Focus on Lake Chelan DDT/PCB Watershed Cleanup Plan

Water Quality Program, Central Regional Office

Lake Chelan is the longest and deepest natural lake in the state of Washington. Its clarity and beauty draw people from far and wide to the area. The Lake Chelan watershed supports many beneficial uses, including drinking water, boating, swimming, fishing, forestry, agriculture, and tourism. The watershed is also important habitat for aquatic life and other wildlife.

In 1998, Lake Chelan and Roses Lake (near Manson) were not meeting state water quality standards for DDE (a derivative of DDT) and PCBs. In response, a water cleanup plan or TMDL is being implemented to address these problems.

What is a water cleanup plan or TMDL?

A water cleanup plan or TMDL describes the type, amount, and sources of water pollution in a particular waterbody; analyzes how much the pollution needs to be reduced or eliminated to achieve clean water standards; and provides strategies to control pollution.

What are the pollutants and why are they a concern?

DDT:

DDT is an agricultural and residential pesticide that was used for about three decades after its introduction in the early 1940s. Through widespread applications, its effect on insects improved crop yields. However, after its adverse effects on birds and other wildlife and its cancer-causing potential became well known, the production and distribution of DDT was banned in 1972. The chemical has migrated to streams in Lake Chelan and Roses Lake where it remains persistent in the environment and has accumulated in the sediment, plants, aquatic organisms, and fish tissue.

DDT in the environment converts into DDE and enters the water on organic and soil particles. DDE is not readily broken down by microorganisms, heat, or ultraviolet light, nor does it readily dissolve in water. Once in the streams and lakes, it collects in the water column and sediment and makes it way into plants and organisms at the base of the food chain. Fish acquire DDE through feeding on vegetation, aquatic organisms, and smaller fish. DDE accumulations in fish tissue can be many thousands of times higher than in water. Animals and birds eat the fish and aquatic organisms. People eat the fish and birds.

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PCBs:

PCBs (polychlorinated biphenyls) come from old industrial chemicals. PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment, affect the health of aquatic and other wildlife, and are a probable cause of cancer. Products made before 1977 that may contain PCBs include electrical transformers, old fluorescent lighting fixtures, electrical devices containing PCB capacitors (such as water pumps), and hydraulic oils.

PCBs have entered the air, water, and soil during their manufacture, use, and disposal; from accidental spills and leaks during their transport; and from leaks or fires in products containing PCBs. PCBs can still be released to the environment from hazardous waste sites, illegal or improper disposal of industrial wastes and consumer products, leaks from old electrical transformers and other devices containing PCBs, and burning of some wastes in incinerators.

PCBs do not readily break down in the environment and remain for very long periods of time. PCBs can travel long distances in the air and be deposited in areas far away from where they were released. In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments. PCBs also bind strongly to soil. PCBs are taken up by aquatic organisms and fish, accumulating in fish tissue to levels that can be many thousands of times higher than in water.

What is being done to address these problems?

The Washington State Department of Ecology and the Lake Chelan Water Quality Committee are developing a TMDL or water cleanup plan and coordinating local cleanup activities. Local watershed associations, landowners, growers, citizens, businesses, and public officials are participating in cleanup efforts. The Lake Chelan watershed TMDL is also being coordinated with other local and regional water resource and fish recovery efforts.

What can I do?

You can help! To become involved in supporting cleanup efforts or request more information, please contact Dwane Van Epps, City of Chelan, at (509) 682-8030, David Schneider, Department of Ecology, at (509) 454-7894 (E-mail to dasc461@ecy.wa.gov), or visit the website at http://www.ecy.wa.gov/programs/wq/tmdl/watershed/index.html

If you require this publication in an alternate format, please contact David Schneider at (509) 454-7894 (Voice) or (TTY) at 711 or 1-800-833-6388.