

# Bokan Mountain Uranium Exploration: Potential Effects on Salmon

Southeast Alaska Conservation Council



Radioactive contamination from the abandoned uranium mine at Bokan Mountain on Prince of Wales has spread into the environment through radionuclides such as uranium, thorium and radium in the ground and surface water systems. In fact, because of the persistence of contamination in water systems, radioactive particles may spread as many as fifteen miles from the site and contaminate freshwater salmon spawning streams, marine sediments and parts of marine bays.<sup>i</sup> This persistence and wide area of contamination raises concerns for radiation exposure to Southeast's greatest resource, salmon.

When exposed to contaminated waters, salmon and other fish, as well as plankton, aquatic vegetation, mollusks and crustaceans, can and do accumulate radionuclides including uranium and radium in their bodies through absorption at the gills and through ingestion.<sup>ii</sup> Once inside the body, the radiation from these particles can cause sterility and genetic abnormality.<sup>iii</sup> However, these radionuclides not only have the potential to harm the individual fish, but the animals and people who eat the fish. As a person, or an eagle, or a brown bear eats more and more contaminated fish, more and more radionuclides accumulate in their bodies.

The more a fish is exposed to contaminated waters, the more likely it is to accumulate radionuclides. Logically, of the four types of salmon in the area, coho and sockeye salmon, which spend up to three years in their spawning grounds, would be most likely to accumulate the contamination that is found in the freshwater systems around Kendrick Bay. Molluscs and crustaceans, such as sea cucumbers and red urchins, which spend their lives in the contaminated marine sediments, would be even more likely to accumulate radioactive contamination.



Fish and other underwater creatures are not the only animals in danger of contamination through the water supply. Plants can accumulate radionuclides through absorption from the groundwater. When a deer or a bear eats the vegetation, they also eat the radionuclides. In fact, deer, river otters, bobcat, gray fox and raccoons have all been found with elevated levels of radionuclides in areas where radiation contamination has occurred.<sup>iv</sup>

## What you can do!

- Talk to your neighbors about the dangers of uranium mining in your backyard
- Check online for more information about Uranium Mining. Try the EPA website at <http://www.epa.gov/rpdweb00/index.html>
- Contact Rob Cadmus at SEACC with more questions - [rob@seacc.org](mailto:rob@seacc.org) or 907-586-6942

<sup>i</sup> Kent and Sullivan. 2004. "2004 Preliminary Assessment/Site Inspection Report: Ross Adams Uranium Mine, Prince of Wales Island, Alaska." Prepared for USDA Forest Service, Alaska Region.

<sup>ii</sup> "Fisherman's Group says Offshore Drilling Threatens Fish and Oceans." August 6, 2008. Accessed October 16, 2008 at [http://www.aquanet.com/index.php?option=com\\_content&task=view&id=1916&Itemid=2](http://www.aquanet.com/index.php?option=com_content&task=view&id=1916&Itemid=2)

<sup>iii</sup> Cole, S., Codling, I.D., Parr, W. and Zabel, T. Guidelines for managing water quality impacts within UK European marine sites. 1999. Prepared for the UK Marine SAC Project

<sup>iv</sup> Neff, Jerry. Bioaccumulation in Marine Organisms: Effect of Contaminants from Oil Well Produced Water. Elsevier: 2002. Chapter 11: "Radium Isotopes in the Ocean"