip and slide in Humpty Dumpty fashion: The words mean whatever they want them to mean. What is a native? In the most recent one percent of the Earth's history, figs and breadfruit have grown in Wyoming, and neotropicals in Alaska. Elms and chestnuts thrived in California in the early Pleistocene—just yesterday. But no one calls them native to those places. And many species labeled as native turn out to have arrived a few years before, or a century ago, or 500 years. Native seems to mean simply, "It was here when I got here."

What defines a native's range? Monterey cypress, osage orange, and black locust are being exterminated as exotics only 100 miles from their accepted native habitat. Yet species can naturally extend their range that far in a few years.

And what is diversity? A patch of exotics and one of native plants can both offer equally high diversity, in all of the term's accepted meanings, whether number of species, species turnover, or relative abundance of each species.

Theodoropoulos reviews the claims of the invasion biologists: that we are in an invasive-species crisis; that humans are moving species faster and farther than nature ever could; that many species have become extinct solely due to exotics; that invasion corrodes ecosystem processes, lowers diversity, and is destroying our wildlands. Admirably, he goes to the original sources cited by the doomsayers, and shows that the data do not support a single one of these claims. Purple loosestrife, the poster child of invasion biologists, harbors slightly more native insects and birds than nearby native plants. It also is an excellent nutrient accumulator, thriving primarily in—and cleaning up polluted waters (which hints at the real reason for its abundance). There is no evidence that tamarisk, scourge of the southwest, has displaced any native species or changes riparian hydrology, and it too supports as many species as natives (including a rare flycatcher), and more species than indigenous cottonwoods. Theodoropoulos hauls out bags of similar evidence on all the big-name invasives and many lesser ones to firmly scotch the prejudice that non-natives alone can harm ecosystems.

Obliterating the claim that humans have sped up dissemination of species, Theodoropoulos cites, among many, Darwin's studies of individual birds and insects carrying dozens of seed species a few to thousands of miles. Multiply that by billions of animal carriers, and it equals or dwarfs human plant exchanges. Fifty years after isolated Krakatau blew up, 1100 species had crossed open ocean to repopulate the island. Other evidence of the astounding rate of natural transport is offered in abundance. He notes also that the mixing of the Red Sea and Mediterranean biotas caused by the Suez Canal, as rapid and large-scale an exchange as we are likely to encounter, seems not to have resulted in any extinctions.

The book also reveals the connection between invasion biology and the pesticide industry. A founding board member of the California Exotic Pest Plant Council is a Monsanto executive who was instrumental in developing Roundup. The industry generously funds these councils and similar organizations.

Invasion biology also suffers from number bloat. An oft-cited paper by noted biologist David Pimentel states that exotics cause $137 billion in damage every year, but examination quickly reveals some wild assumptions and flagrant bias. Loss from cats is pegged at $17 billion (12% of the total!) but the basis is speculation on the number of birds killed and a $30 value for hand-rearing each bird, when little money is actually spent replacing dead birds. And why aren't rats, mice, and crop-eating birds that are killed by cats subtracted from this absurd number? Theodoropoulos rightly suggests that by this logic, we should puff the total cost into the trillions by adding the estimated price of restoring all Midwest farmland to pristine prairie. After all, corn and soybeans may be the continent's most widespread and damaging invasives.

The author barely suppresses laughter as he shows the contradictions of this so-called science. When native species drop mulch, fix nitrogen, attract new pollinators, or create shade, it's called beneficial. When an exotic does exactly the same, it's labeled ecosystem disruption. The bias dies hard: Researchers found that native plants dominate undisturbed prairie (10,700 natives to 2

wild carrots) while exotics require disturbed soil, yet they still opened their paper with "Invasion by exotic plant species is a serious threat to the integrity of natural communities." One proponent of natives recommends we "choose breeding stock carefully to avoid inbreeding and genetic contamination," forgetting that you can't avoid both simultaneously. And on and on.

