



## CITIZENS COMMITTEE TO COMPLETE THE REFUGE

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*Comments sent via email, no hard copy to follow*

Erika Castillo  
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Re: Draft Programmatic Environmental Impact Report (DPEIR) for the Alameda County Mosquito Abatement District's (ACMAD's) Integrated Mosquito Management Program SCG # 2012052037

Dear Ms. Castillo,

Thank you for the opportunity to provide comments and for the time extension. The Citizens Committee to Complete the Refuge has reviewed the DPEIR for ACMAD's Integrated Mosquito Management Program. This is an extremely large document with many attachments, our comments below are only based on a brief review, but based upon that review we have the following substantive comments.

### Summary:

- The DPEIR refers to "Proposed Program Alternatives" but it is not clear what the preferred alternative is, or how it differs substantively from other alternatives considered. We are assuming, the preferred alternative would necessarily incorporate elements of surveillance, physical control, vegetation management, biological control and chemical control, as these elements are all currently employed by ACMAD. So we question why the DPEIR presents these elements as separate "alternatives" (Chapter 2)? It would have been much more useful for the public, had the DPEIR presented a preferred alternative that included the methodologies within each of these elements that the ACMAD felt would provide the greatest economically and logistically feasible mosquito control with the least environmental harm, rather than posing these each of these elements themselves as alternatives that might be used in isolation of the other techniques of mosquito control. As an example, there is probably no scenario under which ACMAD could effectively utilize "surveillance" as its sole means of dealing with mosquito control.

What is sorely missing from the Summary Comparison of Impacts of Alternatives, is the analysis of the cumulative impacts on the biotic environment of the combined use of an alternative that utilizes physical control, vegetation management, biological control, and chemical control, or how changes in the magnitude of any of those elements might reduce significant adverse impacts to the biotic environment.

- Based upon the growing body of knowledge regarding the impacts of insecticides and herbicides on water quality and the biological environment, we find it difficult to comprehend how the only significant impact identified is that of "objectionable odors." One needs to look no further than the Best Management Practices (BMPs), and the fact that there are no BMPs for listed sensitive amphibian species other than the California tiger

salamander (CTS). And although BMPs exist for CTS, the only habitat identified as sensitive are vernal pools, despite the fact that stockponds are known to provide important breeding habitat.

The larvicide methoprene is reported to be toxic to amphibians<sup>1</sup> and it has been reported that s-methoprene (Altosid) and its degradation products may be responsible for frog deformities.<sup>2</sup> While BMPs for CTS have been proposed, the BMPs only restrict the use of methoprene in vernal pools, and not for stockponds or any of the other habitats in which CTS are known to occur. Thus use of methoprene in stockponds could have significant adverse impacts for breeding CTS and for other listed and special status amphibians.

## Chapter 2:

- Does ACMAD provide resource and regulatory agencies an advanced listing and maps of work that is anticipated to be performed during the year? Does ACMAD provide resource and regulatory agencies a yearly list of activities that have been performed along with maps depicting where the work occurred?

## Surveillance Methodologies:

- Use of New Jersey Light Traps - A recent study<sup>3</sup> of 5 traps, including the New Jersey light trap, found the standard CMC and the new black light trap were more successful at trapping mosquitoes, while capturing the fewest non-target species.
- Maintenance of paths and clearings - "...periodic vegetation management may be necessary to maintain accessibility to water bodies." In tidal marsh habitats, critical habitat areas (e.g. that of California red-legged frog), or vernal pool complexes consultation with resource agencies is necessary before any such actions occur.

## Physical Control Alternative:

- 2.3.2.1 - This section focuses on the need to improve circulation within marsh areas, and "connection of backwaters or isolated pools on floodplains to the main channels.." Pans are naturally occurring habitats within the upper edges of the tidal marsh. These areas may provide important habitat for special status plant and animal species and artificial drainage of such areas may significantly reduce their habitat values. Drainage of naturally occurring pans should not be undertaken, and should not occur without consultation of the appropriate regulatory and resource agencies.
- We concur that any physical control activities require consultation with appropriate resource and regulatory agencies prior to implementation.
- 2.3.2.1.1 - The description of "artificially ponded" areas requires elaboration. The section refers to "artificial ponds for holding drinking water for livestock, and retention ponds created for holding of rainwater." The passage also references "filling or draining artificially ponded areas" as "cost-effective and environmentally acceptable" and does mention that this may not be appropriate in "natural areas." This section should also clarify that such ponded areas may provide vitally important foraging or breeding habitat for listed and special status species such as the California tiger salamander (CTS), California red-legged frog (CRLF), foothill yellow-legged frog (FYLG), western spadefoot toad (WTS), western pond turtle (WPT), etc. In addition, such areas may provide habitat for the Tri-Colored Blackbird. In areas where listed or special status species, or aquatic

