

Puget Sound Energy Lower Baker Lake Guidance Netting

CONCRETE, WASHINGTON



APPLICATION: GUIDANCE AND BARRIER NETTING

Pacific Netting Products designed, manufactured, and installed a surface-to-lakebed net to guide downstream-migrating smolts to a floating surface collector (FSC) at Puget Sound Energy's Lower Baker Lake facility. The nets were suspended vertically from a pneumatic floatation system that was designed to be lowered during high flow events to prevent large pieces of woody debris from damaging the guide nets. Two floating pneumatically operated debris gates were also installed between the floating surface collector and the guide net to allow easy passage of fine woody debris from within the guidance net.

Working under tight schedules with multiple stakeholder interests, PNP custom-designed and manufactured the flexible guidance screens with high molecular weight polyethylene fiber. These screens had structural features to allow strength, shape, and fish passage service during periods of high pool fluctuations. PNP also installed two lead nets within the pool to facilitate smolt migration and collection. It went into service in 2021, in time for the outbound spring migration.

Now operational, the guide net, lead net, and FSC are expected to set a combined record for downstream juvenile fish outmigration with a growing sockeye population of more than 850,000 and close to a million total fish, including sockeye, coho, Chinook, trout, and char.

INSTALLATION FEATURES

- Full exclusion guide net
- 2,000 ft long x 300 ft deep, about 500,000 sq ft
- Built with 1/8" x 1/8" and 1/4" x 1/4" Dyneema® netting
- Pneumatically operated debris gates
- Pneumatically managed floatation system for high spill events
- Designed for extreme pool fluctuations (50 to 70 ft)
- The previous net helps PSE achieve record downstream fish passage
- Designed for single direction water flow velocities 0.1–0.5 fps
- Secured by shore-side embedment anchors
- Deployed year-round

