Pesticides Threaten Salmon

By Pollyanna Lind

The USGS has found concentrations of pesticides in Pacific rivers and streams at levels associated with negative impacts on fish growth, development, behavior, and reproduction.

Salmon are a cornerstone of the Western United States' cultural and environmental heritage. In order to thrive, salmon need clean water. The use of pesticides by people in both rural and urban areas pollutes our streams and rivers and poses a serious threat to the health of salmon populations and communities.

Designed to kill or damage living things, pesticides are "perhaps the only toxic substances that are purposefully applied to the environment."[1] Pesticides include insecticides, herbicides, fungicides, rodenticides, etc.[2] They are commonly used in schools, parks, homes and gardens, on farms and forests, in lakes and irrigation canals, along roads and railways, and in many other settings. Researchers, looking at where pesticides go in our environment, find that they often end up in our waterways.

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More than ten years ago, the first Pacific salmon species was listed under the *Endangered Species Act*. Twenty-six different salmon species are now listed as threatened or endangered.[6]

Pesticides can and have killed salmon directly. Perhaps more commonly, pesticides cause subtle damages that reduce salmon's chance of survival. Many pesticides cause reproductive harm, reduce survival of young salmon as they transition to seawater, impair migration, or cause behavioral changes that limit survival. Some pesticides also affect salmon indirectly by changing the abundance of food, vegetative cover, or other conditions of the aquatic environment. (For more information on pesticides and salmon see: *Diminishing Returns: Pesticides and Salmon Decline*, available at http://www.pond.net/~fish1ifr/salpest.htm and *Lethal Lawns: Diazinon Use Threatens Salmon Survival*, available at http://www.pesticide.org/diazsalmon.pdf)

The best available data regarding pesticide contamination of water in river basins nationwide come from the U.S. Geological Survey (USGS). Nationally, **more than 95% of river and stream samples contained at least one pesticide**.[3] Over half of the streams sampled contained five or more pesticides.[4] Both urban and agricultural areas have pesticide-contaminated streams and rivers.[3,4]

Five major watersheds of the Western United States studied by the USGS that overlap salmon habitat are the Willamette River Basin in Oregon, Sacramento and San Joaquin-Tulare basins in California, Puget Sound basin in Washington, and the Central Columbia Plateau in Washington and Idaho. The USGS detected 35 or more pesticides in each of these watersheds. Sixteen pesticides in Oregon, Washington, California and Idaho's river basins were found at or above levels set to protect aquatic life.[5] This information exemplifies the very real risk of pesticide contamination levels in salmon habitat.

Obviously, current pesticide regulations are failing to protect the waters that salmon need to survive from harmful contamination levels. Examination of U.S. Environmental Protection Agency (EPA) pesticide registration documents reveal that approved, legal uses of at least 36 pesticides used in this region are expected to have a negative impact on salmon and their habitat. These documents found that legal uses of various pesticides will exceed EPA hazard levels for aquatic organisms yet the EPA has failed to take adequate regulatory steps to mitigate these risks.[9]

Pollyanna Lind is the Clean Water Campaign Coordinator at the Northwest Coalition for Alternatives to Pesticides in Eugene, Oregon.

More than ten years ago, the first Pacific salmon species was listed under the *Endangered Species Act*. Twenty-six different salmon species are now listed as threatened or endangered.[6] Since the first listing, over a decade ago, EPA has violated the *Endangered Species Act* by not consulting with the National Marine Fisheries Service as to whether the registration of pesticides is harmful to salmon. The Northwest Coalition for Alternatives to Pesticides, Washington Toxics Coalition, and Pacific Coast Federation of Fisher-man's Association Inc. filed a lawsuit January 2001 against the EPA to force the agency to take action to protect salmon from pesticides. Settlement negotiations in that suit broke down January 2002, and the parties in the suit, represented by EarthJustice Legal Defense Fund, are moving forward with the lawsuit.

