



# Lowman Beach Shoreline Restoration

Public Meeting 02.28.2019



**Seattle**  
Parks & Recreation



Photo ESA: December 27, 2018

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## Purpose of the Meeting

1. Provide an Update on the Lowman Beach Park Plans.
2. Explain the Process of the Design and Plans.
3. Answer Questions from the Community.

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## Outline

1. Purpose of the Meeting
2. Summary of the Project History
3. Design Alternatives Evaluated
4. Factors that Influence the Design
5. Proposed Design
6. Benefits
7. Q&A

## Summary of the Project History

### Project History

- Tennis court constructed by WPA in 1930's along with seawall
- Original seawall replaced in the 1950s
- Southern end of the seawall removed in 1995 and replace with a gravel beach and retaining wall
- North section of the remaining 1950's wall start to fail early 2015.



Photo-ESA: December 27, 2018



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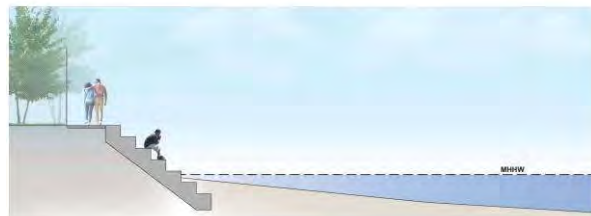
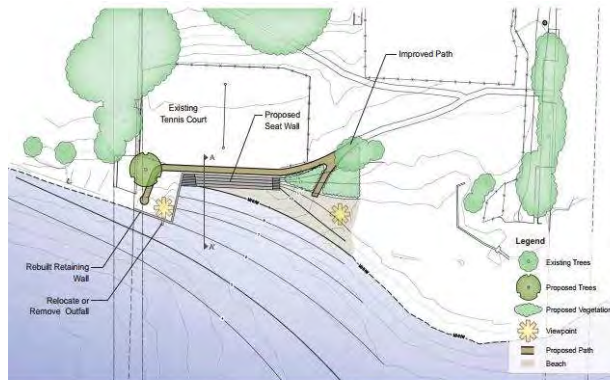
## Summary of the Project History

### Next Steps

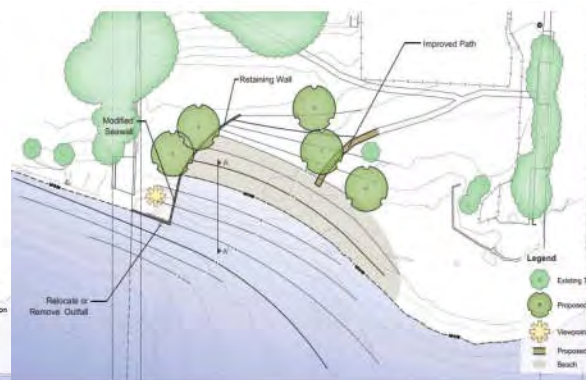
1. 30% Design Complete
2. Coastal Process Evaluation of the New Design.
3. Take Into account feedback on the Park design.
4. Move towards a 60% Design.

# Design Alternatives Evaluated

## Alternative 1



## Alternative 2



## Alternative 3



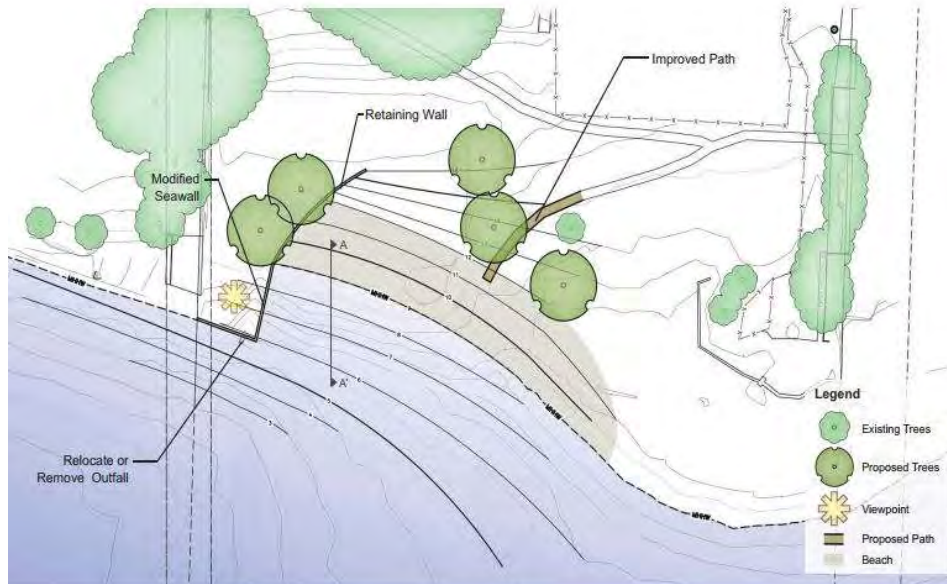
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## Factors That Influence the Design

