



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

OFFICE OF PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

October 17, 2008

MEMORANDUM

SUBJECT: Effects Determinations for Glyphosate Relative to the California Red-Legged Frog and Designated Critical Habitat

FROM: Donna Randall, Senior Biologist  
ERB 2  
Environmental Fate and Effects Division

*Donna Randall*  
*10/17/08*

TO: Arthur-Jean B. Williams, Associate Director  
Environmental Fate and Effects Division

Attached is the assessment of potential direct and indirect effects to the California red-legged frog (CRLF) and potential modification to designated critical habitat from uses of the herbicide, glyphosate. While the Endangered Species Act requires we assess uses of pesticides relative to any potentially affected listed species, this assessment focuses only on the CRLF, including designated critical habitat, addressing provisions of a settlement agreement entered into by the federal government to resolve claims made by plaintiffs against EPA in a court case (CBD v. EPA<sup>1</sup>).

The attached assessment was conducted consistent with the Agency's Overview Document<sup>2</sup>. Effects determinations for this assessment are summarized below:

- Based on the best available information, the Agency makes a Likely to Adversely Affect determination for the CRLF from the use of the herbicide, glyphosate. Additionally, the Agency has determined that there is the potential for modification of CRLF designated critical habitat from the use of the chemical. Based on the predicted environmental exposures and the available toxicity information, glyphosate is likely to adversely affect the aquatic-phase CRLF via indirect effects through reduction in prey (non-vascular plants) and habitat (aquatic and terrestrial plants). There are no direct effects on the aquatic-phase CRLF for any of the terrestrial or aquatic uses. Glyphosate is also likely to adversely affect the terrestrial-phase CRLF via both direct effects and indirect effects following reduction in prey (terrestrial invertebrates, terrestrial-phase amphibians and mammals) and habitat (terrestrial plants). Glyphosate is predicted to result in modification to one or more CRLF critical habitat Primary

---

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

<sup>2</sup> 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.

Constituent Elements. For a summary of effects determinations, please see Tables 1.1 and 1.2 in the executive summary.

I have reviewed this risk assessment and effects determination to ensure its consistency with the Agency's Overview Document. As agreed to in the Alternative Consultation Agreement EPA entered into with the US Fish and Wildlife Service and National Marine Fisheries Service (Services), I have been trained by the Services to make pesticide effects determinations. This assessment also was subjected to internal Agency peer review throughout its development. The review panel included one other scientist who has been trained by the Services to make such determinations (Edward Odenkirchen).

Please let me know if you have any questions regarding this assessment and effects determination for glyphosate relative to the CRLF and its designated critical habitat.

cc: Steven Bradbury  
Debbie Edwards  
Stephen Carey  
Tanja Crk  
Colleen Flaherty  
Pamela Hurley  
James Hetrick  
Keara Moore  
Silvia C. Termes

Attachments