



Beaconsfield Feeder Bluff

The Beaconsfield bluff site in Normandy Park consists of a largely undeveloped sand and pebble beach that is backed by a high bluff. Several narrow residential parcels extend from the beach up to the lower portion of the steep bluff and one single-family residence is located at the top of the bluff. This group of narrow parcels extends along 1,000 feet of shoreline, and approximately 80 percent of the parcels contain shoreline armor. The armoring disrupts sediment movement needed to sustain beaches nearby and down-drift of the bluff, as well as their associated nearshore habitats (such as forage fish spawning grounds). It is estimated that the current sediment input from the bluff to the beach is 25 percent of its historic volume. Restoration of the bluff would involve acquisition of properties and removal of the armoring. PSNERP has identified this site as one of the highest restoration priorities in the region due to the large volume and high quality of the sediment available in the bluff.

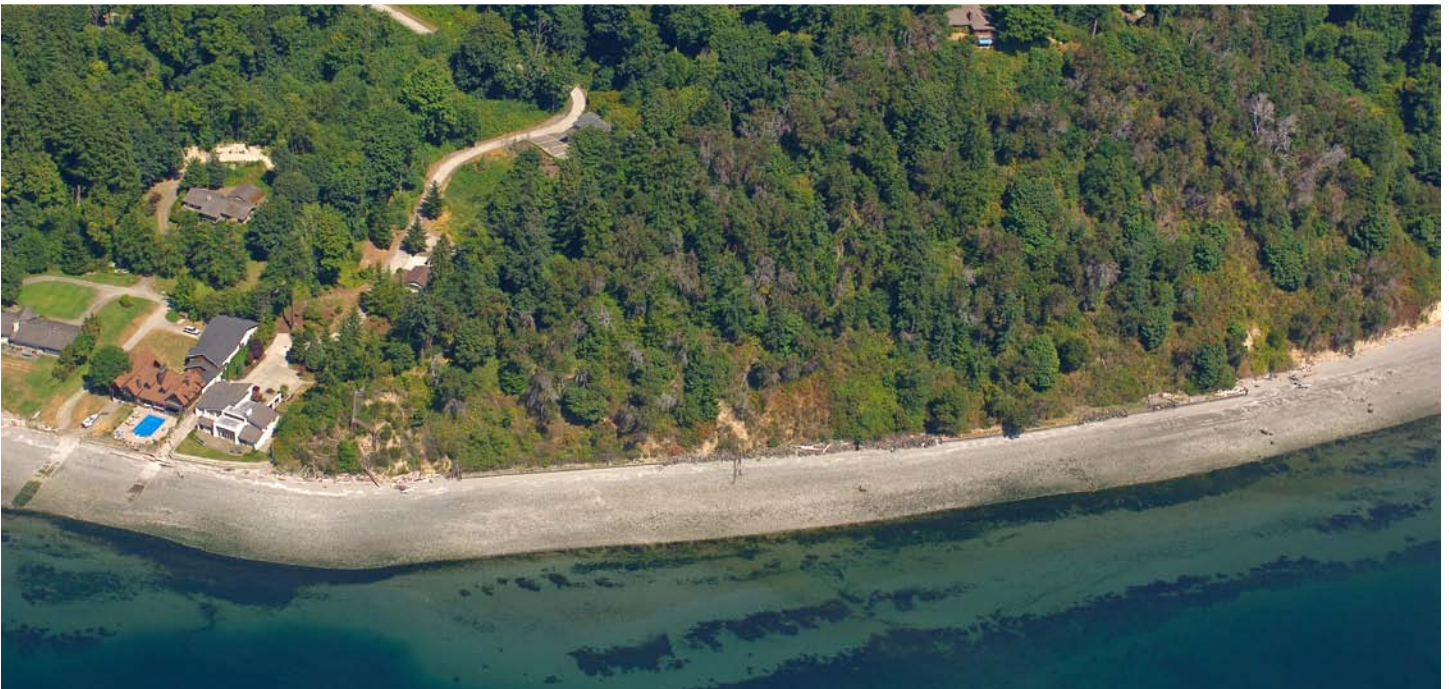


IMAGE: Washington State Department of Ecology (2006)

Processes Restored

- Movement of sand and gravel along shorelines.
- Movement of sand and gravel from bluffs to beaches.
- Natural erosion and accretion of beaches.
- Accumulation and retention of organic material from plants and aquatic animals.
- Natural exposure to wind and wave action.

Conditions Improved

- Restored sand and gravel beaches that serve as spawning grounds for forage fish (e.g., surf smelt and Pacific sand lance), which are a key element of the marine food chain.
- Re-established intertidal and shallow subtidal areas to encourage the growth of kelp and eelgrass, increasing nearshore productivity for fish, birds and other marine species.
- Improved resiliency of the shoreline to respond to changes in the environment such as rising sea levels and increasing frequency of storm events.



SOURCE: ESA (2011); USDA-NAIP (2002)

Image above depicts major project features. See design report for additional details.

Key Design Elements

The restoration would involve acquisition of some parcels abutting the shoreline and removal of 660 linear feet of shoreline armoring. The armoring is composed of bulkheads and rock revetment. The restoration would not include acquisition of the residential property at the top of the bluff and thus some shore armor would need to be retained to protect the existing house. Return walls would be constructed at the ends of the remaining bulkhead. Following armor removal, the upper beach would be exposed to wave energy allowing the toe of the bluff to erode naturally. Using mechanized equipment, portions of the beach would be regraded to create a more natural beach profile.

Site Summary Statistics

- Area of Restored Process: 6 acres
- Total Project Cost: \$3 million

For more detailed information regarding this conceptual design, please visit our website at www.pugetsoundnearshore.org/cdr.html.