1. Park Experience
2. Habitat
3. Sustainability
4. Coastal Processes
5. Aesthetics
6. Recreation
7. Permittability
8. Cost and Feasibility

# Design Alternatives Evaluated

## Alternative 2



DRAFT Lowman  
Beach Alternative 2  
Modify Seawall



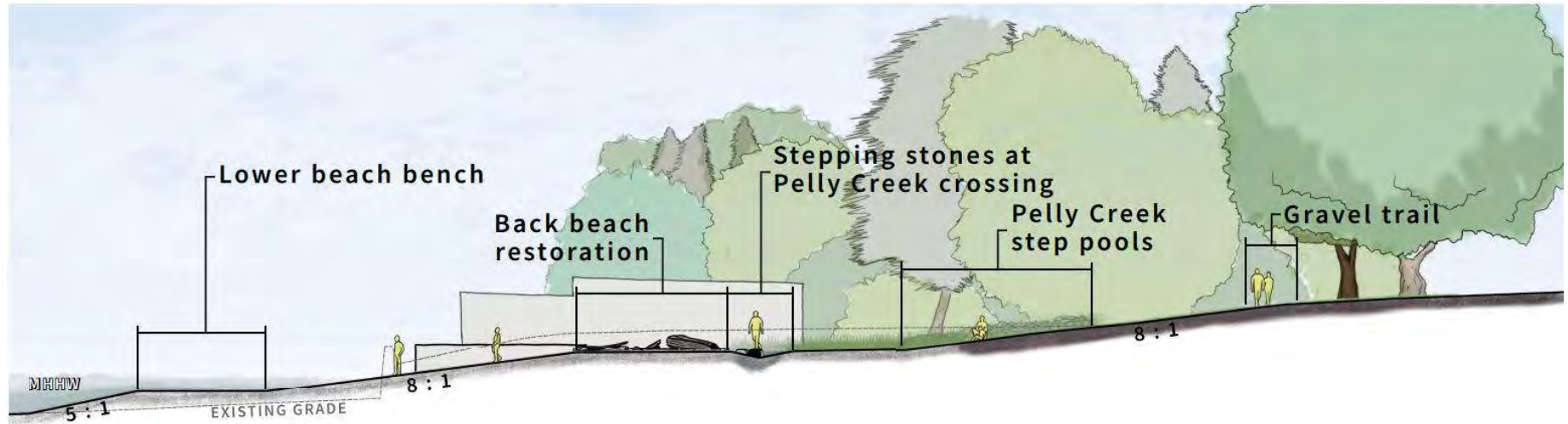
# Proposed Design - 30% Design Plans



Illustrative Plan

Scale: 1" = 10'

# Proposed Design - 30% Design Plans



**Section A - A'**

Scale: 1" = 10'

