

*A series of fact sheets on topics related to potential Pebble mine development.*

## About Pebble Watch

The Pebble Watch team consists of scientists and science communicators who can research and answer your questions about potential Pebble mine development—from science reports to permitting. Write [staff@pebblewatch.com](mailto:staff@pebblewatch.com).

## 404(c) explained

Section 404(c) of the Clean Water Act gives the Environmental Protection Agency (EPA) the authority to limit or prohibit disposal sites for dredged or fill material “if the discharge will have unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas.”

The EPA’s Bristol Bay Watershed Assessment is not officially part of the 404(c) process. However, its purpose is to gather information to help the agency decide whether a 404(c) action is warranted.

If available science suggests unique factors of Bristol Bay’s watersheds are vital to supporting the region’s one-of-a-kind fisheries and wildlife, EPA may initiate a 404(c) action. If this should happen, the decision would include additional opportunities for public comment.



# U.S. EPA Bristol Bay Watershed Assessment

*Kaskanak Creek in the Kvichak watershed. Photo: USEPA*

## What is it?

The U.S. Environmental Protection Agency (EPA) has written a draft scientific assessment of Bristol Bay’s Nushagak and Kvichak watersheds, focusing on the ecological impact large-scale mining development could have on the area.

The document, “Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska,” is split into the following three sections:

- **Volume 1** - 339 pages - Executive summary plus nine chapters that detail the ecological and mineral resources in Bristol Bay, mining processes and scenarios, risks, and potential watershed-scale effects of multiple mines.
- **Volume 2** - 457 pages - Appendices with data on the Bristol Bay fishery, wildlife resources and traditional ecological knowledge of the watersheds.
- **Volume 3** - 385 pages - Appendices with data on wild salmon and marine life, environmental impacts of road and pipeline development on water quality and fish resources, mitigation practices, and more.

## Why is it important?

The document provides insight into potential risks to the largest sockeye salmon fishery in the world. Based on a final version of the assessment (anticipated in Fall 2012), EPA could decide to exercise its authority under 404(c) of the Clean Water Act to prohibit or limit the discharge of dredged or fill material in these watersheds. Such action could block, limit or place restrictions on the development of large-scale mines in the region--and would require an additional public process. A decision to take no action is also possible.

## How does the assessment relate to Pebble mine?

The proposed Pebble mine is the most well-known and controversial project in the Bristol Bay area. EPA’s watershed assessment offers a risk analysis based on a hypothetical mine scenario that includes a mine plan similar in size and scope to what was previously proposed for the Pebble deposit: an open pit mine producing between 2 billion and 6.5 billion metric tons of ore and an 86-mile road.

## Findings from the Watershed Assessment

### About salmon

All five species of North American Pacific salmon are found in Bristol Bay. The Bristol Bay watershed supports the largest sockeye salmon fishery in the world. The Kvichak River produces more sockeye than any other river in the world, while the Nushagak River is the fourth largest producer of Chinook in North America.

### Effects of mining

At a minimum, a mine of this scale would result in the direct loss of some streams and wetlands, including spawning and rearing habitat for fish. Even with no significant accidents or failures, a large-scale mine would have impacts on water resources and fish habitat near the operations.

### Mine failure

Failures in infrastructure or processing would have wider-ranging effects on wildlife, fish habitat and indigenous culture. The risks of such failure are difficult to calculate in the face of many uncertainties, such as changing ownership/maintenance, or how well recently engineered systems might hold up over centuries of extreme weather or geological events. The probability of many types of catastrophic failures is very low, but some, such as water collection and treatment operation, were found to have high or even certain probability of occurring. If not treated into perpetuity, for example, untreated leachates will flow to the streams.

### Sociocultural effects

Loss of salmon-based subsistence resources due to mining effects or failure would lead to negative impacts on Alaska Native nutritional, social and emotional health.

## Getting involved

The draft watershed assessment is being peer-reviewed by multiple independent experts in relevant fields. However, opinions from the general public—and residents of Bristol Bay—are welcome too. Throughout the process of preparing the watershed assessment, EPA has stated its commitment to collect and consider public input on the document.

Bristol Bay residents have already given EPA insight and knowledge about the Nushagak and Kvichak watersheds, including how they use and depend on natural resources found there. Local commentary is still valuable during the public input process, so plan on participating! Here's how:

1

### Read.

Links to all volumes of the assessment are found at the top of the Pebble Watch Resources page at [www.pebblewatch.com/documents](http://www.pebblewatch.com/documents). Start with the Executive Summary in Volume 1 for a quick overview.

2

### Comment.

What do you want to tell the EPA about the assessment? Give your input online, by email, letter, fax, or in person at a public meeting.

**Deadline for public comment: July 23**

3

### Track status.

“Like” Pebble Watch on Facebook, or visit our website for regular updates on the assessment as the peer review team weighs in and the final document is prepared.

### Questions to consider

- Do you particularly agree or disagree with something in the assessment?
- Do you believe the proposed Pebble mine could have an impact on Bristol Bay watersheds?
- Is there something in your personal experience or knowledge that would add value to your comment?

### Comment at public meetings

Meetings are scheduled May 31 in Seattle and in Alaska locations from June 4-7. Get details online at [www.epa.gov/region10/bristolbay/](http://www.epa.gov/region10/bristolbay/) or [www.pebblewatch.com](http://www.pebblewatch.com).

### Comment in writing

Include this docket number with your comments:  
**EPA-HQ-ORD-2012-0276**

**Submit online:**  
[regulations.gov](http://regulations.gov)

**Send an email:**  
[ORD.Docket@epa.gov](mailto:ORD.Docket@epa.gov)  
(Include docket number in the subject line.)

**Send a fax:**  
(202) 566-1753  
(Include docket number in the subject line.)

**Send a letter:**  
Office of Environmental Information (OEI) Docket (Mail Code: 2822T)  
Docket #  
EPA-HQ-ORD-2012-0276  
U.S. EPA  
1200 Pennsylvania Ave., N.W.  
Washington, DC 20460