



Clallam County Shoreline Master Program (SMP) Update

Planning
Commission

May 18, 2011



Discussion Topics

- Preliminary findings of shoreline inventory (excluding WRIA 20)
- Potential policy implications
- Feedback from public forums

Note: *Data pertain to the narrow zone along the Strait of Juan De Fuca, large rivers and Lake Sutherland that is subject to the Shoreline Management Act*

Policy Goals of the Act



Encourage water-dependent & priority uses



Protect natural resources

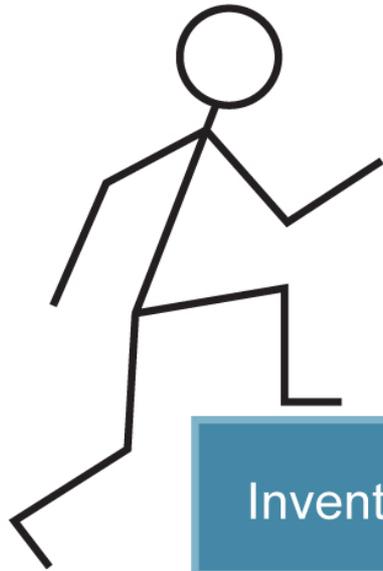


Promote public access

Area Covered by the SMP

placeholder for area stats

Steps to Updating the SMP



Assess
Cumulative Impacts

Draft Policies
and Regulations

Prepare Restoration Plan

Assign Environment Designation

Inventory Shoreline Conditions

Prepare Consistency Review

Develop Community Vision

Components of the Shoreline Inventory

- Overview of ecosystem-wide processes
- Reach-by-reach assessment of:
 - Physical conditions
 - Ecological conditions
 - Land use / human environment
- Preliminary management recommendations

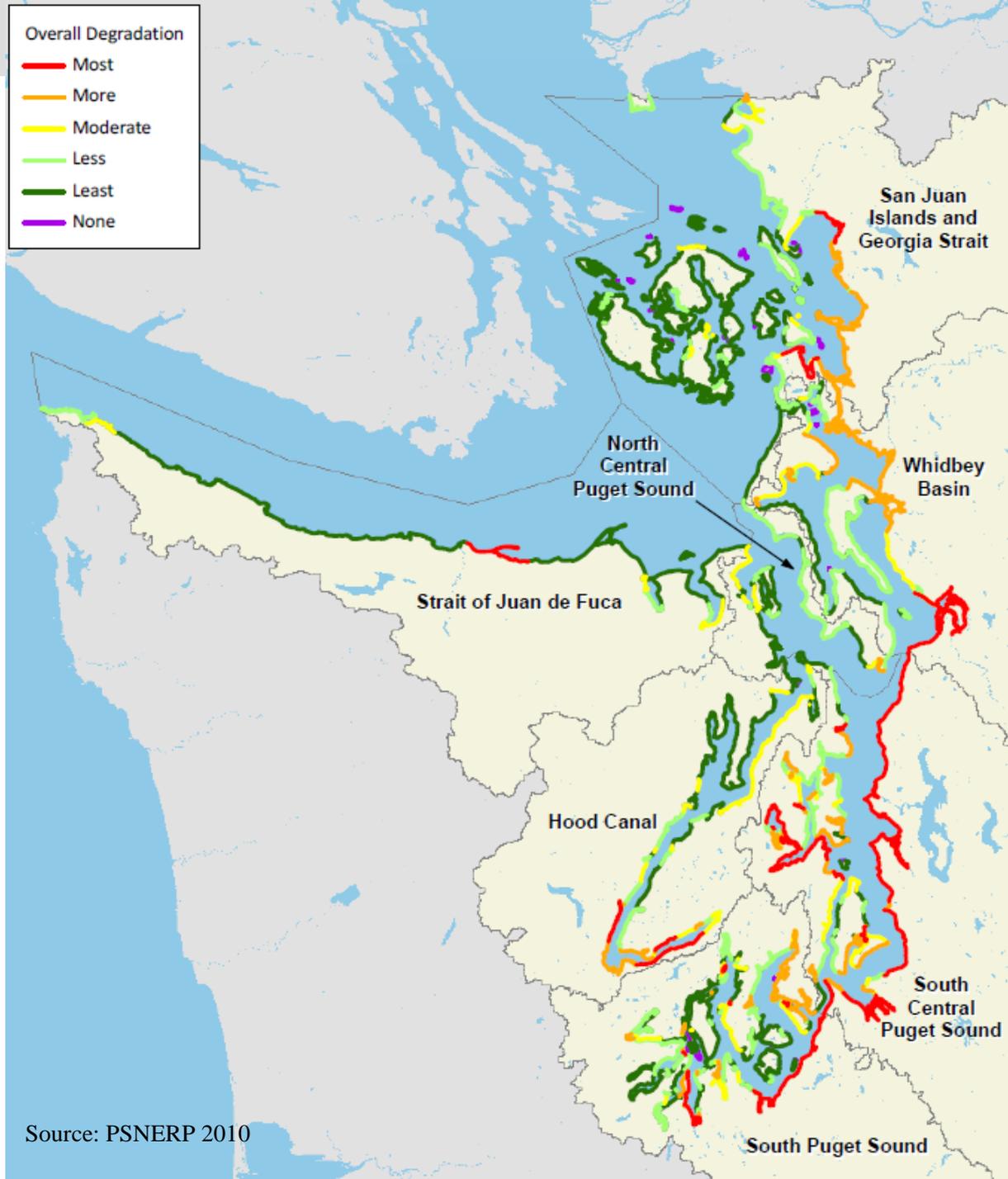
Key Inventory Questions

- How important / sensitive is each reach in terms of ecological conditions?
- How has the reach been affected by past development?
- What level / type of future development is expected?
- How might future development affect ecological conditions?
- What policies / regulations are needed to maintain functions?

Marine Shoreline Overview

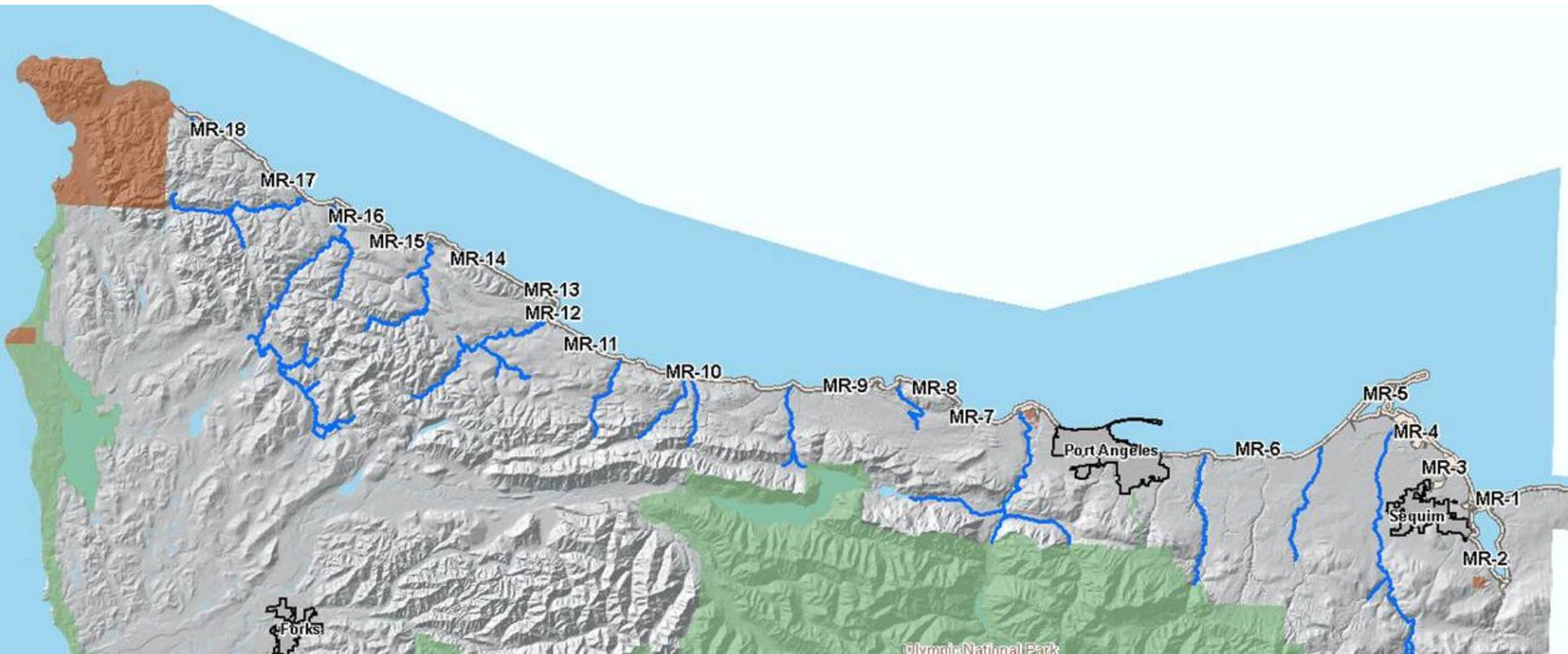
- One-third of shore is classified as “feeder” bluff
- Shore modifications are concentrated in bays which poses threat to sensitive fish and wildlife habitat
- Development on bluffs presents ecological challenges and safety risks
- Maintaining forest cover is essential for ecological and geological stability

