



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910

THE DIRECTOR

SEP 30 2009

Mr. Keigwin, Jr.
Director, Special Review and Reregistration Division
U.S. Environmental Protection Agency
MC7508P
One Potomac Yard
2777 S. Crystal Drive
Arlington, Virginia 22202

Dear Mr. Keigwin:

Thank you for your September 10, 2009, letter describing how the U.S. Environmental Protection Agency (EPA) intends to implement the six elements of the Reasonable and Prudent Alternative (RPA) in the National Marine Fisheries Service (NMFS) November 18, 2008, Biological Opinion on EPA's Registration of Pesticides Containing Chlorpyrifos, Diazinon, and Malathion. NMFS takes no position on the adequacy of EPA's implementation of any of the elements of the RPA. However, in response to your letter, NMFS wishes to clarify its basis for, and the intent of, Elements 1 and 6 of the RPA.

Element 1

In its September 2009 letter, EPA interpreted the concentration of pesticide estimated to occur in the water body at a distance 500 ft from a 1 lb ai/A application to be a safe threshold for a single active ingredient:

"EPA interprets the RPA to be based on these target concentrations and an assumed water body size of 10 meters wide and 0.1 meters deep representing a most vulnerable off-channel habitat and default AgDrift settings (low boom, 50th%, and very fine to fine droplet spectra for ground applications and fine to medium droplet spectra for aerial applications). Furthermore, EPA interprets these associated concentrations to be a threshold above which likely jeopardy is expected and below which no jeopardy is expected (EPA response letter, Sept 10, 2009, Technical Appendix, pg 3)."

This interpretation is incorrect. NMFS did not intend the concentration of 1.122 $\mu\text{g}/\text{l}$ to be a threshold value, and the RPA was not intended to achieve any particular target pesticide concentration. Rather, the RPA was developed to provide a mechanism to remove a substantial portion of the risk to salmonids from pesticide drift. As explained more fully below, a 500 ft no-application buffer for ground application of these pesticides was selected because NMFS expected that with this size buffer the concentration noted above would not occur with most applications.



In the November 18, 2008, Biological Opinion, NMFS included as part of the explanation of how no-application buffers were selected a table showing modeled concentrations of chlorpyrifos, diazinon, and malathion that could occur in a vulnerable off-channel water bodies following application of one of these chemicals. NMFS specifically noted in the Biological Opinion:

1) The RPA accounts for the following issues: “(1) the action will result in exposure to other chemical stressors that may increase the risk of the action to listed species including unspecified inert ingredients, adjuvants, and tank mixes; (2) exposure to chemical mixtures containing chlorpyrifos, diazinon, and malathion and other cholinesterase-inhibiting compounds result in additive and synergistic responses; (3) exposure to other chemicals and physical stressors (*e.g.*, temperature) in the baseline habitat will likely intensify response to chlorpyrifos, diazinon, and malathion (NMFS 2008, pg 392).”

2) “With a 500 ft buffer, a ground application of 1 lb ai/acre resulted in a predicted pesticide concentration of approximately 1.12 µg/L in off-channel habitats. Some juvenile salmonids would die from this exposure and other sub-lethal effects would also be expected. Sensitive salmonid prey items would also be adversely affected at 1.12 µg/L (NMFS 2008, pg. 395).”

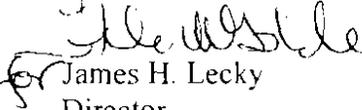
NMFS concluded that this concentration would result in adverse affects to salmonids and their prey. However, NMFS expected most pesticides applications using the 500 ft buffer for ground application would result in lower concentrations. NMFS expected this concentration to occur only when all of the modeled variables were present, (*e.g.*, specific wind speed, wind direction, release height, size of off-channel habitat, droplet size distribution, *etc.*). Because a concentration this high was not expected with most ground pesticide applications outside a 500 ft buffer, NMFS concluded this buffer would remove a substantial portion of risk attributed to pesticide drift (NMFS 2008, pg. 396).

Element 6

The intent of Element 6 of the RPA is to verify that the other elements of the RPA are effectively reducing exposure to listed species and designated critical habitat. The objective is not to determine peak concentrations in off-channel habitats or demonstrate how accurately EPA modeling predicts environmental concentrations in off-channel habitats. While seemingly a subtle difference, this could lead to a sampling design that does not serve the original purpose, which is to evaluate the effectiveness of the RPA. We look forward to working with EPA in developing that monitoring program.

Thank you for the opportunity to clarify Elements 1 and 6 in the RPA of NMFS' Biological Opinion. If you have questions regarding this letter, please contact me or Ms. Angela Somma, Division Chief of our Endangered Species Division at (301) 713-1401.

Sincerely,


James H. Lecky
Director
Office of Protected Resources