



RIVERKEEPER STUDY: *RIVERNOSE* IN THE COLUMBIA RIVER

69% OF PSEUDOMONAS
BACTERIA SAMPLES
EXCEED SAFE LEVELS



About Columbia Riverkeeper: Riverkeeper is a 501-c(3) non-profit organization based in Hood River, OR working to protect and restore the waters of the Columbia River from the headwaters to the Pacific Ocean.

WWW.COLUMBIARIVERKEEPER.ORG

WHAT IS *RIVERNOSE*?

“Rivernose” is a term used to describe a host of symptoms experienced after river-use including:

- Sinus infections or pain
- Chronic runny nose
- Coughing
- Ear infections
- Eye infections
- Rashes
- Sore throats
- Poor healing of wounds
- Eye irritations
- Gastrointestinal symptoms

Background: Studies by Oregon Department of Human Services and US Environmental Protection Agency (EPA) concluded that *Rivernose* is a real concern and that river users are much more likely to suffer from ear and eye infections, as well as respiratory and skin symptoms suggesting that river-use or water quality may be a significant factor contributing to these symptoms. Columbia Riverkeeper joined the EPA in a scoping study and found that harmful bacteria (*Pseudomonas aeruginosa*, *Aeromonas* spp, cyanobacteria), *E.coli* and Semi-volatile organic compounds **are present** in the river.

FLIP TO VIEW 2010 STUDY RESULTS

2010 RIVERNOSE STUDY RESULTS

Riverkeeper and EPA analyzed water samples for pathogenic bacteria (*Pseudomonas aeruginosa* and *Aeromonas* spp.) and fecal indicators (*E.coli*) bi-monthly at six commonly used recreation sites along the Columbia River. The study found harmful bacteria present in the river at levels of concern.

Pseudomonas aeruginosa:

- Pathogenic bacteria, associated with runny nose, sinus infections, eye infections, ear infections, wound infections, skin rashes, and poor healing of wounds (all more common in immune-compromised individuals).
- **The United States has no standard** to gauge safe levels of this bacteria in recreational waters.
- Canada, however, sets a safe level for primary contact recreation at **2 bacteria colonies/100ml or less** (adopted for the specific goal of preventing skin and ear infections common to *P. aeruginosa* exposure).
- **RESULTS: 69% of the Columbia River samples contained five times more Pseudomonas bacteria than the safe standard.** (33/48 samples contained greater than 10 bacteria colonies/100 ml).
- **Therefore, most of the Columbia River samples exceeded safe levels by 400%:** The Samples with less than 10 colonies cannot be enumerated and were, therefore, not counted as exceeding the standard. However, uncounted samples may still exceed the Canadian standard of 2 colonies per 100mL.
- **Nearly half of samples exceeded safe levels by 900% or greater (44% of Columbia River samples showed 20 bacteria colonies/100ml).**

SAMPLE LOCATIONS

- *Bob's Beach in Stevenson, WA*
- *Doug's Beach in Lyle, WA*
- *The Event Site in Hood River, OR*
- *Inner Hook in Hood River, OR*
- *The Wall in Maryhill, WA*
- *Roosevelt Park in Roosevelt, WA*

Aeromonas:

- Genus of 16 different species, five of which are pathogenic (disease-causing in humans).
- Associated with gastrointestinal symptoms, blood poisoning, wound infections, eye inflammation, meningitis, endocarditis, aspiration pneumonia and biliary tract infections (infections typically follow trauma in an aquatic environment in people with compromised immune systems).
- **No federal or state standard** in the U.S. to gauge safe levels in recreational or drinking waters.
- Canadian maximum standard for drinking water is 0 cfu/100ml.
- **RESULTS: 100% of the samples collected exceeded 200 cfu/100ml and 96% exceeded 2,000 cfu/100ml.**

E. coli:

- Indicator of fecal contamination.
- In 2010, no *e.coli* samples for this study exceeded the state or federal water quality limit.

HOW CAN YOU PROTECT YOURSELF?

- Wash off after river-use and stay away from the river with open cuts.
- Swim at least 500 feet upstream of pipes discharging waste into the river.
- Ensure that your septic and sewer system are properly maintained.
- Pick up your pet's waste near the river.
- Protect or restore native, riverside vegetation up to 300 horizontal feet perpendicular to the shoreline to help filter pollution from runoff and dissuade congregations of geese.
- Keep trash off roads and out of rivers.
- Use minimal to no synthetic fertilizers and pesticides in gardens and lawns.
- Use biodegradable house cleaning products and beauty products.
- Conserve water and energy use to increase river flow.
- Report hazardous waste and illegal dumping.



Anabaena sp. is a harmful cyanobacteria.