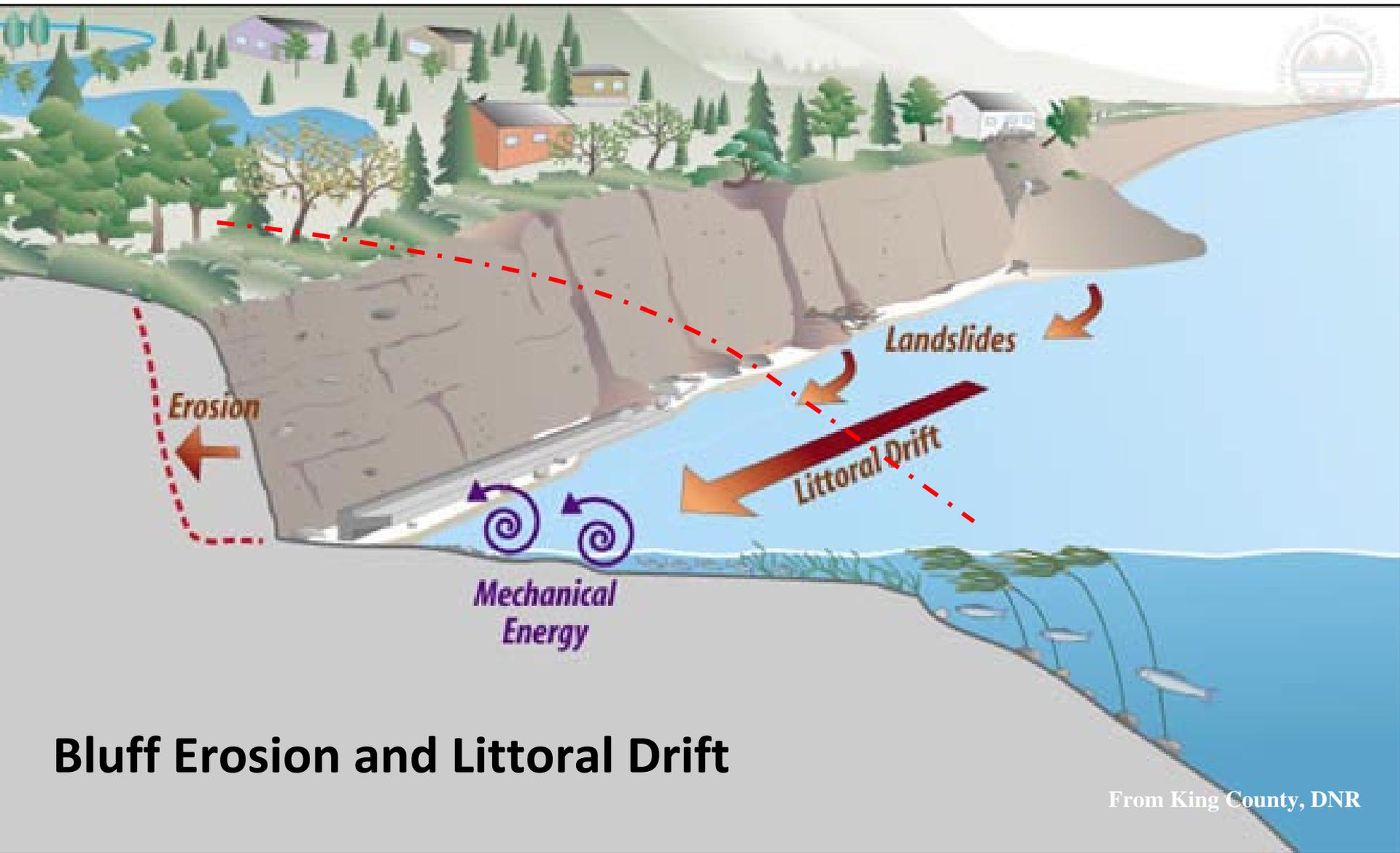
Physical processes in the Strait of Juan de Fuca are less degraded than most of Puget Sound region



Clallam County's Marine Shoreline

- Shore is divided into 18 segments or “reaches”
- Each reach represents a “drift cell”

