



Fact Sheet for Carbaryl, Carbofuran, and Methomyl Biological Opinion

On April 20, 2009, the National Marine Fisheries Service (NMFS) issued a “Biological Opinion” concluding that three dangerous carbamate pesticides commonly used in the Pacific Northwest and California are jeopardizing the survival of numerous species of salmon and steelhead. The decision requires EPA to implement the following measures to protect salmon and steelhead within one year:

- No-application buffer zones (ranging from 200 to 1,000 feet for carbaryl and carbofuran, and 50 to 600 feet for methomyl) from all salmon-bearing waters.
- Prohibition on application of all three pesticides when wind speed exceeds 10 mph, the soil is saturated with water, or a significant rain event is expected within 48 hours of application.

The Biological Opinion can be downloaded at:

<http://www.nmfs.noaa.gov/pr/pdfs/carbamate.pdf>

Technical Background

All three of the pesticides assessed in the Biological Opinion are neurotoxins. Exposure to these poisons either immediately kills salmon or impairs their feeding, predator avoidance, spawning, homing, and migration capabilities. Recent research has found that these pesticides can have “synergistic effects” on salmon, which means that exposure to mixtures of carbamates and other chemicals is even more dangerous than exposure to individual chemicals.

Carbaryl:

- Carbaryl is the second most frequently detected pesticide contaminating surface waters in the United States. EPA has classified carbaryl as moderately toxic to most fish and very highly toxic to aquatic invertebrates that serve as food sources for salmon and steelhead.
- Approximately 1.4 million pounds of carbaryl are used annually in the United States for agriculture. It is used to kill pests on a variety of in the Pacific Northwest and California, including fruit, nut, vegetable, and grain crops. It is also used in non-agricultural contexts such as oyster farming and lawn maintenance.
- Carbaryl is toxic to humans as well as wildlife. EPA has listed carbaryl as a likely carcinogen, and has determined that carbaryl poses significant health risks to farmworkers who prepare and apply in pesticide in the field and who harvest treated crops.

- Bayer CropScience is the primary manufacturer of carbaryl. The most common brand name for pesticides containing carbaryl is Sevin.

Carbofuran:

- Carbofuran is frequently detected in both surface water and ground water in the United States. EPA classifies carbofuran as highly toxic to freshwater fish and highly to very highly toxic to marine fish.
- Approximately 1 million pounds of carbofuran are used annually in the United States, primarily on corn, alfalfa, potatoes, pine seedlings, bananas (in Hawaii only), and spinach grown for seed.
- In January 2008, EPA indicated that it believed that the ecological, occupational, and human dietary risks from carbofuran were so significant that it proposed to prohibit all carbofuran uses. However, EPA has not completed the proposed cancellations and NMFS has determined that carbofuran uses will continue indefinitely.
- The primary manufacturer of carbofuran is FMC Corporation. Carbofuran is sold under various trade names including Furadan.

Methomyl:

- Methomyl is considered to be moderately persistent and highly mobile in the environment. EPA has classified methomyl as moderately to highly toxic to fish, and highly toxic to very highly toxic to freshwater invertebrates that serve as food sources for salmon and steelhead.
- Approximately 2.5 to 3.5 million pounds of methomyl are used annually in the United States on a wide variety of crops including apples, barley, blueberries, corn, grapes, oranges, potatoes, tomatoes, and wheat. It is also used in bait products to control pests in non-agricultural settings such as restaurants and supermarkets.
- Methomyl is primarily manufactured by the DuPont Company. It is sold primarily under the trade name Lannate.

Legal Background

In 2002, the Northwest Coalition for Alternatives to Pesticides, Pacific Coast Federation of Fishermen's Associations, Institute for Fishery Resources, and Washington Toxics Coalition with legal representation from Earthjustice, obtained a federal court order declaring that the U.S. Environmental Protection Agency had violated the Endangered Species Act by failing to consult with NMFS on the impacts that certain pesticides have on west coast salmon and steelhead. *Washington Toxics Coalition v. EPA*, 413 F.3d 1024 (9th Cir. 2005). As a result of that lawsuit, EPA began consultations, but NMFS never issued

biological opinions or identified the measures needed to protect salmon and steelhead from the pesticides. In 2007, some of the same salmon advocates filed a second lawsuit and entered into a settlement agreement with NMFS that establishes a schedule for issuing the required biological opinions. The biological opinion released today is the second of several decisions that will be released over the next three years that will assess a total of 37 pesticides.