Focus on **Upper Yakima Basin**

from Ecology's Water Quality Program

Restoration plan targets sediments

The upper Yakima River and its tributaries are used by people in many ways, from agricultural needs to recreational enjoyment. These waters are also important spawning and rearing areas for many salmonid species, as well as home to other wildlife. However, pollution threatens the health of the river and jeopardizes its many uses.

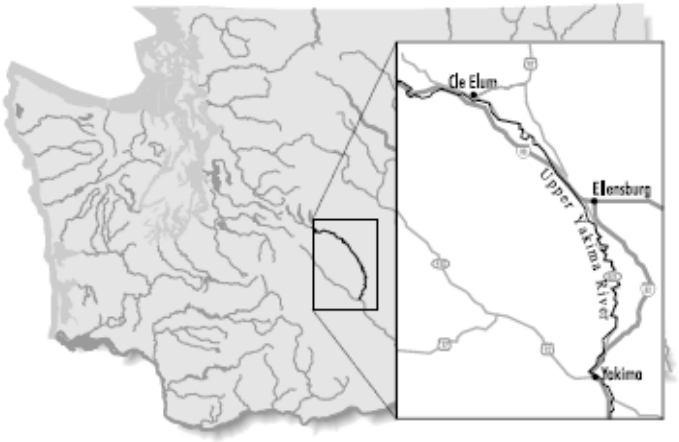
Currently, the upper Yakima River is a priority for study and cleanup due to high levels of suspended sediment, turbidity (cloudiness) and pesticides in the water. The Washington State Department of Ecology (Ecology) has conducted a field study of the water quality in the upper Yakima River basin and has developed a technical assessment based on this study: the *Upper Yakima River Basin Suspended Sediment & Organochlorine Pesticide Total Maximum Daily Load (TMDL) Evaluation*. Meanwhile, upper Yakima Basin residents are working hard to improve irrigation and timber harvest practices to reduce sediments and pesticides in the river.

What is a Water Cleanup Plan or TMDL?

Federal law requires states to identify pollution sources in waters that fail to meet state water quality standards and to develop Water Cleanup Plans, also called Total Maximum Daily Loads or TMDLs, for restoring waters to good water quality. The plan identifies 1) sources of pollution in waters that fail to meet state water quality standards, and 2) strategies to control pollution. TMDLs establish limits on the quantity of pollutants the river can receive and still be able to maintain water quality standards.

Why are suspended sediments a concern?

Suspended sediments can settle to the bottoms of streams, covering spawning gravel, smothering fish eggs, and changing both the habitat and the types of food available for fish and other aquatic creatures. Sediment loads also interfere with irrigation withdrawals and delivery systems.



Turbidity, or cloudiness of the water, is associated with the amount of suspended sediment in the water. High turbidity can interfere with fish migration, feeding, and spawning. High turbidity also alters biological productivity by reducing the amount of light that penetrates the water and by increasing stream temperatures.

Suspended sediments can carry other pollutants such as pesticides, washed from lands where the pesticides were applied.

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Why are pesticides such as DDT and dieldrin a concern?

- Although they have been banned for many years, the pesticides DDT and dieldrin are still found in the Yakima River. These organochlorine pesticides are insoluble in water and can persist in the environment for many years.
- Concentrations of these pesticides are most often found tightly attached to soil particles or in the fat of fish and other aquatic animals exposed to contamination.
- DDT and dieldrin have been linked to cancer in humans and animals. DDT is also known to weaken eggshells, thereby lowering the rate of chick survival in wild birds. These pesticides can also harm or kill aquatic insects, a critical food for many salmonid species.

What activities contribute to increased levels of suspended sediments and pesticides found in the river?

Irrigated agriculture makes up a significant portion of the land use in the upper Yakima Basin, which lies mainly in Kittitas County. Timber harvest, livestock grazing, and recreation in forested areas are the major land uses outside the irrigated areas. Soil is carried to the river from many sources, including erosion from irrigated agricultural lands, inadequately protected roads, and poorly managed forest and range lands. Natural erosion during high water events is often increased by human activities. Eroded soils may also carry pesticides into the river.

What actions have been taken?

Soil washed from furrow-irrigated fields is one source of suspended sediment in the upper Yakima River. Improving how irrigation tailwater is managed is a key element in reducing the amount of sediment that reaches the river.

The Kittitas County Conservation District (KCCD), the Natural Resources Conservation Service, Kittitas County Water Purveyors, Kittitas County, local irrigation districts and water companies, and many others have taken early actions to improve and protect water quality in the upper Yakima watershed. Local irrigators have implemented numerous practices designed to reduce soil erosion from irrigated croplands. Additionally, new and existing laws and agreements will provide guidance to timber harvesters regarding prevention of sediment erosion from forest roads and lands, which will help reduce suspended sediments in waters adjoining forested lands.

What's next?

A workgroup made up of representatives of farm and forest interests, as well as local, state and federal advisory agencies, will continue to develop strategies for restoring water quality in the upper Yakima River Basin.

For more information:

If you have questions about Ecology's work in the upper Yakima Basin, contact Jane Creech at (509) 925-2557 or email *jton461@ecy.wa.gov*. You can review the reports for this TMDL on Ecology's TMDL webpage at:

http://www.ecy.wa.gov/programs/wq/tmdl/watershed/tmdl_info-cro.html

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