# Proposed Design - 30% Design Plans



**Perspective 1 - Beach View - Looking South**

## Proposed Design - 30% Design Plans



Perspective 2 - Pelly Creek View - Looking East

# Project Benefits

## Natural Shoreline



## Habitat



## Park Experience



# Shore Protection Design

Shoreline  
Hardening

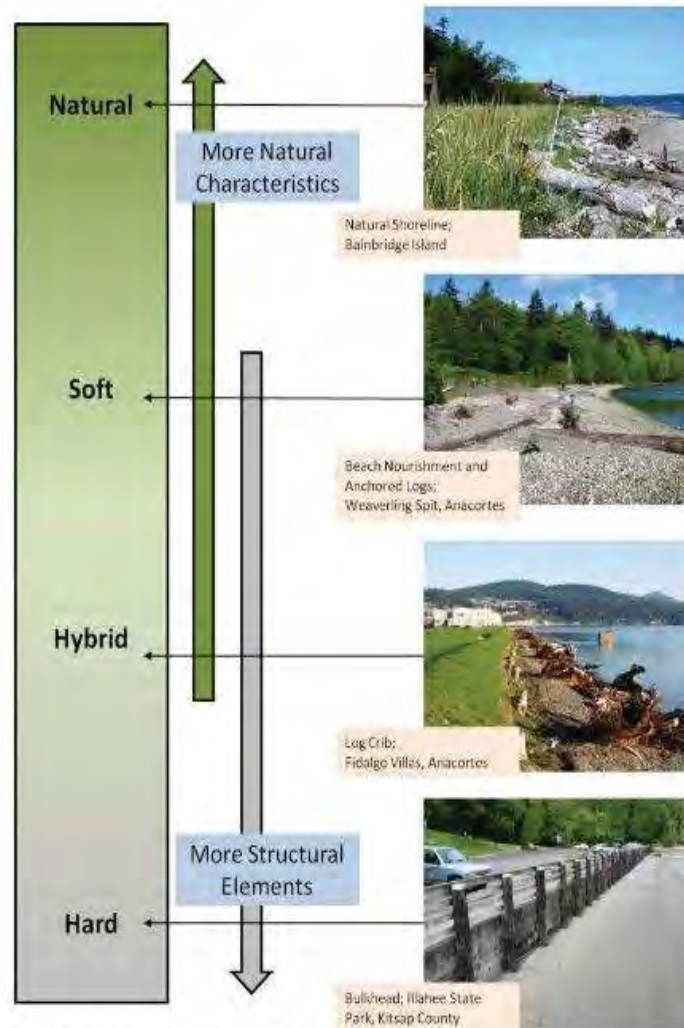
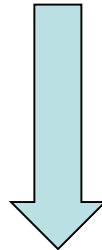


Figure 1: Shoreline stabilization continuum (Hugh Shipman photos.)

# Shoreline Hardening



## Pros

- “Holds the line”
- Protects homes, roads, utilities in place... for a while
- Technically feasible and permit-able

## Cons

- Beach loss over time
- Higher impacts, changed shore type
- Future costs to adjust to sea level rise
- Potential catastrophic failure

