Beach Sediment Evaluation
Upper Columbia River and Lake Roosevelt
Eastern Washington

Washington State Department of Health

DOH 334-228 April 2010

The Washington State Department of Health completed a health consultation that looked at contaminants found in beach sediments between the Washington/Canada border and Grand Coulee Dam in Eastern Washington. The goal is to see if there's a health hazard for people who come into contact with contaminants found in beach sediments.

Background

The Columbia River flows from British Columbia, Canada, south through Washington and west to the Pacific Ocean. Construction of Grand Coulee Dam and reservoir created Lake Roosevelt, which is about 135 miles long. Smelting and mining activities in British Columbia and northeast Washington have left contaminants in the Upper Columbia River and Lake Roosevelt, and along its beaches.

In August 1999, the Confederated Tribes of the Colville Reservation petitioned the Environmental Protection Agency (EPA) to assess human health and environmental risk caused by contaminants in the Upper Columbia. EPA conducted a site investigation in 2001 that included collecting sediment samples from the upper 70 miles of the Upper Columbia River and Lake Roosevelt. Findings from this investigation led EPA to recommend more study. Since then, an EPA-directed Remedial Investigation/Feasibility Study began and several studies have been started on the water, sediments, and fish of the Upper Columbia River and Lake Roosevelt.

This document focuses only on beach sediment.

Beach sampling

EPA collected sediment samples in April and May of 2005. About 66 samples were taken from 15 higher-use beaches between the international border and Grand Coulee Dam. The samples were analyzed for contaminants of concern.

Sediment evaluation

The Department of Health used EPA's sampling results to look for health hazards from contact with beach sediment. When evaluating health hazards, the following must be considered:

- The type of contaminant.
- How long a person is exposed.
- How much a person is exposed to.
- How a person is exposed (breathing in, eating, or skin contact).

We also looked at the site conditions (i.e. water level, the amount of beach sediment that people come in contact with) and the amount of time people typically spend at the specific locations.

We found that some of the sampled areas were covered by water most of the year. That means the amount of time that people could potentially come into contact with some of the sediment is very low.

Conclusions

The health consultation for the beach sediment evaluation concludes:

- There is no public health hazard for people living in the area who come into contact with Upper Columbia River or Lake Roosevelt beaches or near-shore sediments for up to 35 days in a year.
- There is no public health hazard for people visiting the area on vacation and coming into contact with Upper Columbia River or Lake Roosevelt beaches or near-shore sediments for a 14-day period, or two weeks per year.
- Some beaches closer to the international border (Black Sand Beach, Northport boat ramp, and Marcus Island campground beaches) had higher levels of metal contaminants, such as lead and arsenic. The Department of Health recommends EPA conduct additional beach sampling at those locations.

The potential health effects of breathing-in windblown sediment from Lake Roosevelt beaches are not evaluated in this report. EPA will consider the potential health effects from contaminants in windblown sediment in the Human Health Risk Assessment. Current plans call for the risk assessment to be completed in 2014. Check with EPA for information on that assessment.

What can you do?

It's a good idea to avoid or reduce your exposure to contaminants, even if exposure to contaminants found in beach sediment is not likely to be a health hazard:

- Wash your hands after playing at the beach.
- Wash heavily-soiled clothing to remove beach sediments.
- Wash children's beach toys.

What's happening next?

Agencies are collecting more information about beach sediments and taking cleanup action at one location.

- EPA is overseeing additional beach sampling being conducted by Teck American, Incorporated. This round of sediment sampling began in September 2009 and will continue in spring 2010. The new results will be combined with those from 2005.
- The state Department of Health will evaluate new sediment data as it becomes available.
- Teck American, Incorporated has entered into a voluntary agreement with the state Department of Ecology to remove slag-contaminated sediment from Black Sand Beach. The work will be done in the fall of 2010.
- Department of Health is developing a separate health consultation to evaluate fish tissue data from Lake Roosevelt.

For more information

Department of Health's report on Lake Roosevelt Beach Sediments: (http://www.doh.wa.gov/consults)

U.S. Environmental Protection Agency: (http://yosemite.epa.gov/r10/cleanup.nsf/sites/upperc)

Department of Ecology: (http://www.ecy.wa.gov/programs/tcp/sites/blackSandBeach/blackSandBeach_hp.html)

Contact information

Health - Washington State Department of Health
Toll Free 1-877-485-7316

Sampling and cleanup activities - U.S. Environmental Protection Agency
Toll Free 1-800-424-4372

Black Sand Beach sediment removal - Washington State Department of Ecology
1-509-329-3439

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