SOUNDACT!ON

TURNING THE TIDE FOR PUGET SOUND

Point Robinson Hydrophone and Live Cam Proposal: June 2020

Southern Resident Orcas at Point Robinson

BACKGROUND

Sound Action is a nonprofit environmental organization working to protect and defend critical Puget Sound nearshore habitat and the salmon and orcas that rely on the health of this ecosystem. Although we work throughout the Salish Sea region, founder and executive Director, Amy Carey is a long-time island resident and was formerly the director for Preserve Our Islands.

As part of our program work, we partner with organizations throughout the region to document sightings and travel patterns of the endangered Southern Resident Orcas and to connect people to land-based viewing opportunities.

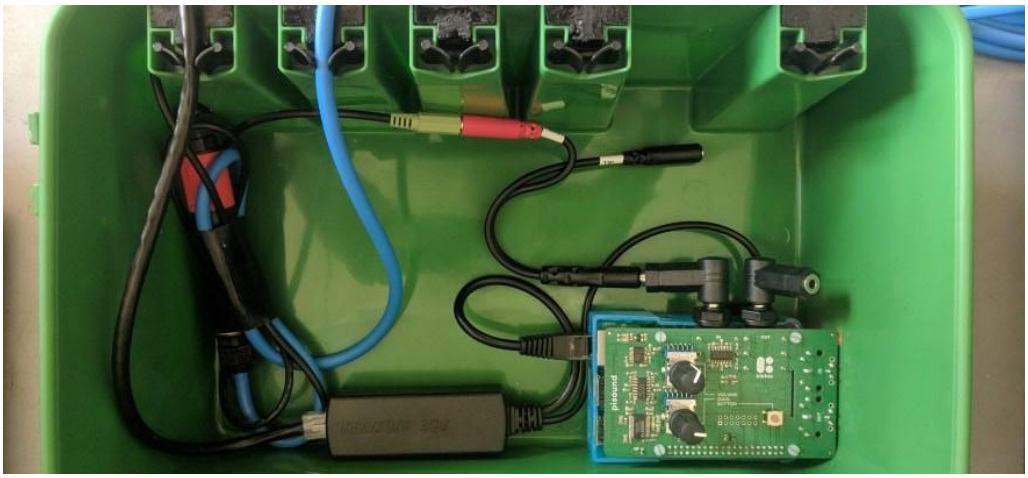
We also have a Vashon Island program called PodBlast, which provides Islanders with text alerts when the whales are in the area. As shown in the cover photo to this proposal, this alert system regularly brings hundreds of our community members to Point Robison to watch the whales as they pass – often very close to the shoreline.

PROPOSAL OVERVIEW

Sound Action proposes to install and maintain a hydrophone (underwater microphone) and live camera at the Point Robinson Lighthouse to capture the orca's vocalizations when they are in the area and to allow virtual viewing when the whales pass.

Although our goal would be for this to become a long-term partnership with the Vashon Park District (VPD), this proposal calls for a five-year agreement from 2020-2025. All costs for installation, permitting, maintenance, and internet access would be paid for by Sound Action.

The hydrophone end of the system would either be installed on the sea bed directly out from the lighthouse and lightly trenched from the extreme low tide line to the point, lightly trenched to the point on land or may be placed directly out from the lighthouse. This final decision would be made after acoustic testing to determine the best listening line. The live feed camera would be mounted directly to the lighthouse exterior in a way that does not create damage. The supporting equipment would be housed inside of the lighthouse in a small containment box (shown below) and connected to AC power and the Internet.



This Point Robinson hydrophone would join the Orcasound hydrophone network (orcasound.net), which makes live audio streams available to the public via any web browser at live.orcasound.net. Orcasound listeners would use the Point Robinson hydrophone and camera feed to help monitor the endangered Southern Resident orcas and the marine environment in East Passage. This hydrophone would complement other Orcasound hydrophones already installed at the Port Townsend Marine Science Center, Bush Point on Whidbey Island, at Orcasound Lab in Haro Strait just south of Roche Harbor, as well as the hydrophone at Lime Kiln Lighthouse on San Juan Island (maintained by The Whale Museum) and other hydrophones listening for orcas in Canada. It would gather acoustic and visual data that would enable local organizations and government agencies to understand and protect undersea marine life.

A hydrophone and live feed camera at Point Robinson would provide a suite of benefits for park visitors and VPD. Not only could renters at the Keepers quarters easily listen in via an internet connected blue tooth speaker or any web browser, the live audio stream would also be available to park to visitors who engage in local marine science and conservation and could enhance the experience of those interested in listening to endangered Southern Resident orcas as they pass.

SITE ASSESSMENT AND LOCATION

The Point Robinson Lighthouse is an excellent location for deploying a shore-based hydrophone. A hydrophone off the point would provide an acoustic view of whales approaching from the north. It would also provide information on whether whales turn to head back up East Passage as they approach from the south or are likely using Colvos Passage to circumnavigate Vashon Island. Whales would likely be detectable when between Dilworth Point and Piner Point in quiet conditions. While the live camera feed would have a narrower capture area, it would allow remote viewing as the whales pass the park.

The lighthouse would provide a dry location with power and internet access to store the pocket-sized computer that relays the hydrophone and camera signal to the outside world. It is a short distance from the lighthouse to a suitable location to place the hydrophone. We could also provide speakers to broadcast sound so all visitors could listen, not just those with cell phones.

INSTALLATION

Prior to installation, the final hydrophone cable route will be determined. Considerations will include underwater acoustics, appropriate burial pathways through the intertidal, and underwater placement that avoids marine vegetation that may be present.

