



Tire reef mapping in the Puget Sound to assess restoration opportunities

In the 1970's, tire reefs (bundles of new or used of automobile tires piled under water) were thought to be an inexpensive solution to enhance underwater habitat, while providing a way to dispose of otherwise unwanted tires. Globally, tire reefs were created for both recreational diving and habitat enhancement. Over time however, these tires have aged, strapping has disintegrated, and bundles have broken apart, resulting in tires and rubber pieces dispersed across the sea floor. A number of tire reefs were established in Puget Sound. Mapping the depth and extent of these deteriorating tire reefs to plan their removal is a priority for WADNR. Zinc, copper oil-based plasticizers, paints and pigments containing zinc and titanium oxides, and, paraphenyldiamines (ozone scavengers), are some of the additives leaching from the broken up tires into the water and sediment of Puget Sound. Some of these substances are known to be toxic to aquatic organisms.

The Aquatic Assessment and Monitoring Team (AAMT) has conducted multi-beam (R2sonic 2020) and side scan (Triton Seastar) sonar, as well as towed video surveys at three pilot sites in South Sound to assess feasibility and formulate a protocol for tire reef mapping. Results from the pilot surveys demonstrate AAMT has the capability to map the footprint of all 15 remaining tire reefs targeted for removal on state owned land; estimate the depth of the piles and number of tires; provide an assessment of bundle integrity and tire dispersal. AAMT will survey identified tire reefs and deliver detailed maps and reef attributes to the Restoration Program who will conduct the necessary steps for facilitating their removal

For more information

Casey Pruitt
Casey.pruitt@dnr.wa.gov



Figure 1. A reef built of tires in Florida. Reefs like these were thought to enhance habitat for fish and provide a solution for an overstock of tires in the 1970s. Photo: Mikkel Pitzner, Project Baseline Gulfstream.

Why does this matter to DNR?

As part of an effort to clean up Puget Sound, WADNR aims to remove tire reefs on state owned land. Multi-beam and side-scan sonar will allow us to provide restoration specialists with the maps they need to adequately remove priority reefs. In addition to mapping reef footprints, vegetation monitoring pre and post restoration will be completed by our staff. Benthic and fish use surveys may also be carried out pre and post restoration to assess the impact of reef removal.



Figure 2. Side-scan data collected with a Triton Starfish 990F side scan sonar. Rows of tires can be seen in the area.