Monitoring plan was also developed.

Fish presence and abundance and gravels and sand.

Gravels and sand were being amplified and removing fine sediments.

High energy beach. The wave energy, accumulation of finer sediment on the beach and marsh areas (caused from wave reflection), and the simplification and deepening of the topography in the pocket estuary was due to the riprap along the shoreline.

Hardshore armor was placed along the beach in the 1980's to support commercial development at the tip of the spit.

Ala Spit was purchased by Island County in 1999 and became a public park. The initial intent was to restore the spit back to a natural state.

Spawning.

Salmon.

Fish are prey for ESA-listed species. Forage fish spawning areas. Forage fish are prey for ESA-listed salmon.

'Spocket estuaries' for refugia that were threatened to wash out, was threatened to wash out, was threatened to wash out, was threatened to wash out.

3. The habitat on the leeward side of the spit was changing in a way to be less useful for juvenile salmon that use these

OBJECTIVE: To remove armor and restore nearshore drift processes. To nourish the neck of the spit to maintain access to the tip of the spit.

The riprap was preventing access to the tip of the spit.

During the fall of 2011, 430 ft of riprap was removed.

2014-2015

Objective: To remove the bulkhead wall and groin in order to restore nearshore drift processes. To nourish the neck of the spit to maintain access to the tip of the spit.

Removed 400 ft of cement bulkhead wall.

Repurposed the rock from groin to protect slope in front of private residence and as wave dampening off shore.

Placed 6600 tons of cobble and gravel on neck of spit, which was resloped.

“Park closed” signs on main highway, 10 miles from site.

Immediate homeowners contacted with letters.

Press release ahead of construction.

Public meeting after design completed

Public meeting held during design phase. Design altered to be responsive to concerns heard.

“Park closed” signs on main highway, 10 miles from site.

Phoned fishing supply stores within 80 miles.

Flies to all sporting stores within 40 miles.

Contacted fly-fishing clubs.

Ground breaking with public officials.

Background

A monitoring plan was also developed.

Fish presence and abundance and intertidal topography were assessed. A monitoring plan was also developed.

OBJECTIVE: To assess feasibility of habitat restoration through reconnection of nearshore drift cell processes.

Removal of the riprap was proposed.

The riprap was preventing accumulation of finer sediment on the high energy beach. The wave energy, rather than being dissipated, was being amplified and removing fine gravels and sand.

Fish presence and abundance and intertidal topography were assessed. A monitoring plan was also developed.

Problem Statement

1. The trail on the neck of the spit was becoming narrow and was threatened to wash out, preventing access to the tip of the spit.

2. Beach on high energy side of spit was becoming more coarse and reducing forage fish spawning areas. Forage fish are prey for ESA-listed salmon.

3. The habitat on the leeward side of the spit was changing in a way to be less useful for juvenile salmon that use these pocket estuaries for refugia and feeding.

The primary reason for the loss of sediment on the upper beach and marsh areas (caused from wave reflection), and the simplification and deepening of the topography in the pocket estuary was due to the riprap along the shoreline.

It was a huge lagoon, seen through a 5-year-old’s eyes, and the raft was something to behold! My dad also found a long driftwood pole and used that to push us around just off the beach. But as I outgrew that my new challenge when we’d visit gramma was to walk the length of the spit from end to the other on driftwood, never having a foot touch the ground. And of course MY children grew up with the same challenge.” –Chris Troxel

“Winter Storms

November 2011

Shortly after the riprap was removed, but before the beach had settled, storms during king tides washed away much of the driftwood and unconsolidated sand and gravel along the neck.

The neck eroded downward and was over-washed by high tides with greater frequency. Park access was compromised.

Adaptive management was implemented.

Phase 1

2009-2008

Objective: To assess feasibility of habitat restoration through reconnection of nearshore drift cell processes.

Phase 2

2009-2011

Objective: To remove armor and restore nearshore drift processes.

During the fall of 2011, 430 ft of riprap was removed from the neck of the spit.

Beach was nourished with “fish mix” - sand & gravel required for forage fish spawning.

The access area from the parking lot was restored and made more accessible.

Interpretive signs were installed.

Wood was replaced on the beach face. Driftwood provides natural sediment retention function.

Phase 3

2012-2013

Objective: To assess why the neck is eroding under current conditions and determine how to support the nearshore drift processes.

The bulkhead to the south of the spit, and large rock groin that was diverting sediment were proposed to be removed. Sediment in specific size classes were to be used to rebuild the neck to +14 ft MHHW.

Phase 4

2014-2015

Objective: To remove the bulkhead wall and groin in order to restore nearshore drift processes. To nourish the neck of the spit to maintain access to the tip of the spit.

Removed 400 ft of cement bulkhead wall.

Repurposed the rock from groin to protect slope in front of private residence and as wave dampening off shore.

Placed 6600 tons of cobble and gravel on neck of spit, which was resloped.

Outreach Lessons Learned

Phase 1 & 2

Notecards mailed.

Public meeting after design completed

Open house held on site

Press release

Phase 3 & 4

Notecards mailed.

Public meeting held during design phase. Design altered to be responsive to concerns heard.

Open house held on site

Press release ahead of construction

Immediate homeowners contacted with letters.

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