# Armoring can fail



Photo Seattle Times: Beach Drive, December 17, 2012



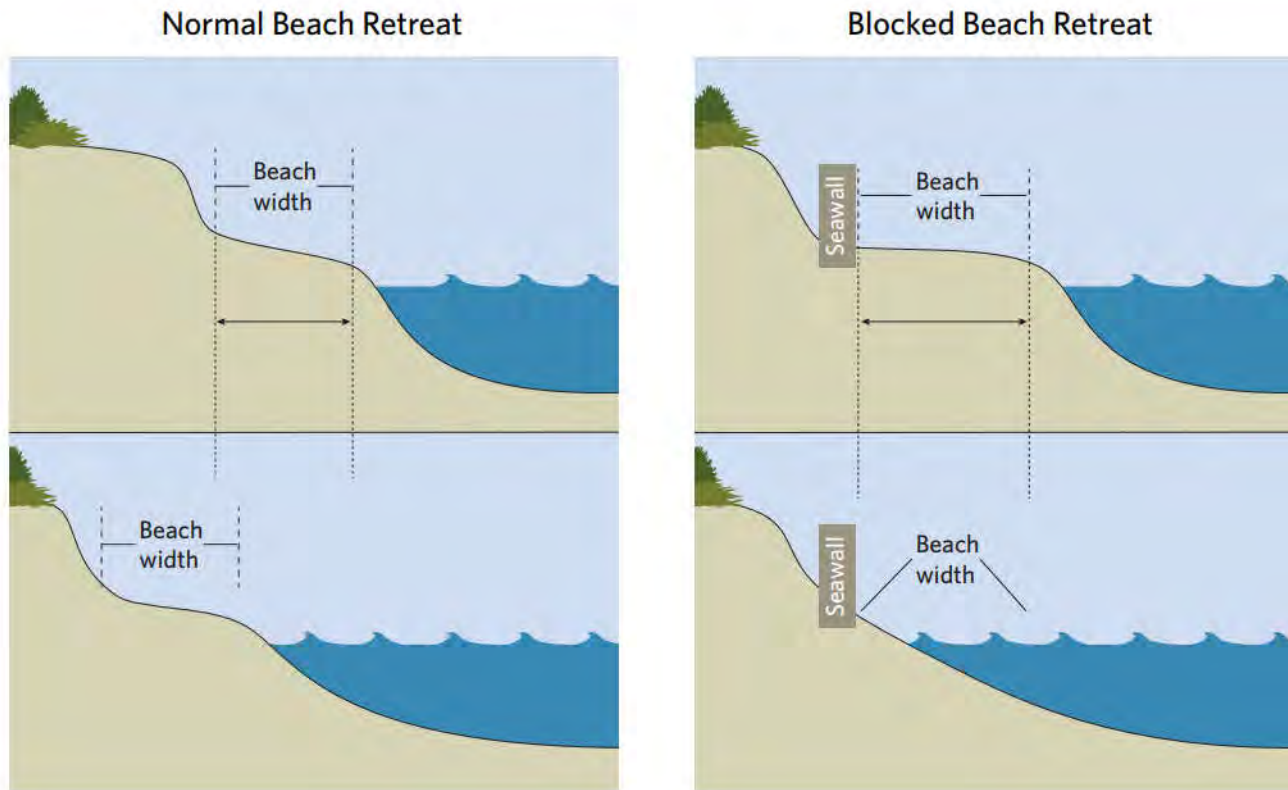
Photo ESA: Pacifica, Bob Battalio



Photo ESA: December 27, 2018



# Natural Shorelines vs Seawalls



◀ **Figure 1:** Diagram showing how armoring prevents beach migration and will result in the total loss of beach over time (Source: Melius and Caldwell 2015).

# Habitat Benefits through Restoration

- Bulkhead is built on upper beach
- Removing bulkhead will restore the high intertidal zone portion of the beach
- Daylighted creek can produce prey for juvenile salmon and potentially habitat



