



A Program of Washington Maritime Blue

Thermal Camera Brings 24/7 Orca Detection to Washington

In a West Coast first, a new thermal coastal camera is providing continuous, 24/7 real-time whale location data to commercial mariners, significantly improving orca protection.

On a sunny April day, Quiet Sound installed the state's first thermal imaging camera for whale detection at Point Wilson in Port Townsend. The location is a strategic vantage point, overlooking Admiralty Inlet, the entrance to the Puget Sound between Port Townsend and Whidbey Island. The camera can detect whales up to three miles away.

Acoustic and physical impacts from commercial vessels are one of the three main threats to the endangered Southern Resident killer whales (SRKW). Key to reducing vessel impact is ensuring large commercial vessels know where whales are. The Whale Report Alert System (WRAS) alerts commercial mariners when they are within 10 nautical miles of a confirmed whale sighting.

"Having a source of nighttime whale detections in north Puget Sound adds an extra layer of protection, especially in an area that our ferries frequently transit," says Adrienne Stutes, Biology Program Lead at the Washington State Ferries, a key user of WRAS.

Over the past few years, Quiet Sound has worked to integrate sightings from Puget Sound's numerous sightings networks into the WRAS system, greatly [increasing the number of alerts to mariners](#). However, visual sightings do not capture the full picture of whale presence.

"Ships transit through Admiralty Inlet at all times of the day and in all weather conditions. We don't always know when orcas are present. Getting to 24/7 detection will allow mariners to adjust transit speed and reduce noise when whales are confirmed to be in the waterway, not only during peak seasons but year-round," says Captain Mike Moore, Vice President at the Pacific Merchant Shipping Association.

Southern Resident killer whales typically utilize their Puget Sound habitat in the winter months. Whale sightings decrease in winter, with fewer daylight hours and increased weather events. To fill this gap in human capacity, Quiet Sound turned to thermal imaging technology. The [WhaleSpotter](#) system uses thermal cameras to detect whales by their heat signatures, enabling detection even at night and in low visibility conditions. AI algorithms then process this thermal data to identify potential whale presence, with subsequent real-time verification by human experts. Confirmed whale locations are immediately relayed to the Whale Report Alert System (WRAS) to notify mariners in near real-time.

Just three hours after installation, the camera detected its first killer whale.

"This is an incredibly exciting and pivotal milestone for the conservation and maritime community. Thermal imaging is proving to be another impactful tool in the toolbox for mitigating the impacts of large vessels on the endangered orcas," says Todd Hass, Special Assistant to the Director at Puget Sound Partnership.

The project is funded by the Puget Sound Partnership. Head to our [website](#) to see images of detections, learn more about the project, and [explore ways to support our program](#).