

# New orca listening post installed in Puget Sound

By **LYNDA V. MAPES**  
*Seattle Times*

ABOARD THE SOUND-GUARDIAN, Puget Sound — Over the side it goes with a splash: three ears pricked for the sounds of orcas, and the noise that threatens their survival.

In the deep, this trio of hydrophones rests on the sea bottom, recording the sounds of Puget Sound, including endangered southern resident orcas. The listening array, developed and deployed by SMRU Consulting, is attached to a buoy that marks its location, just about a mile offshore, north of Carkeek Park.

The equipment will be in place for three months, in a proof-of-concept experiment to determine if the hydrophones and software can readily pick up the sounds of orcas, record underwater noise and share the data through a cellular transmitter.

If it all works, listening arrays like this can supplement orca sightings by human observers reported on existing networks, already being used by the Washington State Ferries to steer clear of the killer whales. Ultimately, the hope is to deploy multiple arrays in Puget Sound to alert ships to the presence of orcas, so they may voluntarily slow their engines to cut their noise, or change course.

A slower ship and more distant ship is a quieter ship — and that matters to orcas.

With now only 74 orcas in the J, K, and L pods, the southern residents are among the rarest whales in the world. There are at least three threats to their survival: lack of Chinook salmon, their favorite food; pollution; and noise that makes it harder for them to hunt.

Orcas hunt by echolocation — sophisticated biosonar by which they locate, chase and nail their prey. But the noise of ships, ferries and other underwater racket masks the sounds they need to hear to hunt.



Candice Emmons/National Oceanic and Atmospheric Administration

Orcas swim in Puget Sound with Seattle in the background.

## **IF IT ALL WORKS, LISTENING ARRAYS LIKE THIS CAN SUPPLEMENT ORCA SIGHTINGS BY HUMAN OBSERVERS REPORTED ON EXISTING NETWORKS, ALREADY BEING USED BY THE WASHINGTON STATE FERRIES TO STEER CLEAR OF THE KILLER WHALES.**

The Port of Vancouver in British Columbia, Canada, already has a program in place to help quiet the waters it shares with whales. The port in 2017 launched its ECHO program, which includes a voluntary slowdown for ships in Haro Strait and Boundary Pass.

In 2021, the cumulative voluntary participation rate by the marine transportation industry was 90% on transits in Haro Strait and Boundary Pass, reducing underwater noise intensity by 50%, according to ECHO program reports by the Port of Vancouver and Vancouver Fraser Port Authority.

A sister program called Quiet Sound, a project of Washington Maritime Blue, a Seattle nonprofit, is in the works.

The Quiet Sound program is in its initial stages

and includes several efforts, from technology development to eventually implementing a slowdown zone in central Puget Sound, said Rachel Aronson, the program director. Quiet Sound launched in January with \$600,000 from state and federal agencies, ports and foundations.

The program grew out of a recommendation from the orca task force empaneled by Gov. Jay Inslee in 2018.

A first step toward a vessel slowdown initiative is a field trial for the hydrophones to help determine when orcas are in the area. So on a recent morning, Jason Wood, managing director at SMRU, was out on the SoundGuardian, King County's environmental research vessel, to check on the equipment.

Wood worked with Bob Kruger and other crew

members to haul the device aboard, to replace its batteries and check it over.

Then Kruger helped lower the equipment, weighing about a ton, back into the water with an overhead crane, setting it gently on the bottom, to keep right on listening. No southern residents have been picked up on the device yet.

Efforts to quiet the waters come as the Salish Sea is poised to see more vessel traffic.

Issues with the global supply chain and cargo congestion at ports recently have caused a big increase in the number of container ships and bulk carriers sitting at anchor, including in the Salish Sea.

In addition, 22 new or expanding terminal and refinery projects have been proposed, permitted or

recently completed that will increase vessel traffic, according to a 2021 report by Lovel Pratt, marine protection and policy director for Friends of the San Juans, an environmental nonprofit.

Twelve of the 22 projects would add at least 2,634 annual vessel transits to and from Salish Sea ports in British Columbia, in prime summer foraging habitat of the southern resident killer whales.

In all, 46% of the projected increase in vessel traffic comes from the Trans Mountain Pipeline Expansion and the Port of Vancouver's proposed Roberts Bank Terminal 2, a new container shipping terminal proposed for the Fraser River Delta — where orcas hunt and a crucial Chinook run returns.

If all of the proposed, permitted and recently con-

structed projects in British Columbia are developed, it would result in at least a 25% increase in large, oceangoing commercial vessel traffic, compared with 2020 transits, according to the analysis.

Canada's Trans Mountain Pipeline Expansion alone will add 696 annual tug escort transits between the pipeline terminus in Burnaby, British Columbia, and the entrance of the Strait of Juan de Fuca.

With human impacts only continuing to increase, noise is one problem that can be immediately addressed, Wood noted. It takes many years to rebuild salmon runs. PCBs were banned in 1979 but are still bleeding into the environment.

But slowing a vessel can cut the noise it makes right away. And with enough participants, the effect can make a difference in the orcas' ability to feed.

"It's pretty amazing," Wood said of the success so far of the ECHO program. "That noise reduction converts to foraging time the orcas get back."



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