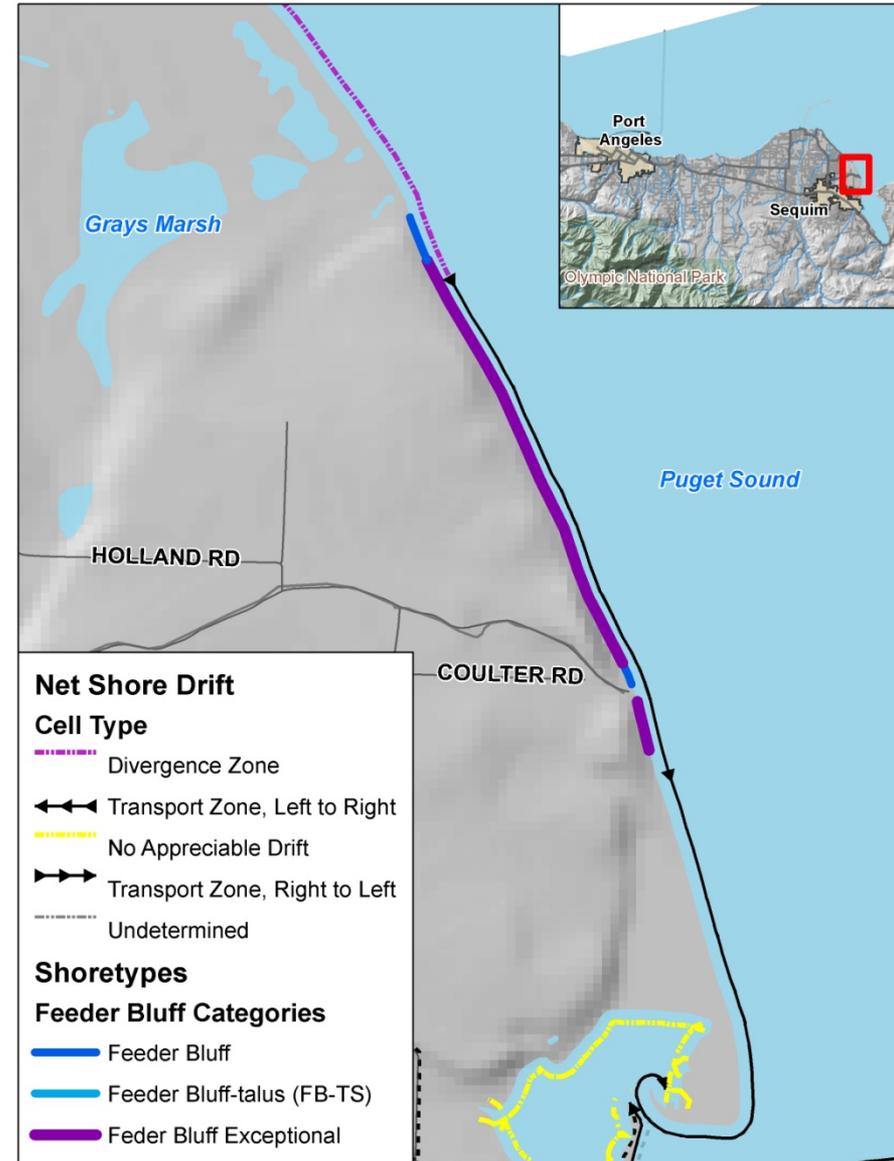
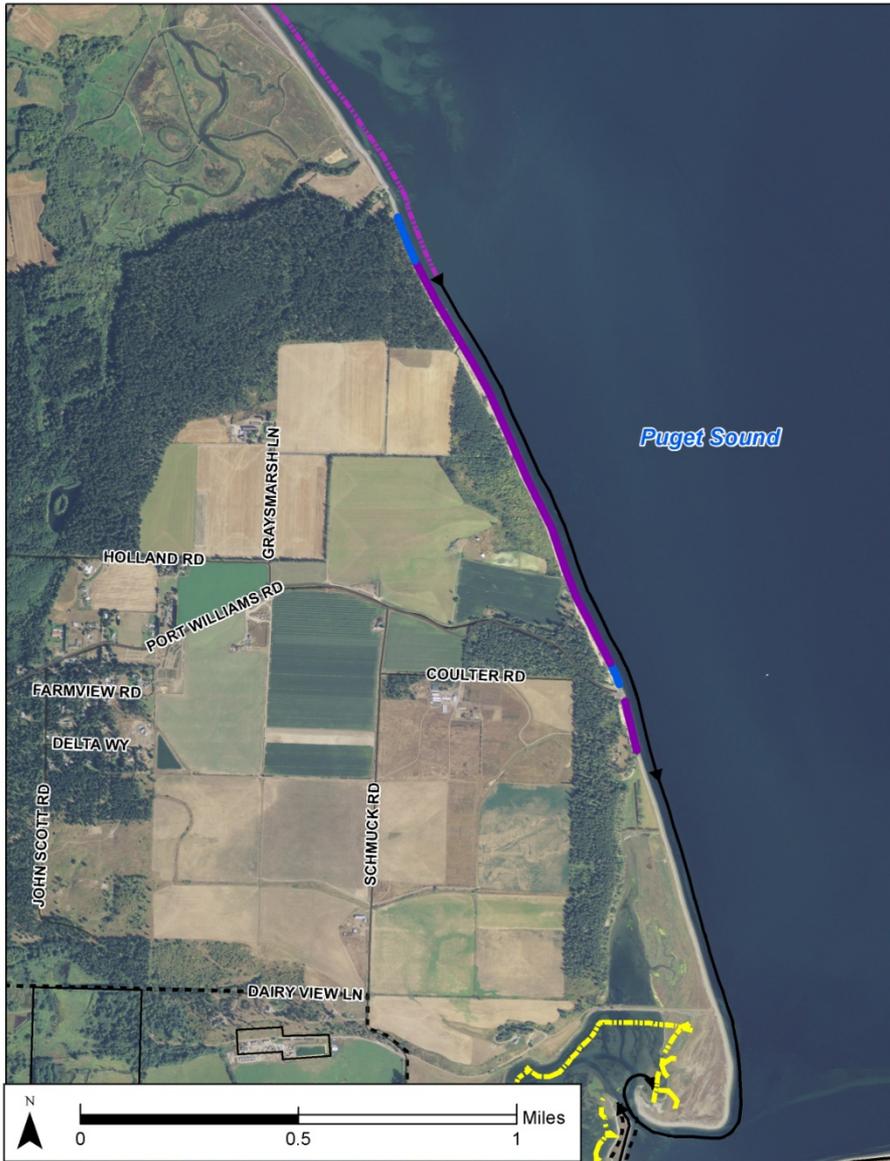




Bluff Erosion and Littoral Drift

% of Marine Shore Length by Type

Marine Shore Type	Percent
Accretion Shoreform	30.5%
Transport Zone	19.2%
No Appreciable Drift	12.7%
Feeder Bluff - exceptional	10.3%
Feeder Bluff	9.2%
Feeder Bluff-talus	8.1%
Modified	10.0%



Feeder Bluffs

Talus – Generally bedrock areas, erosion occurs more slowly; provide beach sediment via landslides



Feeder bluffs – Historic landslide scarps; lack of mature vegetation and intermittent bank toe erosion



Exceptional – Highest volume sediment input per lineal foot; relatively high elevation bluffs with moderate amounts of beach-quality sediment; more common here than other areas of Puget sound

