How has the nearshore changed?

Nearshore ecosystems have changed as our communities have grown and developed. PSNERP compared maps from the 1850s with datasets and current photos to understand what has changed. Here are some results:

- **Nearshore wetlands have been eliminated.** More than 50% of saltwater wetlands throughout the Puget Sound have been lost.

- **Barriers in large river deltas restrict the movement of fresh water and tides.** The major river deltas in Puget Sound have more than 300 miles of bulkheads and have lost more than 40% of their wetlands.

- **Small coastal inlets have been blocked off and filled in.** More than 225 small inlets have been lost. The remaining small inlets are farther apart and their shorelines are often armored by bulkheads, concrete walls, and other structures.

- **Armoring along beaches and bluffs prevents sand and gravel from replenishing beaches and intertidal areas.** Coastal bluffs supply sediment to Puget Sound beaches, and 33% of these bluffs are blocked by shoreline bulkheads.

- **The Puget Sound shoreline has become shorter, simpler, and more artificial.** Over 15% of nearshore habitat important to shellfish, forage fish, and shorebirds has been completely eliminated.

- **Many places are affected by multiple types of changes.** Almost all remaining shorelines in Puget Sound are degraded by one or more of these changes.

- **Why do these changes matter?**
  - Wetlands help absorb energy from storms, waves, and high flows. Loss of nearshore wetlands makes our shorelines more vulnerable to the effects of sea level rise.
  - Shorebirds need large river deltas and nearshore wetlands to rest and “fuel up” as they migrate from the Puget Sound to their northerly breeding grounds.
  - Salmon need large river deltas, small coastal inlets, and shallow water areas to rest, feed, and hide from predators. The loss of these habitats contributes to declines in salmon populations.
  - Shoreline bulkheads can change or reduce the sand and gravel on our favorite beaches resulting in fewer and smaller beaches for people to enjoy.
  - Forage fish and shellfish are an important food source for people and animals alike. Their loss reduces the ecological, economic, recreational, and cultural value of our shorelines.
  - While small scale alterations may be insignificant by themselves, cumulative impacts build over time, compounding the adverse effects.