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<sup>1</sup> Extension Toxicology Network (EXTOXNET), <http://pmep.cce.cornell.edu/profiles/extoxnet/haloxfop-methylparathion/methoprene-ext.html>, publication date: 9/95

<sup>2</sup> Henrick, Clive A, Jinren Ko, Jack Nguyen, Jim Bursleson, George Lindahl, Douglas Van Gundy, and Julie M. Edge. "Investigation of the relationship between s-methoprene and deformities in anurans." 2002. *Journal of the American Mosquito Control Association*, 18(3):214-221

<sup>3</sup> Chun-Xiao Li, Michael L. Smith, Ali Fulcher, Phillip E. Kaufman, Tong-Yan Zhao and Rui-De Xue. 2015. "Field Evaluation of Three New Mosquito Light Traps Against Two Standard Light Traps to Collect Mosquitoes (Diptera: Culicidae) and Non-Target Insects in Northeast Florida." *Florida Entomological Society*, 98(1):114-117

dependent amphibians, etc. are present, drainage and filling must be discouraged, as should the use of mosquito fish. We concur such areas are likely to fall under the purview of the U.S. Army Corps of Engineers, but also the Regional Water Quality Control Board. Thus not only is the Clean Water Act pertinent, but also state regulations regarding impacts to waters of the State.

- 2.3.2.1.2 - We strongly discourage the use of physical control methods in seasonal wetlands and vernal pools, especially drainage and fill activities.
- 2.3.2.1.3 - We reiterate our concerns regarding impacts to listed or special status species habitats.
- 2.3.2.1.4 - We reiterate our concerns regarding impacts to listed or special status species and their habitats that might result from drainage or fill activities.
- 2.3.2.1.5 - As discussed earlier, listed and special status species do not necessarily distinguish between naturally occurring ponds and "artificial" ponds. Care also needs to be taken when describing "ponding" in agricultural fields, which may in fact be naturally occurring ponded habitat or areas of saturated soils within agricultural fields.
- 2.3.2.1.6 - Upon what scientific data is ACMAD basing the comment, "Minor physical activities with *insignificant environmental impacts* can be accomplished using hand tools to connect small ponded areas to the channel along the edge of streams with highly variable flows"? Please provide documentation to back up this assertion.
- 2.3.2.1.7 - "educating the public about filling the holes with sand or other inert materials"? What about the impacts to nesting bird species or existing nests??! How can this impact be less than significant?

#### Vegetation Management Alternative:

- The value of the CNDDDB is limited to areas where surveys have been conducted in the past and data has been submitted and the same is true for other online sources, therefore, surveys should be conducted prior to vegetation removal. Heavy equipment should not be utilized for vegetation removal in areas of sensitive species, and care must be taken to restore original topography.
- To avoid adverse impacts to special status plants and animals, ACMAD should provide maps of proposed vegetative removal to resource agencies prior to implementation, for their review and comment.
- Table 2-1 - We have concerns regarding the use of glyphosphates near wetlands and aquatic areas. As an example, the safety sheet for Alligare Glyphosphate 4 ([http://www.alligarellc.com/assets/pdf/Glyphosate\\_4%20Plus\\_SDS\\_\(v2.0\).pdf](http://www.alligarellc.com/assets/pdf/Glyphosate_4%20Plus_SDS_(v2.0).pdf)), is toxic to aquatic life. A review conducted by the North Carolina Partners in Amphibian and Reptile Conservation urges caution when utilizing glyphosphates in areas supporting amphibians (<http://www.ncparc.org/pubs/Herbicide%20Choices%20&%20Amphibian%20Conservation.pdf>). One example provided is that of "surfactant-loaded formulations" such as Roundup. The report states recent studies suggest herbicides such as Roundup can have negative effects on tadpoles. In addition, herbicides such as R-11 Spreader Activator should not be utilized due to its estrogenic effects in wildlife, and for its reported toxicity for tadpoles.

#### Biological Control Alternative:

- We support the District policy to limit the use of mosquito fish to ornamental fish ponds, water troughs (as long as there is no possibility of escape into natural water bodies), water gardens, fountains and unmaintained swimming pools, so long as those artificially constructed waters are not utilized by special status amphibians.