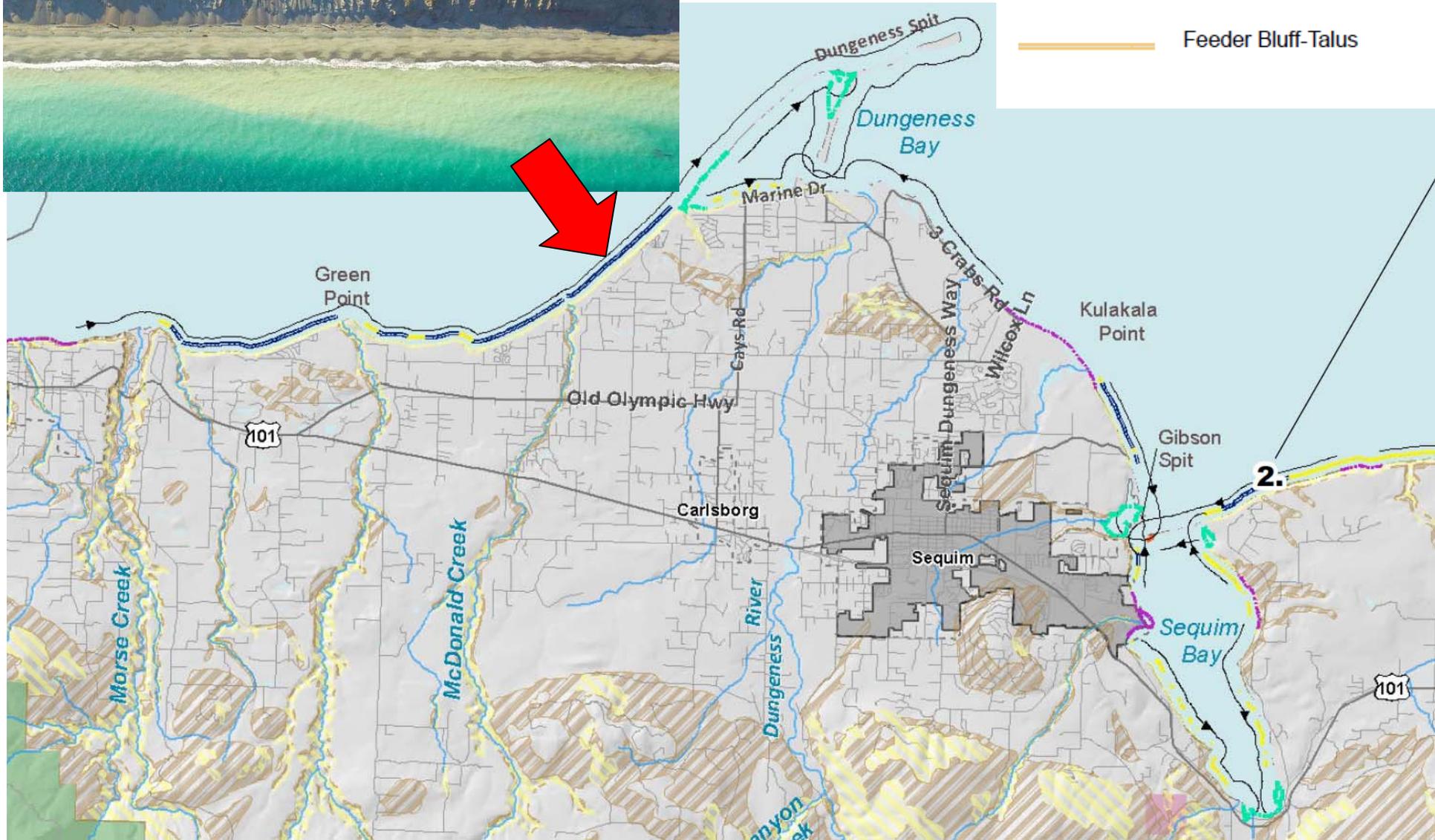


Marine Reach	% Feeder Bluffs		
	Exceptional	Feeder Bluff	FB- Talus
1– Diamond Pt	9	49	0
2 – Sequim Bay	0	29	0
3 – Gibson Spit	28	10	0
4 – Kulakala Pt	0	6	0
5 – Dungeness Spit	0	0	0
6 – Green Pt	63	8	0
7 – Angeles Pt	3	22	1
8 – Observatory Pt	0	0	0
9 – Crescent Bay / Low Pt	0	4	35
10 – Twin Rivers	7	7	68
11 – Deep Creek	0	0	47
12 – Pysht R	0	0	4
13 – Pillar Pt	0	0	63
14 – Slip Pt	0	0	0
15 – Clallam Bay	0	0	0
16 – Sekiu R/Kaydaka	0	0	14
17 – Shipwreck Pt	0	0	0
18 – Rasmussen /Bullman Cr	0	0	0



Shoretype

-  Feeder Bluff Exceptional
-  Feeder Bluff
-  Feeder Bluff-Talus





Geohazards



Erosion Hazard Areas



Landslide Hazard Areas



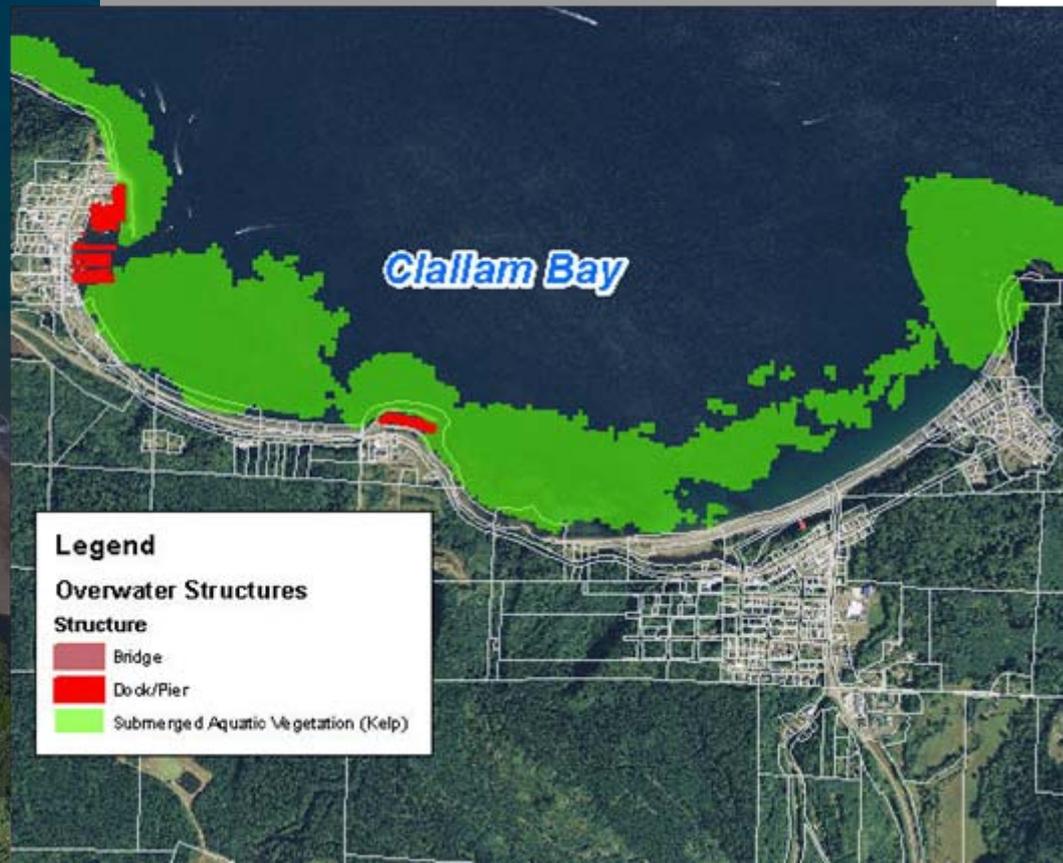
Marine Reach	% Erosion or Landslide Hazard
1– Diamond Pt	62%