A high-speed internet connection to the lighthouse would be installed at Sound Action's expense. The pocket computer for the hydrophone would be connected to an electrical outlet, the ethernet port of a router connected 24/7 to the Internet, and the hydrophone cable. The thin cable will go from inside to outside the lighthouse. It will then be buried to prevent it from being a tripping hazard and to allow it to safely pass through the intertidal. The cable will be attached to a stand to suspend the hydrophone above the bottom. The stand will be stabilized with lead weights. The weights will be coated with epoxy to isolate them from the environment.

APPROVALS AND TIMELINE

Sound Action requests tentative approval for the project from VPD. If granted, Sound Action would conduct a survey dive to identify a suitable route for the hydrophone cable.

Once a route is identified, Sound Action would complete the project design and seek formal approvals. Approvals needed would include formal approval from VPD and US Coast Guard as well as environmental permits.

Sound Action's goal is to have the system in place by the time the whales typically return to the South Sound in the fall but we will delay installation until all necessary approvals are in place.

EXPENSES

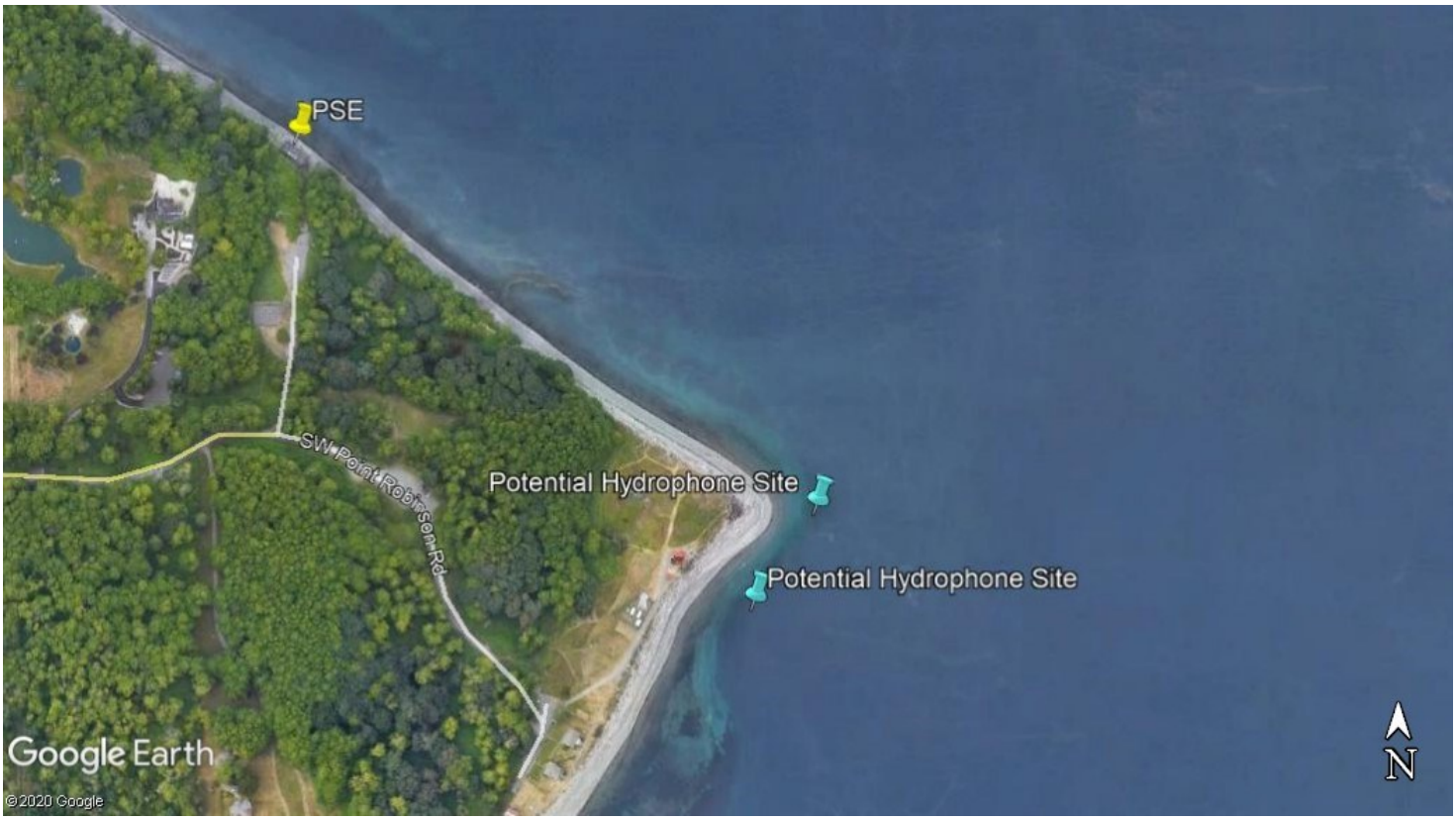
All project costs will be the responsibility of Sound Action. However, for convenience, Sound Action requests that VPD or the Keepers of Point Robinson cover the cost of electricity, which we anticipate to be less than $100 annually.

AGREEMENTS

At part formal approval, Sound Action will enter into a Memorandum of Agreement with VPD.

Please don't hesitate to contact us at (206)745-2441 or amy@soundaction.org with any questions.

POTENTIAL PLACEMENT LOCATIONS



The blue markers show potential site locations for the hydrophone. Final determination would be made after acoustic testing and habitat evaluations. If the location directly off the light house is selected, the cable would run directly out from the lighthouse to the hydrophone. If the location at the point is selected, the cable could either run to the point along land line and then turn into the water, or the line could come out from the lighthouse and travel along the beach.