#### Chemical Control Alternative:

- We do not support the use of spinosid or any adulticides due to their potential adverse impacts to non-target organisms.

Chapter 4:

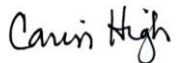
- 4.1.3.2.8 - "Stipulation Injunction and Order, Protection of California Red-Legged Frog from Pesticides"  
This section discusses the imposition of no-use buffer zones of 60 feet for ground applications and 200 feet for aerial applications away from the edges of CRLF habitat, but then states mosquito control programs are exempt. This section says the injunction permits the use of methoprene, permethrin, and naled for mosquito control. The passage also states :  
You do not apply the *pesticide* within 15 feet of aquatic breeding critical habitat or non-breeding aquatic critical habitat within critical habitat areas, or within 15 feet of aquatic features within non-critical habitat sections subject to the injunction. [emphasis added]  
The BMPs for CTS are silent with respect to restricting the use of naled. We do not support the use of naled not only because of the toxicity of naled to non-target organisms, but also because of the threat posed by one of naled's breakdown products, dichlorvos.
- 4.2.1.1 The environmental review document should reiterate that state and federal permits will be required for "Direct impacts [that] would include habitat modifications, such as draining or changing the hydrology..."
- Table 4-3 - Needs to be improved.
  - Livermore tarplant is a state candidate species
- Table 4-4 - There are a number of omissions or inaccuracies.
  - CTS are listed as needing vernal pools or seasonal water sources for breeding. Stock ponds are important habitats for CTS and need to be included.
  - Longfin smelt should be added to the list as a federal candidate.
  - Snowy Plover utilize seasonal wetlands, managed ponds, and saltpond levees.
  - Townsend's big-eared bat is a state candidate species .
  - Swainson's Hawk is State threatened.
  - The American Peregrine Falcon is fully protected.
  - Some species are incorrectly identified as both State listed and SSC, and some species should be identified as State listed and fully protected, but are not.
- Table 4-5 - The Eastern Alameda County Conservation Strategy should be included.
- Table 4-6 BMPs -
  - General BPMs - driving off road vehicles could crush or injure special status plants. If off road vehicles must be used, surveys should be conducted by qualified biologists at the appropriate time of year to avoid impacts to listed plants. An incidental take permit may be required in areas where there is a chance of take of a listed plant.
  - Avoidance measures for nesting birds includes conducting surveys prior to implementation of mosquito abatement measures.
  - The DPEIR suggests BMPs for CTS, but not for any of the other listed or special status amphibian or aquatic dependent species that occur within Alameda County. (e.g. California red-legged frog, foothill yellow-legged frog, western spadefoot toad, western pond turtle) BMPs should be developed for these species as well, and stockponds should be included in the description of aquatic habitat these species inhabit. As with CTS, methoprene, monomolecular films, and adulticides should not be used in vernal pools, stockponds, and seasonal wetlands utilized by these species.

- The BMP for CTS states adulticides won't be used in vernal pools and seasonal wetlands utilized by CTS, but what about the surrounding uplands? The Xerces Society published a report on ecologically sound management of mosquitoes within wetlands<sup>4</sup> that cited a study in Florida. This study reported naled residues "downwind at up to 750m in no-spray zones on wildlife refuges six hours after routine adulticiding (Hennessey et al. 1992). "These no-spray zones were established because they harbored threatened or endangered species, including several butterflies, including several butterflies and other pollinators, whose survival could be further threatened by unintentional drift." Buffers need to be established that will be large enough to account for unintentional drift.
- A BMP should be developed for Tri-Colored Blackbird and in particular, the use of monomolecular films and oils should be prohibited in areas of Tri-Colored Blackbird nesting.

Chapter 5 - our concerns are similar to those listed above.

Time permitting, we would have liked to provide additional comments regarding the various herbicides, larvicides and adulticides listed. However, there are substantive concerns that the cumulative effects of the components of the integrated pest management program have not adequately been described or mitigated. In addition, the species accounts need to be corrected and updated, BMPs need to be provided for additional listed and special status species, and significant and substantive concerns exist regarding some of the proposed herbicides, larvicides and adulticides. We hope the proposed Integrated Mosquito Management Program will be revised to address these concerns.

Respectfully submitted,



Carin High  
Citizens Committee to Complete the Refuge

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<sup>4</sup> Mazzacano, Celeste and Scott Hoffman Black. 2013. "Ecologically Sound Mosquito Management in Wetlands". The Xerces Society for Invertebrate Conservation. [www.xerces.org](http://www.xerces.org)