

PUGET SOUND

National Estuary Program

MAYLOR POINT ARMOR REMOVAL

In 1978, the US Army Corps installed a variety of hard armor as a 'Low Cost Shore Protection' experiment along a feeder bluff on Whidbey Island. Most of this armoring failed in a storm in 1979; only timber posts and tires remain. These, along with concrete and other debris, interrupt the transport of natural sediment and cover valuable habitat along 1,500 ft of shoreline.

What we're doing

This project will restore feeder bluff processes and uncover 38,000 ft² of buried shoreline habitat by removing:

- 1,300 tires, 185 chemically-treated timber posts and 165 treated planks
- 5,600 concrete 'pillows'
- 1,100 CY of large armor stone and boulders
- 225 CY of small angular rock



WHAT YOU CAN DO

Maintaining a natural shoreline is often the best means of protecting your waterfront property from erosion. Consider removing hard armor or replacing old armor with a natural soft-shore alternative. Adequate setbacks, native vegetation, and proper drainage management all help slow erosion rates while supporting vibrant marine ecosystems.

ABOUT NORTHWEST STRAITS FOUNDATION

As the nonprofit organization in the Northwest Straits Initiative, the Foundation works with seven county-based Marine Resources Committees and the Northwest Straits Commission to protect and restore marine ecosystems in Puget Sound. The Foundation manages large habitat restoration projects, and provides a variety of resources to interested (public and private) shoreline property owners.

WHY IS THIS ISSUE IMPORTANT

Physical processes such as wave action, landslides, and erosion shape the beaches and extraordinary shorelines of Puget Sound. Hard armor such as concrete bulkheads, seawalls and groins interrupts the natural flow of sand and other sediments. Although 27% of our shoreline is armored, much of it is unnecessary; providing limited or no benefit to property or local economies.

FOR MORE INFORMATION

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Forty years after a US Army Corps of Engineers shore protection experiment failed, this project aimed to restore feeder bluff processes and uncover potential forage fish spawning habitat through the removal of 1,500 linear feet of a variety of hard armor.

Project outcomes

Feeder bluff processes and 38,000 ft² of nearshore habitat was restored through the removal of:
21.34 tons of creosote-treated wood
36.53 tons of tires
1,511 tons of angular rock and armor stone
304.96 tons of concrete bags



Concrete pillows staged for removal

Success stories

It was immediately apparent following removal of the debris that forage fish friendly substrates did exist beneath the large volumes of rock and concrete. Surf smelt eggs were confirmed in a February 2019 survey conducted by Navy personnel. Deferred erosion following armor removal has since contributed new sediment to the site, building up backshore elevations and providing substrate for native vegetation. The site is at the divergence zone of two drift cells, but benefits are being seen along the restoration zone.



Large woody debris accumulates where the tire wall had been.

FUTURE OPPORTUNITIES

Opportunities for complete restoration of feeder bluff processes are rare due to landowner barriers and constraints of existing infrastructure. If funding were available, a preferred monitoring plan would allow for post-restoration surveys to occur in years one through five, then year seven and year ten to fully study the physical and biological responses to shoreline armor removal.

There is potential for additional armor removal to occur to the east of this site, also on Navy property. This reach of shoreline was also assessed several years ago for feasibility; however, infrastructure currently exists at the top of the bluff that the Navy needs to consider future use of before moving forward with armor removal.

LINKS

<https://nwstraitsfoundation.org/project/maylor-point-shoreline-armor-removal/>

Project based on NTA 2016-088

