**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**WASHINGTON, D.C. 20460**

**OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES**

October 20, 2008

MEMORANDUM

SUBJECT: Effects Determinations for Permethrin Relative to the California Red-legged Frog (CRLF), Bay Checkerspot Butterfly (BCB), California Clapper Rail (CCR), Salt Marsh Harvest Mouse (SMHM), and San Francisco Garter Snake (SFGS), and Designated Critical Habitat of the California Red-legged Frog (CRLF) and Bay Checkerspot Butterfly (BCB)

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MTShamim 10/20/08

TO: Arthur-Jean B. Williams, Associate Director
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Attached is an assessment to evaluate potential direct and indirect effects on individuals of the federally threatened or endangered California Red-legged Frog (*Rana aurora draytonii*), Bay Checkerspot Butterfly (*Euphydryas editha bayensis*), California Clapper Rail (*Rallus longirostris obsoletus*), Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*), and San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*), arising from FIFRA regulatory actions regarding all registered uses of permethrin in California. In addition, this assessment evaluates whether the action is expected to result in modification of designated critical habitat for the California Red-legged Frog (CRLF) and Bay Checkerspot Butterfly (BCB). This ecological risk assessment has been prepared consistent with the settlement agreement entered into by the federal government to resolve claims made by plaintiffs against EPA in a court case (CBD v. EPA[1]) and entered in Federal District Court for the Northern District of California on October 20, 2006. This assessment also addresses four species for which permethrin was alleged to be of concern in a separate suit, *Center for Biological Diversity (CBD) vs. EPA et al.* (Case No. 07-2794-JCS).

The attached assessment was conducted consistent with the Agency's Overview Document[2]. Effects determinations for this assessment are summarized below. Details of the effects determinations can be found in **Tables 1.1** and **1.2** of the "Executive Summary" section of the assessment.

- **Based on the best available information, the Agency makes a May Affect and Likely to Adversely Affect (LAA) determination for the CRLF, CCR, SFGS, SMHM, and BCB from the use of permethrin.** This is based on the potential for direct effects and indirect effects due to

[1] Settlement agreement of October 20, 2006: Center for Biological Diversity v. United States Environmental Protection Agency. Civ. No: 02-1580-JSW(JL)).

[2] Overview of the Ecological Risk Assessment: Process in the Office of Pesticide Programs, U.S. Environmental Protection Agency: Endangered and Threatened Species Effects Determinations: January 23, 2004.

potential decreases in aquatic and terrestrial prey items.

- **The Agency has determined that there is the potential for modification of CRLF designated critical habitat from the use of the chemical.** This is based on the potential for direct effects (to both aquatic and terrestrial-phase CRLF), indirect effects due to potential decreases in aquatic and terrestrial prey items, and the potential for modification of designated critical habitat due to the potential loss of aquatic and terrestrial prey items.
- **The Agency has determined that there is not the potential for modification of BCB designated critical habitat from the use of the chemical.** Although there were no data to reliably quantitatively evaluate the effects and the potential risks of permethrin to terrestrial plants, aquatic non-vascular plants are not particularly sensitive to permethrin, permethrin has a neural toxic mode of action, and no studies demonstrating significant adverse effects of permethrin to any vascular aquatic or terrestrial plant have been identified in the open literature. In addition, since permethrin was registered for use in the U.S. in 1979, only seven ecological incidents have been reported to the Agency that involve any plants, and none have reliably linked permethrin to the observed effects with a certainty index of "probable" or higher, despite that it is regularly directly applied on or near a very wide variety of agricultural and home garden plants.

As required by the Alternative Consultation Agreement EPA entered into with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (Services), I have been trained by the Services to make such determinations. Additionally, this assessment was subjected to internal Agency peer review throughout its development. The review panel included seven scientists, two of whom have been trained by the Services to make such determinations: Edward Odenkirchen and Melissa Panger.

Please let me know if you have any questions regarding this assessment and the effects determination for permethrin relative to the CRLF, BCB, CCR, SFGS, and SMHM, including designated critical habitat for the CRLF and BCB.

cc: Steven Bradbury
Debbie Edwards

Attachments