2 – Sequim Bay	31%
3 – Gibson Spit	6%
4 – Kulakala Pt	3%
5– Dungeness Spit	7%
6 – Green Pt	66%
7– Angeles Pt	30%
8 – Observatory Pt	79%
9 – Crescent Bay – Low Pt	74%
10 – Twin Rivers	84%
11– Deep Creek	81%
12– Pysht R	29%
13 – Pillar Pt	96%
14 – Slip Pt	97%
15 – Clallam Bay	32%
16 – Sekiu R- Kaydaka	80%
17 – Shipwreck Pt	48%
18 – Rasmussen Bullman Creek	85%

Management Issues - Eroding Bluffs

- Setbacks and buffers – sufficient for the “life of the structure”
- Environment Designations – use them as tool to communicate risks
- Vegetation maintenance – to reduce hazards (& maintain habitat)
- Drainage – use BMPs to maintain slope stability
- Allowances voluntary relocate – make it easy



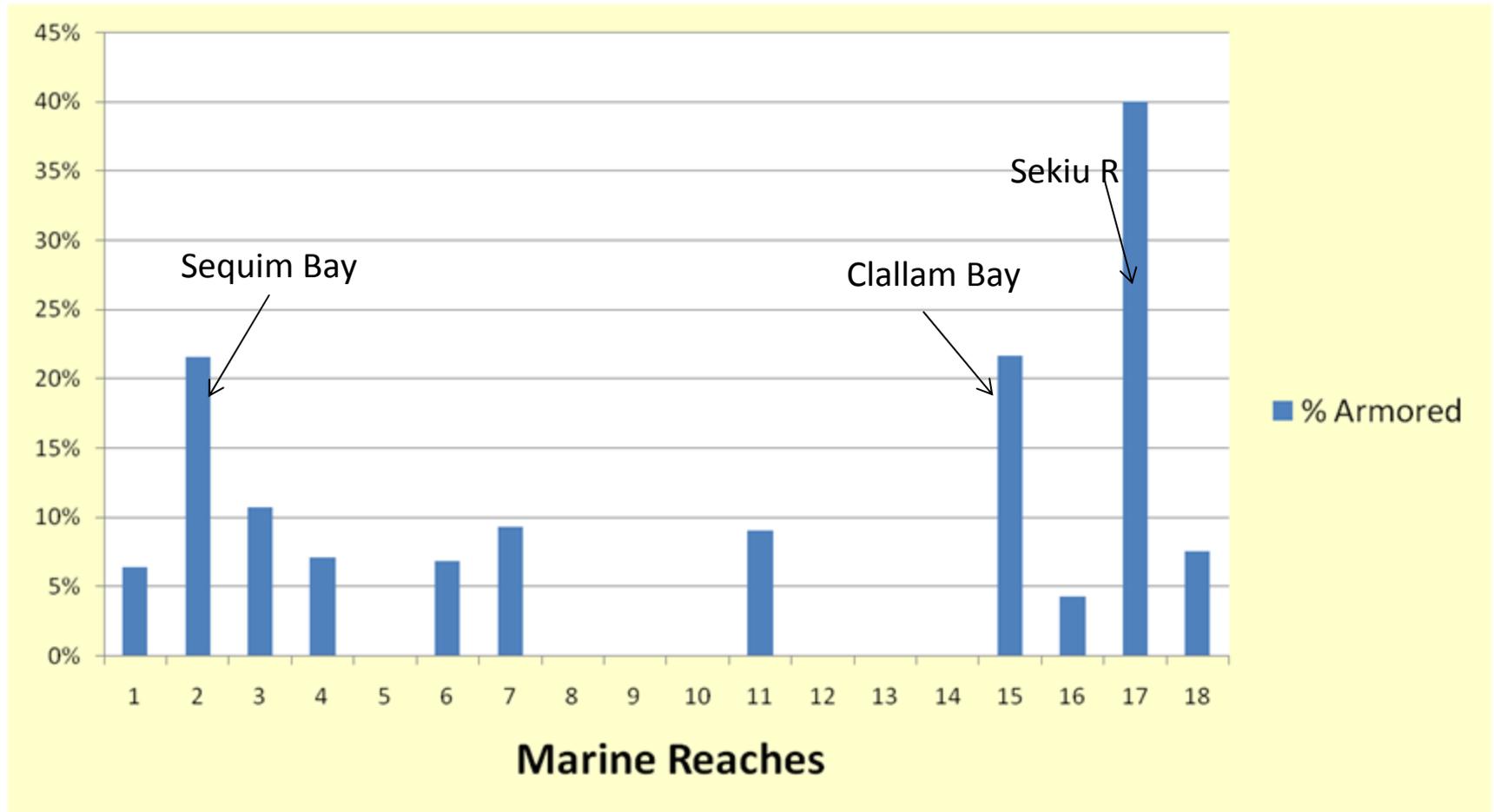
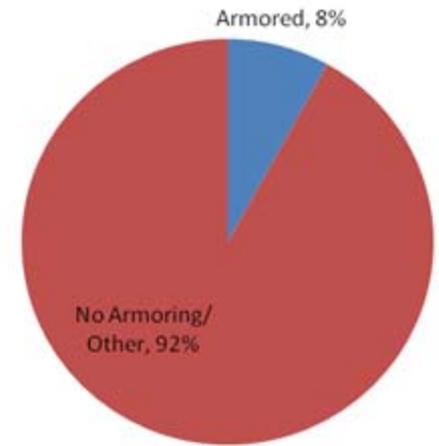
Accretion Beaches



