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Newsroom

PSE's new Baker River \$50 million fish passage system generating success in first few weeks of operation

Signs of record out-migration of young sockeye salmon from new "floating surface collector"

BELLEVUE, Wash. (May 19, 2008) – Juvenile sockeye salmon in northwest Washington's Baker River only recently began their springtime trek to the sea, but early fish counts suggest that Puget Sound Energy's new "floating surface collector" may be inducing the river's largest out-migration of sockeye on record.

The 1,000-ton apparatus floating above Baker Lake's 280-foot-deep bottom is designed to attract and safely capture young salmon for transport around PSE's two Baker River hydropower dams. The river's 2008 out-migration of sockeye, biologists estimate, is at least 70 percent complete. With more than 200,000 juvenile sockeye already collected, the out-migration is peaking as the second highest total run on record and may be on pace to shatter the existing record.

"We're thrilled by the results so far," said Cary Feldmann, manager of resource sciences for PSE and a member of the design team for the new fish collector. "Run timing is variable so it's still too early to make any definitive predictions, but if the current trend in (fish) collection holds, we should surpass the existing record of 289,000 fish."

PSE built the 285-foot-tall Lower Baker Dam in 1925. Upper Baker Dam, 27 feet taller, followed in 1959. PSE has pursued various strategies over the years to help salmon get past the dams, both upstream and downstream. One key effort was construction of the world's only successful floating system in the late 1950s to simulate swift river current behind a large, deep-water dam in order to attract and capture young salmon.

That original PSE "gulper" was considered quite successful in capturing juvenile salmon for a half-hour tanker-truck ride downstream and release into the Skagit River. In the late 1970s and early 1980s, however, the Baker River's sockeye runs suddenly and inexplicably plummeted, with a record-low 99 fish returning to spawn in 1985.

PSE responded by augmenting the first-generation gulper in the late 1980s with the world's first (and still only) deep-reservoir guide-net system. The 2,000-foot shore-to-shore, 280-foot surface-to-bottom net that PSE installed not only prevented small fish from entering Upper Baker Dam's turbines, but helped steer them toward the gulper. The enhanced system produced a dramatic turnaround in the number of juvenile sockeye reaching the ocean. In turn, the number of adult sockeye returning to the Baker basin steadily rose, reaching a record 20,225 fish in 2003.

Despite its effectiveness, Feldmann said, the old fish-transport system had basically worn out. But more importantly, he added, greater understanding of juvenile sockeye biology and their response to various hydrological conditions led PSE, fisheries agencies, and Native American tribes to advocate a new, more sophisticated surface-collector/guide-net system. PSE's new floating surface collector, with four times the capacity of the old gulper, is a \$50 million 130-foot-by-60-foot barge equipped with a series of submerged screens, water pumps, fish-holding chambers, a fish-evaluation station, equipment control rooms, and a fish-loading facility. PSE completed the collector earlier this year following 14 months of lakeshore construction.

The new collector's four primary water pumps – each eight feet in diameter – quadruple the old gulper's speed of simulated "river current" in Baker Lake, providing a stronger attraction for young fish. Further inside the new facility, after fish are captured, a specially designed system of submerged

screens slows the water to prevent fish injury as pumped water is returned back into the lake.

Fisheries agencies hope for a 90 percent to 95 percent capture rate of Baker Lake juvenile salmon from the new fish collector. The old system, by comparison, had an estimated 60 percent capture rate.

Feldmann said fisheries agencies expect PSE's new floating surface collector, together with more than \$100 million in other PSE fish-enhancement projects on which they're collaborating, to quadruple the Baker River's already rebounding sockeye numbers. These other projects, part of a proposed federal license agreement for PSE Baker River Hydroelectric Project, include improvements to PSE's man-made, but naturalistic, sockeye spawning beaches along Baker Lake; construction of a new fish hatchery for raising salmon and trout (with a target of tripling production of Baker sockeye fry to 14.5 million per year); PSE construction of a new trap-and-haul facility below Lower Baker Dam for upstream transport of adult salmon; and additional acquisition or enhancement of wetlands and riparian habitat in the Skagit and Baker river basins.

For more information about PSE's floating surface collector and to see a video on its design and function, visit PSE's Web site and click on the [Energy & Environment](#) tab.

Contact

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About Puget Sound Energy

Washington state's oldest and largest energy utility, with a 6,000-square-mile service area stretching across 11 counties, Puget Sound Energy serves more than 1 million electric customers and 735,000 natural gas customers, primarily in western Washington. PSE, a subsidiary of Puget Energy (NYSE: PSD), meets the energy needs of its growing customer base through incremental, cost-effective energy conservation, low-cost procurement of sustainable energy resources, and far-sighted investment in the energy-delivery infrastructure. PSE employees are dedicated to providing great customer service to deliver energy that is safe, reliable, reasonably priced, and environmentally responsible.

About PSE's Baker River Hydroelectric Project

PSE's largest hydropower facility is the Baker River Hydroelectric Project. Located on a tributary of the Skagit River in northwest Washington, the project has two dams, each with its own powerhouse. The dams' reservoirs, Baker Lake and Lake Shannon, are fed by runoff from the flanks of Mount Baker and Mount Shuksan. Lower Baker Dam, completed in 1925, is a 285-foot-high concrete structure with 70 megawatts of power-generating capacity. The 312-foot-high Upper Baker Dam, completed in 1959, has a generating capacity of 105 megawatts. The project includes extensive salmon-propagation facilities and numerous amenities for public recreation. It also provides flood control for communities in the Skagit River Valley. A 50-year federal operating license granted to the Baker River Project in 1956 expired in April 2006. The project is now operating under an annual license from the Federal Energy Regulatory Commission while PSE seeks a new long-term license.