

Bristol Bay's Wild Salmon Ecosystems and the Pebble Mine: Key Considerations for a Large-Scale Mine Proposal

Report Overview

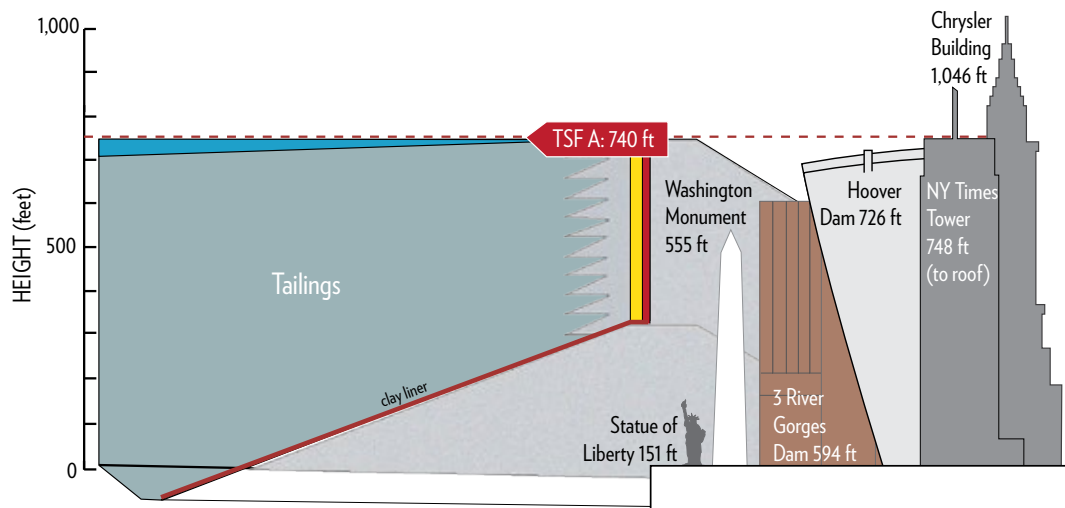
Wild Salmon Center and Trout Unlimited have produced a report examining the proposed Pebble Mine and its impacts on the wild salmon fishery of Bristol Bay, Alaska. This report describes significant ecological, economic, and cultural concerns raised by proposed development of the Pebble copper, gold, and molybdenum deposit in the headwaters of the Bristol Bay basin, which is home to North America's most abundant wild salmon fishery and the world's largest sockeye salmon run.

The Threat: Pebble Mine

- As proposed, the Pebble Mine project would be **one of the largest mines in the world with a footprint that would cover 28 square miles of land.**
- The mine would produce **up to 10.8 billion tons of waste rock**, resulting in one or more of the world's largest tailings storage facilities, and feature an open pit up to 4,000 feet deep and 2.3 miles wide.
- Up to **nine miles of dams reaching up to 740 feet high** (Figure 2) **would be required to impound just 2.5 billion tons of the toxic waste produced** (called *tailings*), which will need treatment in perpetuity.
- The type of ore at Pebble is **likely to produce acid mine drainage**, which would have a severe detrimental impact on aquatic life.
- The region's seismic activity and extreme weather conditions could trigger **dam failures, resulting in potentially catastrophic impacts** to the Bristol Bay fishery.
- The Pebble Mine's infrastructure would include a network of roads, pipelines, a port, and an energy-generating station, which would **pave the way for additional mining proposals** in Bristol Bay.

Tailings Storage Facilities

Figure 2. Preliminary plans have proposed two tailings storage facilities (TSFs). Combined, these TSFs can store 2.5 billion tons of mine waste, less than a quarter of the estimated 10.8 billion tons of ore on site.



Bristol Bay Basin, Alaska



Figure 1. The Bristol Bay basin is made up of six major watersheds: the Togiak, Nushagak, Kvichak, Naknek, Egegik, and Ugashik.

Why is Bristol Bay Important?

- The Bristol Bay basin (Figure 1) is **one of the top producing wild Pacific salmon systems in the world**, yielding up to 40 million mature salmon each year.
- Bristol Bay is **the most lucrative wild salmon fishery in Alaska**, supporting nearly 14,000 jobs nationwide and generating an estimated \$318 to \$572 million annually.
- Bristol Bay's annual salmon migration **provides dietary protein for humans, dozens of species**, and deposits tons of marine-derived nutrients that are essential to the health and ecological function of the basin.