Submerged Aquatic Vegetation (Kelp)

Reach	Acres	Total Area	Percent
18	435.2	546.0	79.7%
16	289.6	453.9	63.8%
7	506.5	833.4	60.8%
17	443.6	737.2	60.2%
15	222.3	390.1	57.0%
14	460.6	808.8	56.9%
13	141.1	261.1	54.0%
10	451.0	859.7	52.5%
8	237.3	524.3	45.3%
9	467.4	1,113.2	42.0%
11	218.5	590.2	37.0%
6	492.3	1,336.4	36.8%
5	233.8	1,622.0	14.4%
1	92.3	1,295.2	7.1%
4	4.5	845.1	0.5%
12	0.8	239.0	0.3%
2	0.0	957.1	0.0%
3	0.0	610.3	0.0%
Grand Total	4,696.8	14,023.4	33.5%

Most of the Shoreline is Not Armored



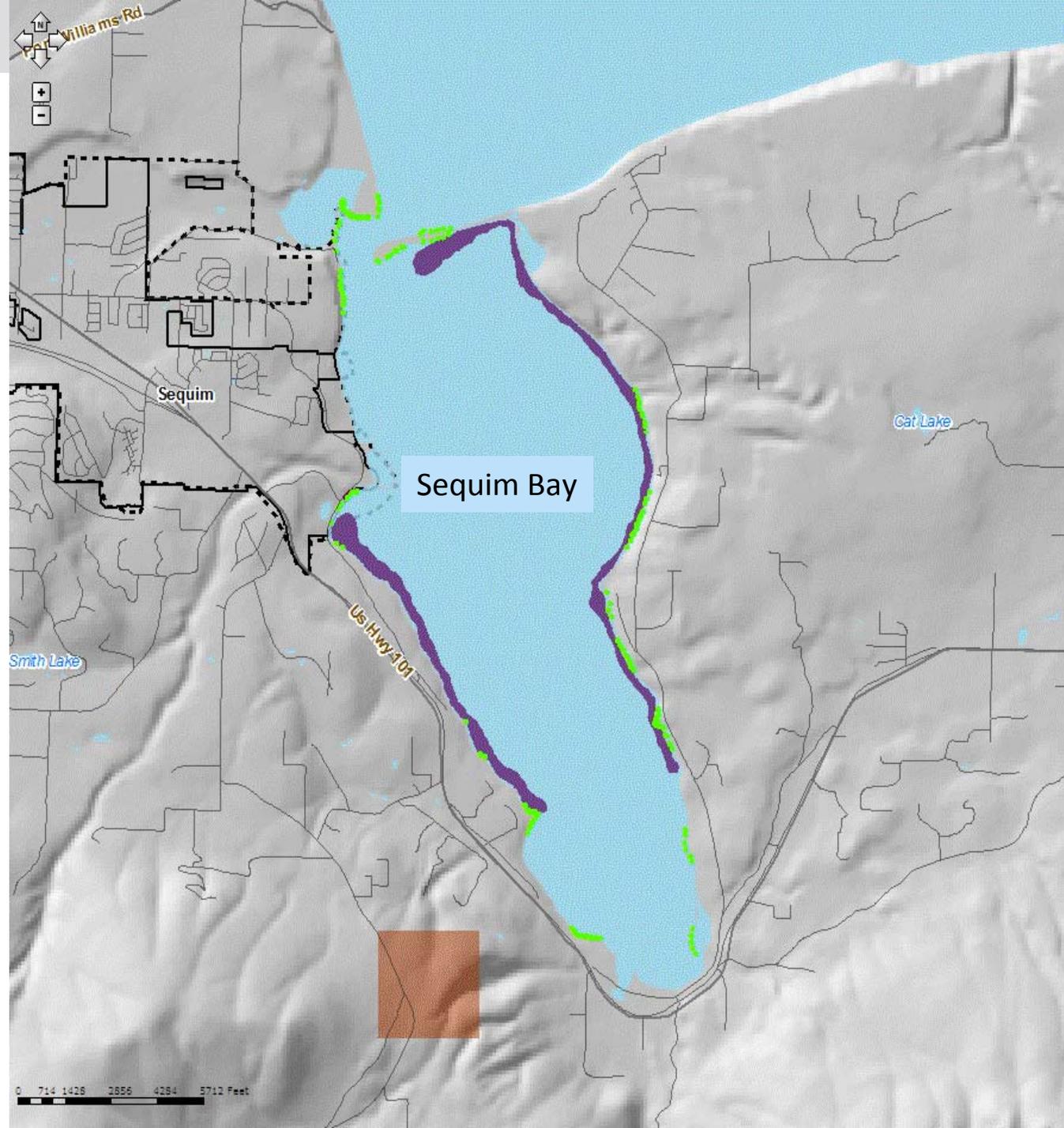


Important Forage Fish Habitats

Herring

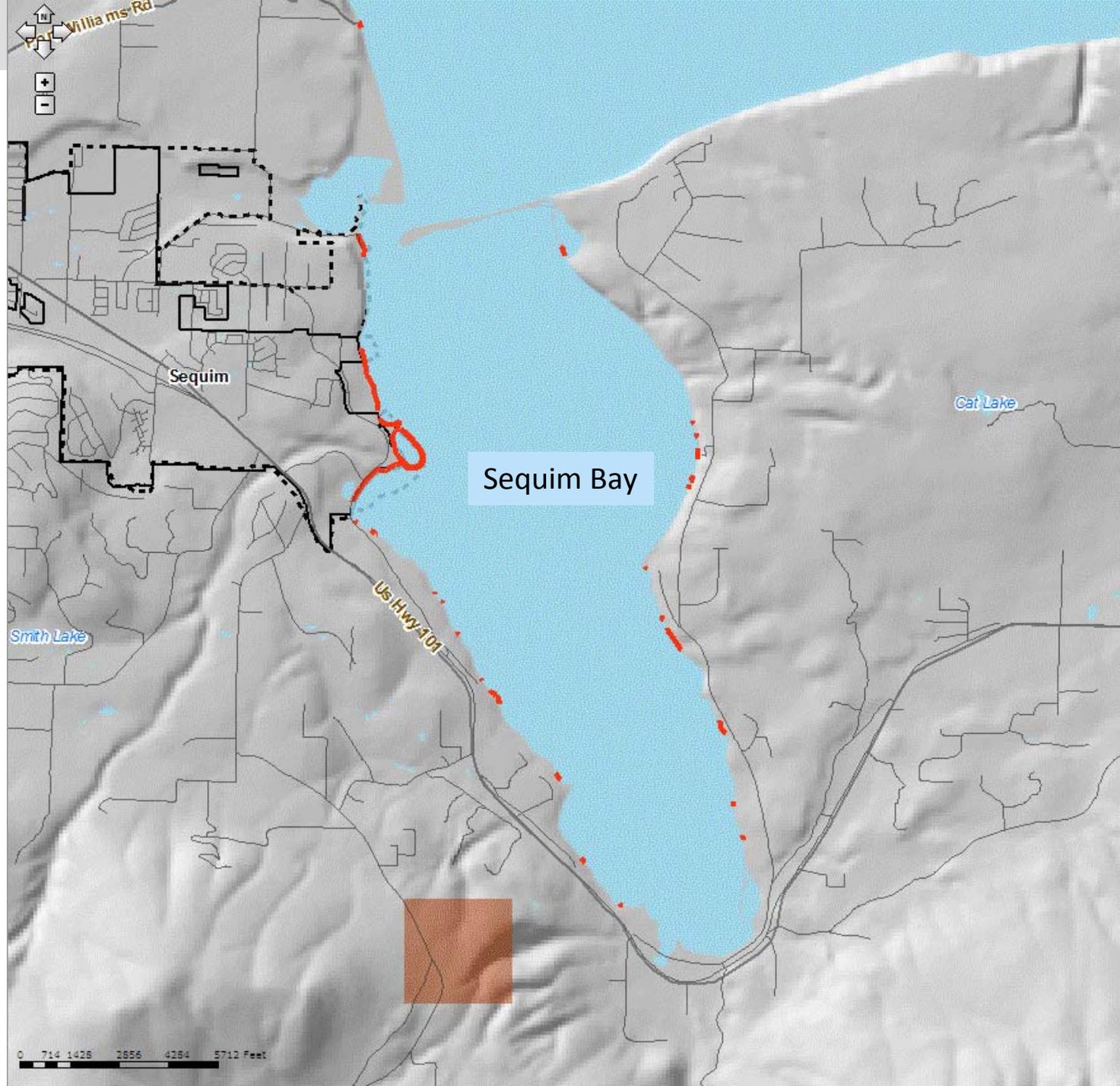


Sand lance





Existing Bulkheads



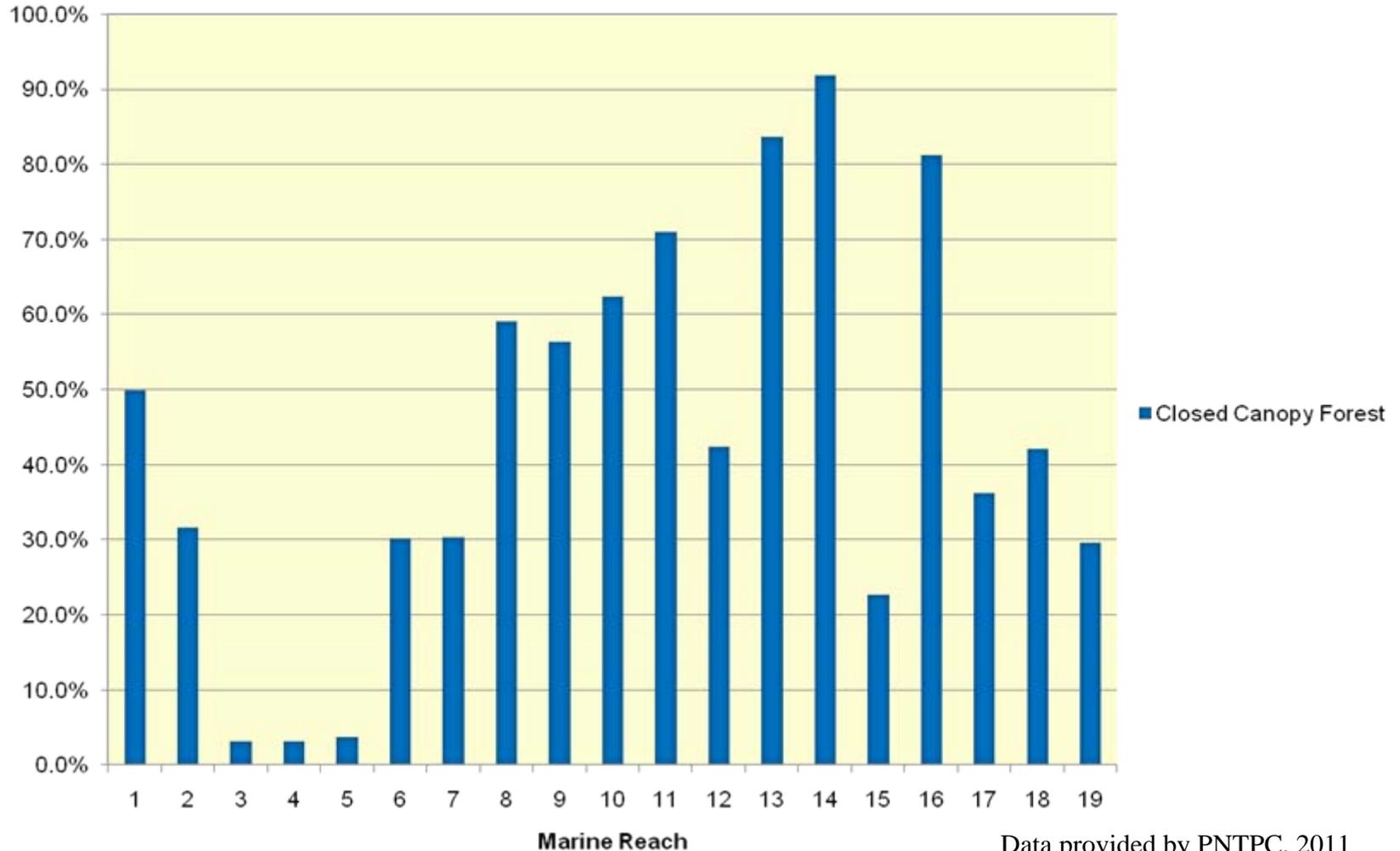


Impacts on forage fish



Marine Shoreline Vegetation

% of closed canopy forest within 300 ft of ordinary high water



Data provided by PNTPC, 2011

Impervious Surface by Reach

Reach	Percent Impervious
1	7%
2	14%
3	2%
4	12%
5	0%
6	10%
7	1%
8	0%
9	2%
10	4%
11	5%
12	0%
13	0%
14	0%
15	28%
16	2%
17	13%
18	13%
Grand Total	6%



Freshwater Shoreline Overview

- Development in floodplains and channel migration areas is key concern
- Different management issues in East and West County
- Lake Sutherland is mostly built out, numerous overwater structures

County's watersheds are ...

