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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

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Memorandum

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Subject: Effects Determination for Malathion for Pacific Anadromous Salmonids

We reviewed data and other information for malathion, an organophosphorous insecticide named by the Washington Toxics Coalition (WTC) and included in the court order for 'effects determinations' and potential consultation with the National Marine Fisheries Service. Malathion is registered nationally for use on a wide variety of crop sites and on various non-crop sites, including greenhouses, nurseries, home and garden, and public health. It is very highly toxic to fish and aquatic invertebrates but does not appear to be toxic to plants. Some homeowner and agricultural uses can have rather high application rates and resulting exposure. The Environmental Fate and Effects Division (EFED) completed a science chapter in November 2000. The assessment concludes that levels of concern are exceeded for endangered freshwater fish and populations of aquatic invertebrates exposed to runoff and drift from agricultural and urban treatment sites. We have adapted the more general findings of the EFED assessment to develop an analysis of the potential for effects on endangered and threatened Pacific salmon and steelhead Evolutionary Significant Units (ESUs) from current uses in California and the Pacific Northwest.

Based on the environmental risk assessment and additional considerations indicated in our analysis and other attached or referenced materials, we conclude that the agricultural use of malathion may affect eighteen salmon and steelhead ESUs, may affect but is not likely to adversely affect six ESUs, and will have no effect on two ESUs. Residential uses of malathion may affect twenty-four ESUs and will have no effect on two ESUs. Our determinations are based on the known or potential use of malathon on crops within habitats and migration corridors of each ESU, the acute risk of malathion to endangered fish, and the potential for indirect effects due to acute and chronic risks to their aquatic-invertebrate food supply. We do not have county-level usage data for homeowner and most noncrop uses, but we presume that they may contribute to the exposure and risks of these ESUs.

attachments