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

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

August 29, 2007

MEMORANDUM

SUBJECT: Effects Determinations for Atrazine Relative to Three Listed Freshwater Mussels

FROM: Anita Pease, Senior Biologist */original signed 8/29/07/*
ERB IV
Environmental Fate and Effects Division

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

Attached is the assessment of potential direct and indirect effects to three listed freshwater mussels, including the fat pocketbook pearly mussel, purple cat's paw pearlymussel (PCPP mussel), and the northern riffleshell, from uses of the herbicide atrazine. While the Endangered Species Act requires we assess uses of pesticides relative to any potentially affected listed species, this assessment focuses only on the three identified species, addressing provisions of a settlement agreement entered into by the federal government to resolve claims made by plaintiffs against EPA in a court case (NRDC v. EPA[1]).

The attached assessment was conducted consistent with the Agency's Overview Document[2]. Effects determinations for this assessment are summarized below:

- Atrazine is not likely to adversely affect the three listed mussels by direct toxic effects or by indirect effects resulting from effects to freshwater invertebrates and freshwater fish hosts.

- Atrazine is not likely to adversely affect the PCPP mussel and northern riffleshell, via impacts to riparian vegetation, based on a spatial analysis of land cover and county-level use data, and aerial satellite photography. In addition, the PCPP mussel is not likely to be adversely affected based on potential direct aquatic plant community-level effects.

- A likely to adversely affect ("LAA") determination was concluded for the fat pocketbook mussel based on indirect effects to habitat and water quality via direct effects to herbaceous/grassy riparian vegetation. However, atrazine is not likely to adversely affect the fat pocketbook in watersheds with predominantly forested riparian areas because woody shrubs and trees are

[1] Settlement agreement of March 28, 2006: Natural Resources Defense Council v. United States Environmental Protection Agency. Civ. No: 03-CV-02444 RDB.
[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.

generally not sensitive to environmentally-relevant concentrations of atrazine. In addition, atrazine-related impacts to riparian areas adjacent to large rivers occupied by the fat pocketbook mussel are expected to be insignificant, based on a spatial analysis of land cover data adjacent to the occupied rivers.

- An "LAA" determination was concluded for indirect prey and habitat effects to the fat pocketbook and northern riffleshell mussels that occur in streams within the boundary of vulnerable watersheds that have flow rates <200 ft^3/sec or for which no flow rate information is available, based on potential direct aquatic plant community-level effects. This determination was based on the results of recently submitted atrazine ecological monitoring program (AEMP) data from vulnerable watersheds; however, the degree to which the targeted monitoring data represents exposure in occupied streams that co-occur with lower flowing vulnerable watersheds is not available. For the purposes of this assessment, it is conservatively assumed that detected concentrations of atrazine from the AEMP monitoring data may be representative of exposures in lower flow (i.e., <200 ft^3/sec) vulnerable watersheds of the action area. If further analysis reveals that the monitoring data are not representative of atrazine concentrations in vulnerable watersheds where these listed mussels occur, the "LAA" effects determination will be revisited and could be changed to "NLAA" for these species.

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 two other scientists who have been trained by the Services to make such determinations (Dr. Melissa Panger and Dr. William Eckel).

Please let me know if you have any questions regarding this assessment and effects determination for atrazine relative to these three listed freshwater mussels.

cc: Steven Bradbury
Debbie Edwards

Attachments