- Placeholder for Ecology watershed rating graphic

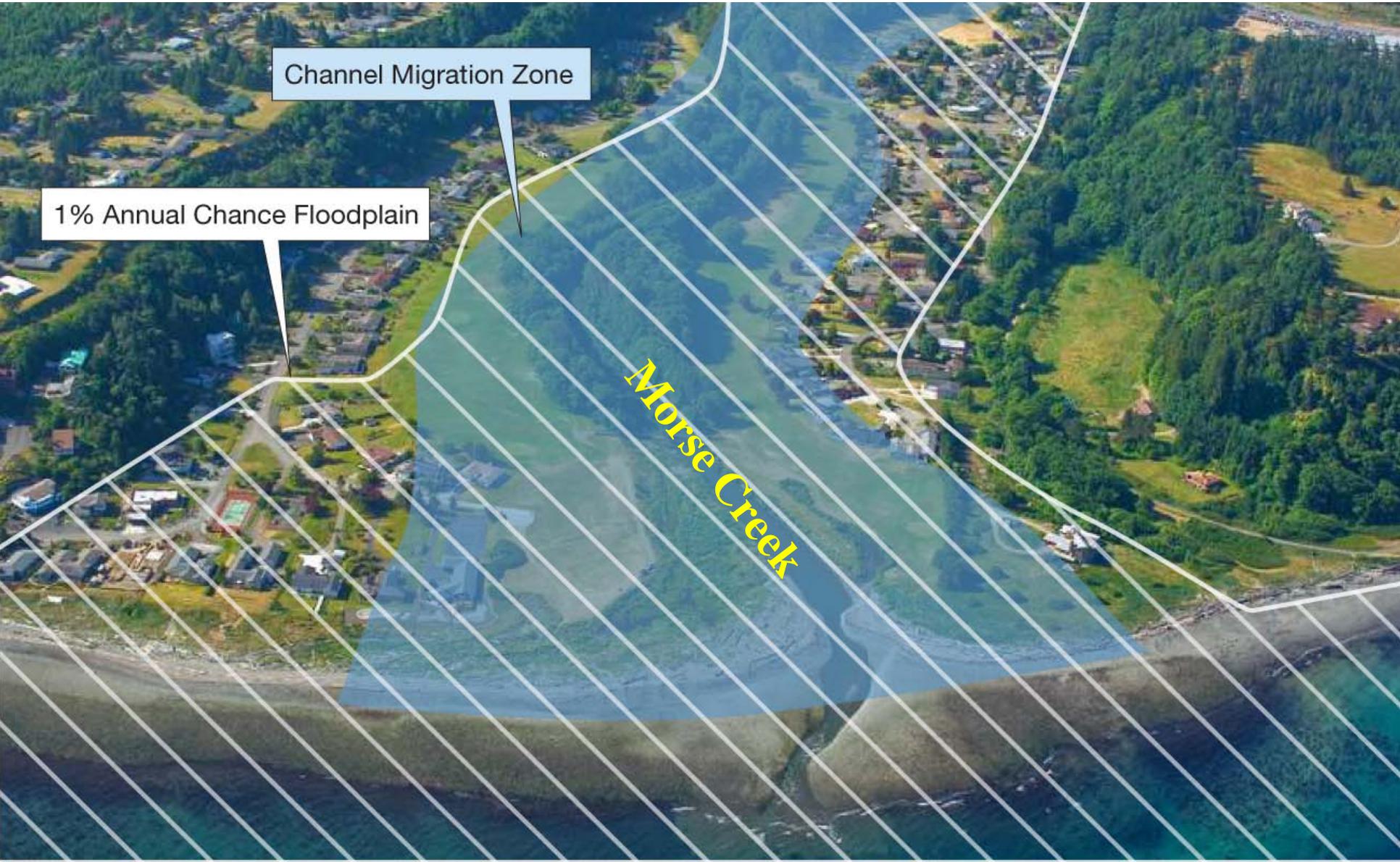


Lake Sutherland





Dungeness R, just downstream of Hwy 101



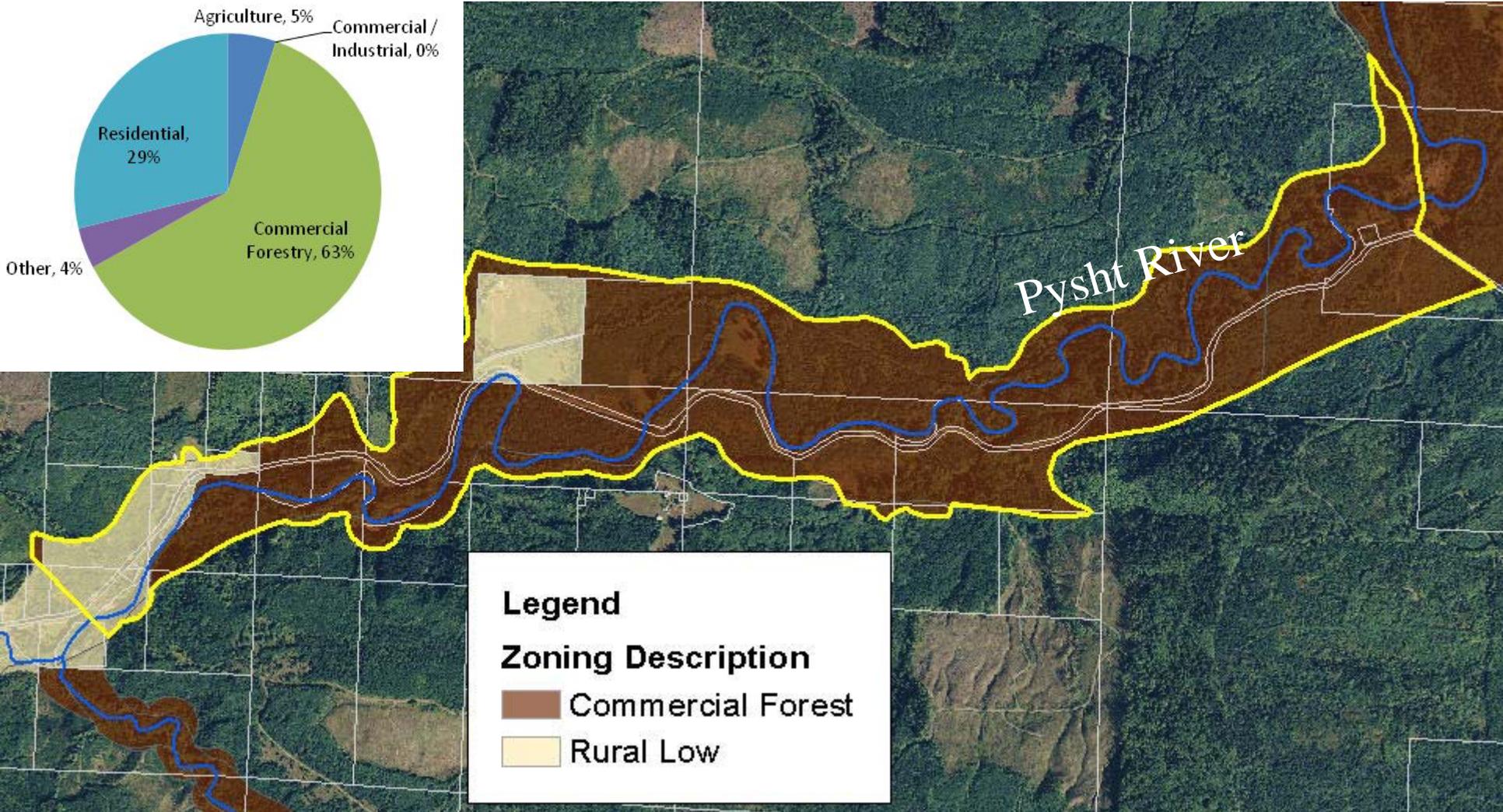
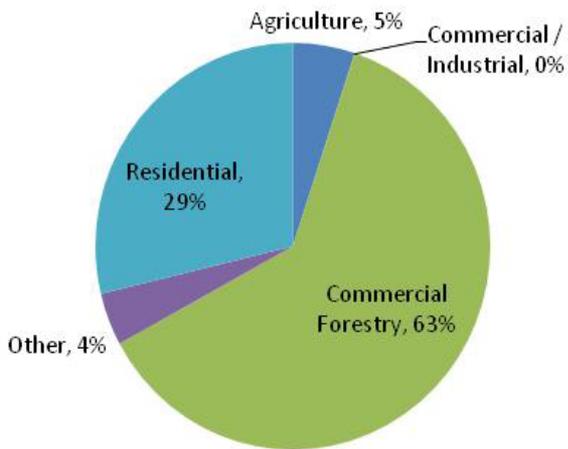
Channel Migration Zone