How much is 10.8 billion tons?

If rail cars carrying 100 tons each were used to transport the roughly 10.8 billion tons of ore, the effort would require 108 million rail cars. With standard 65-foot-long hopper rail cars, the train would measure 1.33 million miles, long enough to circle the Earth at its equator over 50 times.

Key Report Findings

- The Bristol Bay basin contains globally significant wild salmon populations of extraordinary abundance. These populations are highly vulnerable to even small changes in habitat and water quality.
- The proposed Pebble Mine has the potential to permanently degrade Bristol Bay ecosystems and adversely impact its wild salmon populations.
- If permitted, the Pebble Mine will enable the development of a mining district many times larger than the Pebble Mine lease (Figure 3), substantially increasing the likelihood that mining operations will adversely impact Bristol Bay ecosystems.
- Economic evaluations promoting mine development do not adequately account for the value of healthy ecosystems or the long-term costs associated with large mine clean-up.
- Alaska's large mine permitting process may be inadequate to ensure the conservation of Bristol Bay's wild salmon ecosystems; to date, the State of Alaska has never denied a permit for a large-scale mine.

Conclusion

Based on the findings of the report, as preliminarily proposed, the Pebble Mine will degrade the Bristol Bay basin's aquatic and terrestrial ecosystems and adversely impact the region's world class salmon fishery. While mine proponents will go to great lengths to assure the public that the mine will result in no net loss of salmon resources, no mine of Pebble's massive scale has operated successfully in a sensitive aquatic ecosystem long enough to make this claim. There is too much at stake to conduct an experiment of this scale with a resource of Bristol Bay's economic, ecological, and cultural value.



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For a copy of the full report, go to: wildsalmoncenter.org



Growth of the Mining District

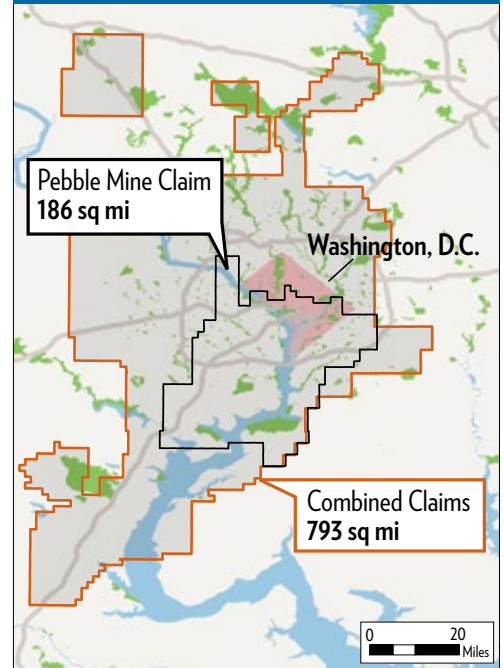


Figure 3. Seven different mining operators have established claims since the Pebble Limited Partnership, and initiated leases covering 793 square miles, an area ten times larger than Washington D.C.

Power and Water Usage

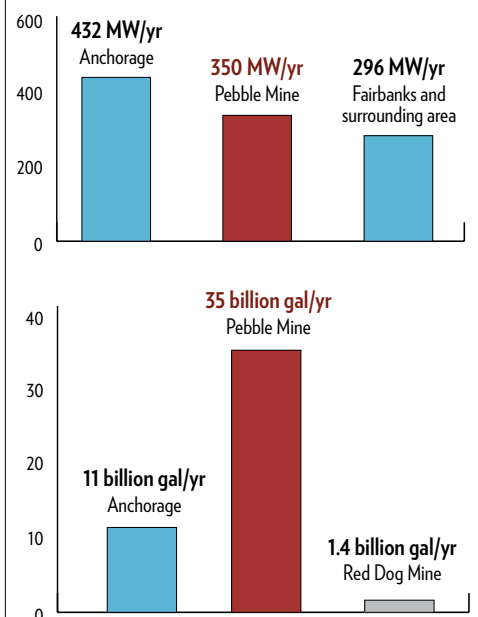


Figure 4. Estimated Pebble Mine power usage (MW/yr) compared to the cities of Anchorage and Fairbanks and estimated water usage (billions gal/yr) compared to Anchorage and Red Dog Mine, currently the largest mine in Alaska.