## Benefits Many Species



Chinook salmon juveniles



Forage Fish

top - Pacific Sandlance

bottom – Surf Smelt

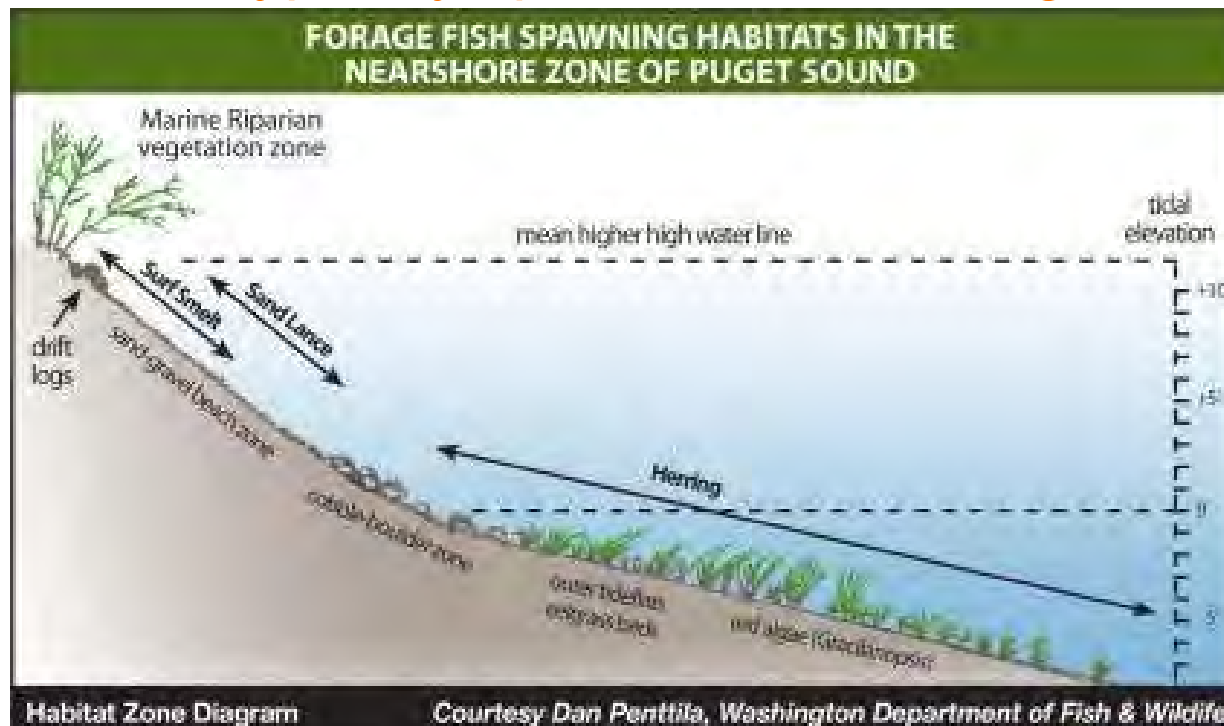
## Juvenile Chinook salmon

- Among most dependent on estuaries and marine nearshore
- Tend to stay close to shoreline during early marine stage
- Use shoreline areas for foraging, refuge from predators, and migratory corridors
- Feed on amphipods, copepods, terrestrial-origin insects



## Forage Fish

- **Intertidal spawning by surf smelt and sand lance**
  - Mid to upper intertidal
  - Sand lance typically spawn in sand
  - Surf smelt typically spawn in sand and gravel