1% Annual Chance Floodplain

Morse Creek

Land Use Overview

Commercial forestry is dominant land use on rivers in western County

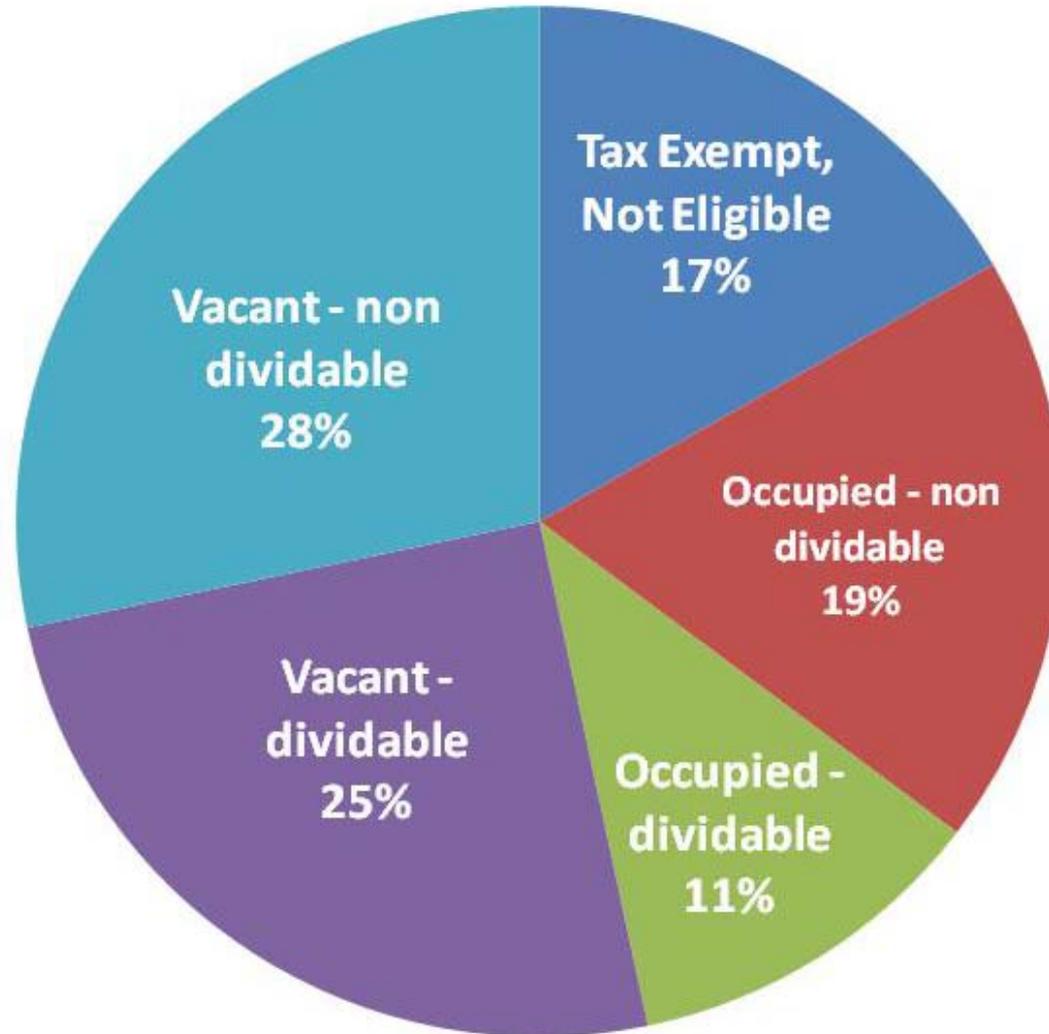


Shoreline Parcels with Water Frontage

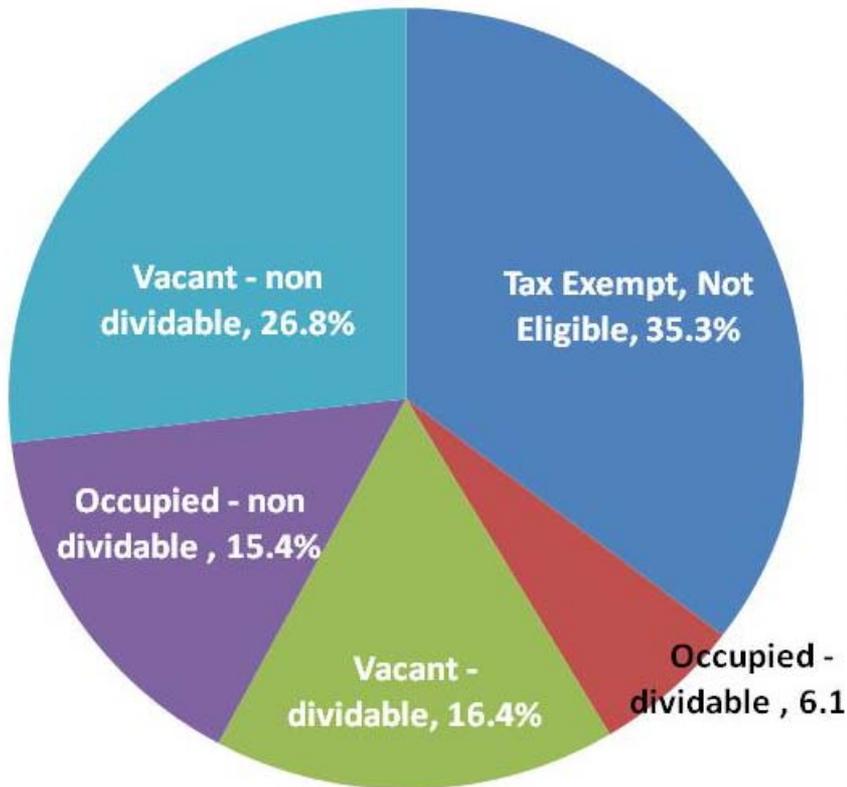
Waterbody Type	Number of Parcels (+/-)
Marine	1,500
Rivers and Streams	922
Lakes	280 (267 along Lake Sutherland)
TOTAL	~2,702

Future Development Potential – Marine Shoreline

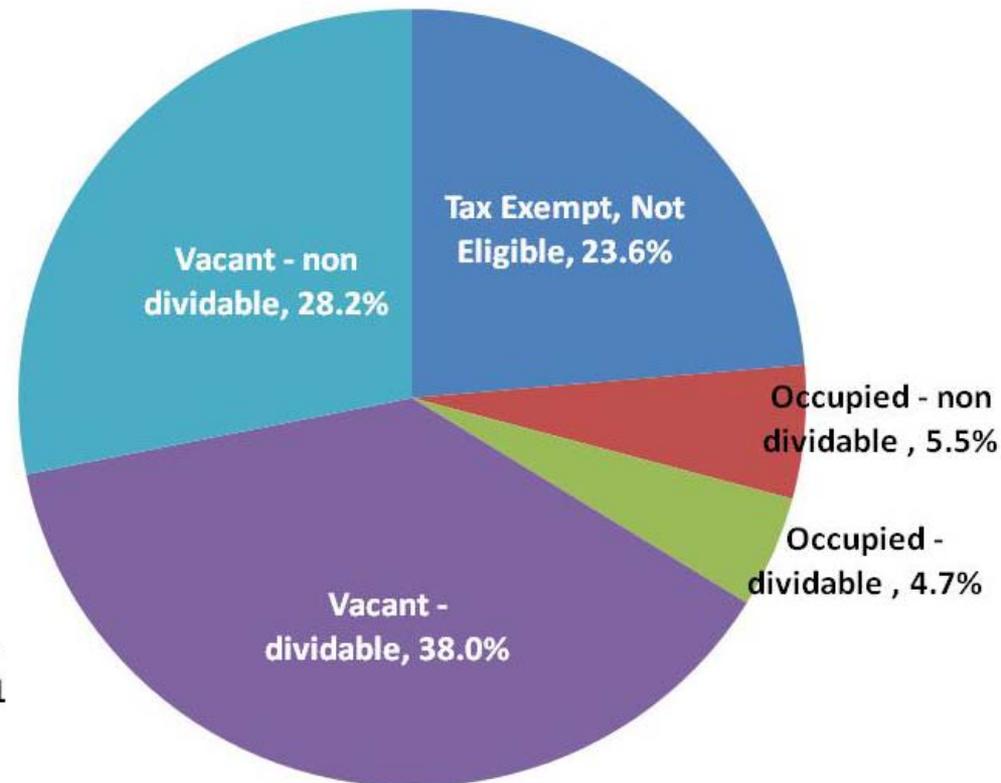
Percent of SMA jurisdictional area in various development categories



Future Development in Floodplains



East County



West County