So what's happening here? If the data do not support it, why the rage and fear toward non-native species? Here Theodoropoulos turns, in the middle third of the book, to the psychology, politics, and pseudoscience driving the hate campaign against non-natives.

Humans have an innate and sometimes-justified fear of change in our environment. Change may introduce a potential danger, hence one reaction to change is fear unless we examine the fear or make its cause conscious. Also related is xenophobia, fear of the other. For animals at the mercy of their environment, these can be useful defense mechanisms. But for animals who have evolved into technological humans, they are destructive atavisms that isolate us from nature.

As one illustration, the author describes the native-plant campaigns of Hitler's followers, though he is very careful not to call exotics-haters Nazis. He believes invasion biology is rooted in the same fears and prejudices that power Nazism and other racist, genocidal ideologies. A desire for genetic purity and preservation of the homeland, dissatisfaction with current status, an easily identified enemy, and a simplistic answer—extermination—are elements that these ideologies share. And he does call invasion biology an ideology, demonstrating that it cannot justifiably be called a science. In no scientific discipline can data be suppressed or used selectively to support a preconception as is done in invasion biology. Pseudoscience is known for refusing to acknowledge conflicting data, not testing assumptions, exaggeration of limited truths, and circular arguments. ("If it's not native it's bad, and the reason it's bad is because it's non-native.") Invasion biology fits this pattern.

We greatly prefer to find simple, physical causes for problems and then eradicate them. We're very good at spotting and killing enemies, and we feel virtuous while we do it. We're far less successful and confident when causes are multiple, the solution requires changes in our thinking, and the "enemy" is our own behavior.

Most harm resulting from introduction of non-native species should be blamed not on the species themselves, but on human destruction of habitat and on practices that change landscapes so they no longer support their native vegetation. Non-native species are almost never capable of competing successfully with species in an intact native ecosystem. (The author points out one oft-heard contradiction here: that exotics often drive out the better-adapted natives. Say, what?) Clearing, soil disturbance, creation of sunlit edges, harvesting, and the other collateral damage of development all degrade native habitat to render non-natives more suited to the new conditions. Thus yanking the exotics will do no good—they'll come back faster than the now-handicapped natives under the changed conditions.

Another harmful manifestation of exotic-species hatred is our hubris: the conviction that we know better than nature which organisms should be living somewhere. Eradication of non-natives has often had a Vietnam-village effect of destroying what we are trying to save, and can in fact damage ecosystem function more than the exotics. Evidence is mounting that the

vigorously growing blends of native and non-native plants that "invade" damaged land are yet another example of nature's wisdom and resourcefulness. Nature creatively mingles both native and exotic without prejudice, using all resources available to throw a green Band-Aid over ravaged landscapes. We demean her intelligence and set back the healing process when we hack away these recombinant communities. The book's final section uses this view as the basis for a new relationship with human-dispersed species.

Theodoropoulos seems to have modeled his book on *The Origin of Species*, wherein Darwin assembled an overwhelming number of examples to support his view and in effect crushed his enemies by sheer weight. *Invasion Biology* is similarly exhaustive, which at times makes for repetition, although I think the author was right to show that he was not just selecting a few isolated favorable examples. His ranging into aspects of psychology and politics carries him into fields where he is not well-versed, but these are territories that are clearly relevant and needed inclusion. He has opened the door for specialists to follow and deepen his opening arguments that link the hate-speech of invasion biology to its cultural roots.

The book is self-published (and cheaply bound—my copy's binding is failing) and deserves a much wider readership than its limited distribution is getting. If you find yourself incensed at what you've read here, or are asking, "But what about…" you should read this book, as this review can only hint at the wealth of evidence and arguments. And it's just the thing for permaculturists confronted by natives-only partisans. It is available from the author (David Theodoropoulos, Star Route 2, Box 337, La Honda, CA 94020 USA, www.dtheo.com/BookOrder.htm) and some major booksellers. Or ask your local bookseller to order it, and get it on the shelves for others to see.