Current practices are creating serious water pollution problems for salmon survival. Regulations are failing to keep pesticides out of surface water, resulting in contamination levels known to be hazardous to aquatic organisms.[9] With listed species of salmon in our waterways, pesticide contamination is no longer acceptable. There is precious little time left to restore the quality of the region's waters for salmon and the ecosystems and communities that depend upon them.

Salmon symbolize many aspects of life that we value: clean water, strength, endurance, beauty, and abundance. Cleaning up our waterways will take a sustained effort by government agencies, farmers, cities and counties, and individuals. For the health of the salmon and our way of life, we must take the following actions:

1. Phase out the use of pesticides that are hazardous to the health of salmon and their habitat.
2. Adopt measures to keep pesticides out of water needed for salmon survival.
3. Establish pesticide use reporting for tracking of pesticide use to aid in salmon recovery.
4. Promote salmon-friendly practices that reduce reliance on pesticides.

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Solutions and recommendations for meeting these challenges can be found in ***Poisoned Waters: Pesticide Contamination of Waters and Solutions to Protect Pacific Salmon*** by Pollyanna Lind. This report also compiles water quality testing results from the USGS and provides a first-time analysis of pesticide registration documents of the U.S. EPA.

For a copy see:http:www.pesticide.orgCleanWater Salmon.html. Or, to order a copy of the report for $8, contact info@pesticide.org or (541) 344-5044.

The *Clean Water for Salmon Campaign* is committed to comprehensively addressing pesticide contamination of surface waters in OR, WA, ID, & CA. A network of over 45 organizations throughout the region is in support of the Campaign's efforts. For information about the *Clean Water for Salmon Network* contact:

Pollyanna Lind
Clean Water Campaign Coordinator
Northwest Coalition for Alternatives
to Pesticides (NCAP)
PO Box 1393, Eugene, OR 97440
(541) 344-5044 ext 17
salmon@pesticide.org

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1 National Research Council. Board on Agriculture, Committee on Long-Range Soil and Water Conservation. 1993. *Soil and water quality*. Washington D.C.: National Academy Press p. 334.

2 Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) § 2(u).

3 Gilliom, R., Barbash, J., Kolpin, D, & Larson, S. 1999. Testing water quality for pesticide pollution: US Geological Survey investigations reveal widespread contamination of the nation's water resources. *Environmental Science & Technology News*. April 1, 1999. p. 164-169A.

4 *The quality of our nation's waters: Nutrients and pesticides*. 1999. Reston, VA: USGS. p. 76. USGS Circular 1225.

5 USGS, National Water Quality Assessment Program publications: Wentz, et al. 1998. *Water quality in the Willamette Basin, Oregon 1991-95*. Circular 1161. Domagalski, et al. 2000. *Water quality in the Sacramento River Basin, California, 1994-98*. Circular 1215. Dubrovsky, et al. 1998. *Water quality in the San Joaquin-Tulare Basins, California, 1992-95*. Circular 1159. Ebbert, et al. 2000. *Water quality in the Puget Sound Basin, Washington and British Columbia, 1996-98*. Circular 1216. Williamson, A.K. et al. 1998. *Water quality in the Central Columbia Plateau, Washington and Idaho, 1992-95*. Circular 1144.

6 NOAA/National Marine Fisheries Service website: http://www.nwr.noaa.gov/1salmon/salmesa/pubs/1pgr.pdf. Updated April 2001.

7 Scholz, N.L. et al. 2000. Diazinon disrupts antipredator and homing behaviors in chinook salmon (*Oncorhynchus tshawytscha*). *Canadian Journal of Fisheries and Aquatic Sciences*. 57:1911-1918.

8 Ewing, R.PhD. 1999. *Diminishing returns: Salmon decline and pesticides*. Eugene, OR: Oregon Pesticide Education Network.

9 Lind, P. 2002. *Poisoned Waters: Pesticide contamination of waters and solutions to protect Pacific salmon*. Eugene, OR.