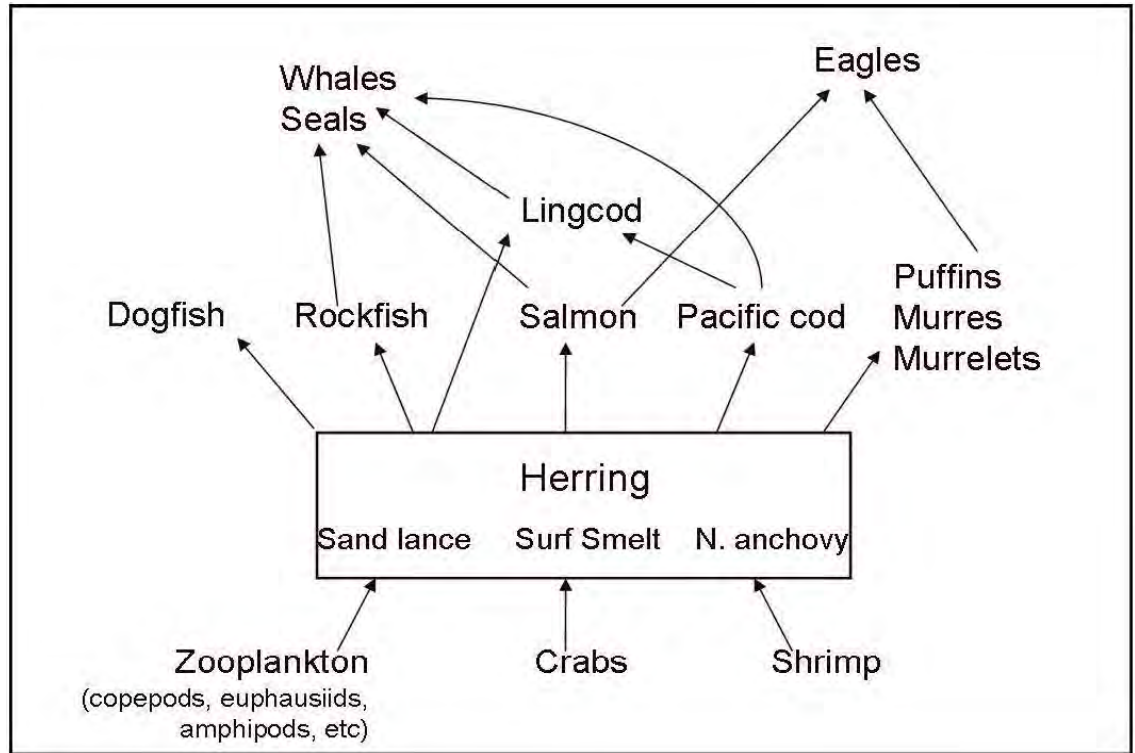


# Forage Fish

- Sand lance



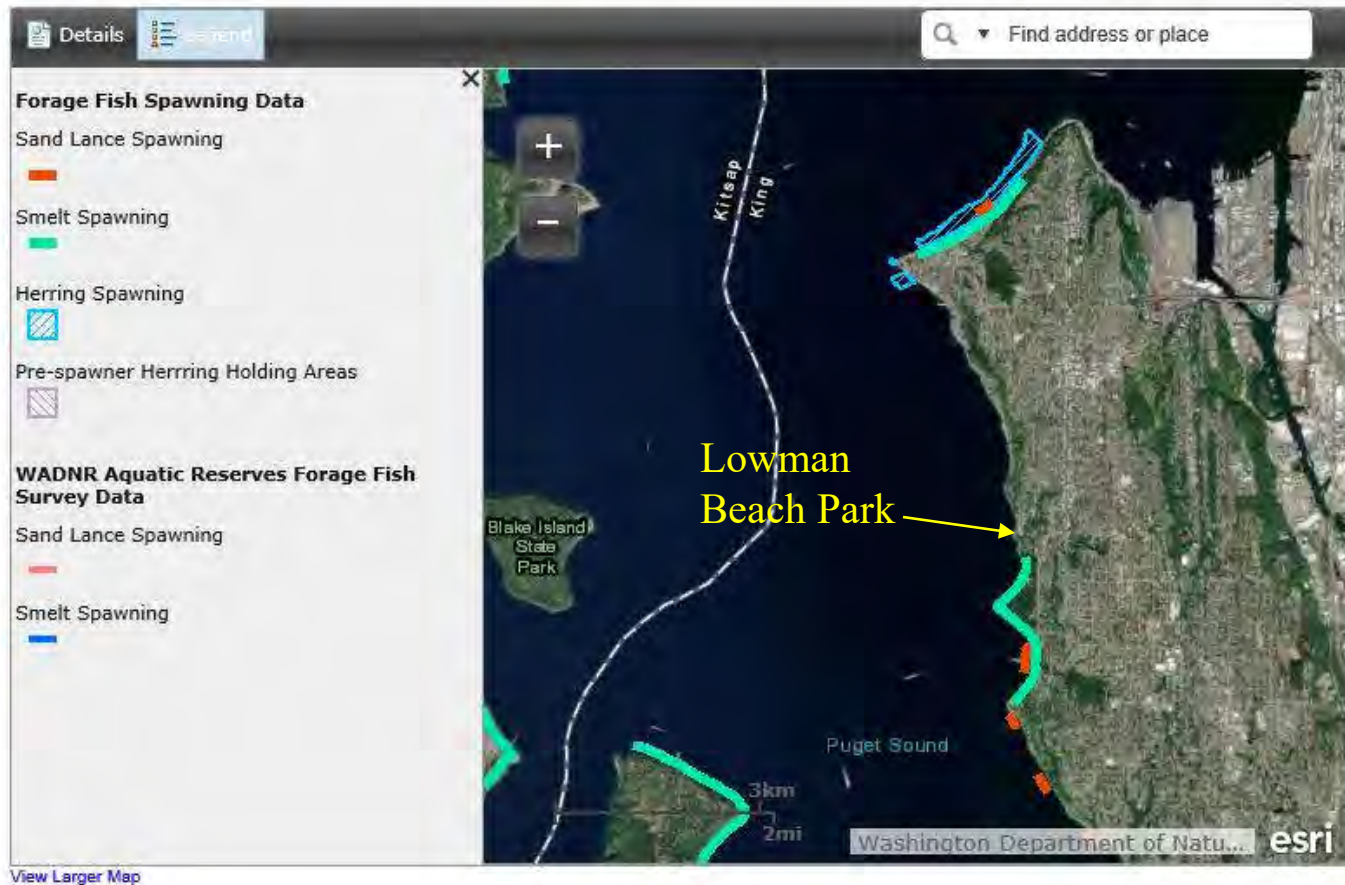
- Surf smelt



# Forage Fish Documented Spawning Locations

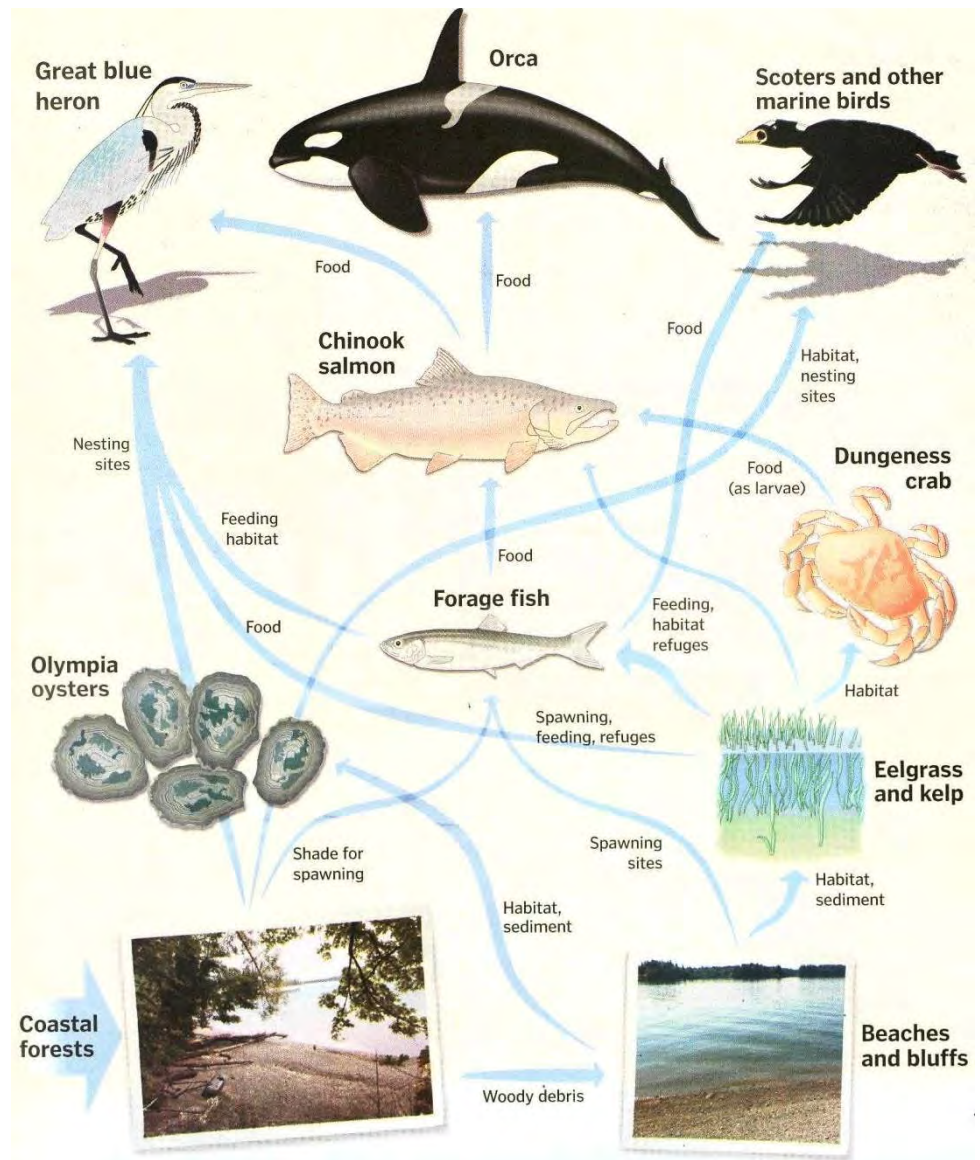
## Spawning Location Map NEW!

The map below shows the documented spawning locations of Pacific Sand Lance, Surf Smelt, and Pacific Herring in Washington State. This map should not be considered all inclusive of spawning habitat because not all potential spawning habitat has been surveyed, and it is possible for surveys to fail to detect eggs even when eggs are present.



- **WDFW data** ([http://wdfw.wa.gov/conservation/research/projects/marine\\_beach\\_spawning/](http://wdfw.wa.gov/conservation/research/projects/marine_beach_spawning/))

# It's All Connected!



Source: *The Daily Olympian*



# Park Benefits



Illustrative Plan

Scale: 1" = 10'

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# Q&A

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