

Mr. Anthony Britten  
Chemical Review Manager  
Special Review and Reregistration Division (7508C)  
Office of Pesticide Programs  
Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20460-001

Dear Mr. Britten:

The U.S. Fish and Wildlife Service appreciates the opportunity to submit comments to the U.S. Environmental Protection Agency (EPA) regarding the Interim Reregistration Eligibility Decision (IREED) for carbaryl (EPA DOCKET CONTROL NUMBER OPP-2003-0376). We realize that the subject Risk Assessment was completed before the Overview Document that was negotiated between Service, National Marine Fisheries Service, and USEPA had been finalized. However, we continue to have concerns regarding potential ecological effects resulting from carbaryl use.

In 2002, the Service's Western Washington Office submitted detailed comments (enclosed) to EPA's public docket (#OPP-2002-0138) regarding the ecological risk assessment for carbaryl. This letter outlined our concerns regarding both the high number of use scenarios in which levels of concern were exceeded for nontarget organisms and the Special Local Needs (24c) use of carbaryl on oyster beds in Washington State. Despite the risk to nontarget organisms described both in this letter and EPA's risk assessment, the IRED proposes only the slightest measures to alleviate potential ecological impacts, and only in the form of incidental relief derived from residential and occupational mitigation actions. We offer the following comments and recommendations to assist the EPA in avoiding and minimizing impacts to sensitive biological resources and habitats.

## **COMMENTS**

The Executive Summary of the IRED (p. viii) states that mitigation measures will address ecological risk concerns, and specifically states that risks to birds and mammals will be mitigated by the reduction of application rates. However, aside from language added to labels concerning honey bees, the IRED proposes no measures specifically designed to reduce ecological risk. The IRED identifies acute and chronic risk to nontarget organisms for nearly all of carbaryl's 74 uses. Mitigation measures that were designed to address occupational and residential risk (cancellation or reduction of application rates for 16% of the uses) reduce ecological risk to some degree, but account for less than 25% of the actual pesticide volume applied annually (based on pounds of active ingredient

used, IRED pages 8-11). Furthermore, for the ten crops where maximum application rates were reduced, risk quotients calculated for average application rates indicate that levels of concern are still likely to be exceeded.

**Effects to aquatic organisms.** There is a growing body of literature describing sublethal and chronic effects of carbaryl to aquatic organisms exposed under conditions that mimic natural stressors. Several of these studies were described in the revised risk assessment, though little attempt was made in the IRED to synthesize this research in such a way as to draw meaningful conclusions about the risk to amphibians and other aquatic or aquatic dependent species. While uncertainty is often inherent when extrapolating from controlled studies to field situations, (Revised Risk Assessment, Appendix D3, pages 122-125), the weight of evidence derived from this body of research clearly suggests that carbaryl toxicity is increased by stressors that are found under natural conditions but not in standard toxicity testing. Studies published after the literature reviews provided in the Service's 2002 comment letter and the EPA's revised risk assessment continue to demonstrate significant interactions between carbaryl toxicity and larval density (Boone et al., 2001; Rohr et al., 2003), timing and duration of pesticide exposure (Boone and Bridges 2003), hydroperiod (Boone and James 2003), and predation (Reylea 2003). Research also continues to describe carbaryl effects to biochemical parameters (Tripathi and Sungh, 2003; Singh et al., 2004), growth (Reylea 2004), swimming behavior (Davis et al., 2004; Hopkins et al., 2005) and predator avoidance (Davis et al., 2004) that have the potential to adversely affect individual, population, and community parameters. Adverse effects to survival and behavior were found at environmentally relevant concentrations, as low as 0.3 mg/L. It is the contention of the Service that these studies and those previously described, as a whole and perhaps individually, are a more realistic representation of nature than standard toxicity studies on laboratory test species and raise serious concerns regarding adverse effects of carbaryl use to nontarget aquatic organisms that were not adequately addressed in the IRED.

**Effects to terrestrial organisms.** We are also concerned about potential impacts to terrestrial organisms, including reptiles, birds, and mammals, which were identified in the revised risk assessment for most use scenarios. The comments provided by the Service in 2002 specifically express concern for birds and provide a literature review of carbaryl effects on birds. EPA's risk assessment also identified studies indicating that passerine species may be more than 10 times more sensitive to the effects of carbaryl than the mallard duck. However, the only response to these concerns by EPA was to "strongly encourage" the registrant to submit acute oral toxicity tests with passerine species. Given that EPA will continue to perform risk assessment on values derived from the highly tolerant mallard duck, it seems unlikely that the registrant will risk further restrictions on its product by voluntarily performing tests based on upon a suggestion and not a requirement from EPA.

**Carbaryl use on oyster beds.** Regarding the use of carbaryl on oyster beds in Willapa Bay and Grays Harbor, while the Service supports the phase-out of this practice negotiated by the Washington Toxics Coalition, we reiterate our concern for adverse effects to nontarget organisms over the lengthy 12-year time period allotted for the phase-out to occur. We are particularly concerned about potential direct and indirect effects to threatened and endangered species during this continued use. Willapa Bay and Grays Harbor are used by several federally listed species, including the marbled murrelet (*Brachyramphus marmoratus*), western snowy plover (*Charadrius Alexandrians= novices*), brown pelican (*Pelecanus occidentalis*), and bull trout (*Salvelinus confluentus*), the listing of which occurred after the EPA's 1989 consultation on selected carbaryl uses, as well as coastal cutthroat trout (*Onchorychus clarki clarki*), a species of concern. Studies currently in progress to help assess effects to nontarget species from carbaryl use on oyster beds have found adverse behavioral effects to cutthroat trout exposed to concentrations of carbaryl below levels that have been measured in the estuarine water column following an application (Davis et al., 2004).

## RECOMMENDATIONS

Carbaryl use, under conditions proposed in the IRED, is not protective of wildlife, and potentially poses risks to threatened and endangered species. This fact is not disputed in the IRED ("Although risks are expected to exist for birds, mammals, aquatic fish and invertebrates, and nontarget insects, no additional mitigation measures are recommended at this time." IRED, pg. 135). The "Benefits and Alternatives" analysis provided in the IRED gives no indication that ecological mitigation was even explored. As mandated by the Federal Insecticide, Fungicide and Rodenticide Act, the EPA is required to ensure that the reregistration of carbaryl will entail no unreasonable adverse effects to the environment. Both the Service and EPA's own risk assessment concur that carbaryl use poses risk to the environment, yet EPA has chosen to allow that risk to persist without a transparent explanation of its decision-making process.

Due to the undisputed risk to nontarget organisms, the Service asks that EPA prioritize the completion of endangered species effects analyses for carbaryl use under conditions outlined in the RED. The Service strongly recommends that this analysis should not wait until carbaryl's next scheduled appearance in the chemical review process (which can be up to 15 years from the release of the current RED) and that a thorough incorporation of recent published literature on sublethal and chronic effects to nontarget organisms be included. We also repeat our recommendation from our 2002 letter that the EPA reinstate consultation on the effects of the uses of carbaryl on all newly listed species since 1989, pursuant to the federal Endangered Species Act of 1973, as amended.

Mr. Anthony Britten

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Thank you for the opportunity to comment on the reregistration of carbaryl. If you have any questions or require additional information, please contact Nancy Golden, Division of Environmental Quality, at (703) 358-2148.

Sincerely,

Everett Wilson, Chief  
Division of Environmental Quality

Enclosure

Copy to: Dr. Debra Edwards  
PIRB

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