

# ISLAND COUNTY MARINE RESOURCES COMMITTEE

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## Minutes

Prepared by Kelly Zupich

# May 7, 2024

CAMANO/HYBRID MEETING

**PRESENT:** Barbara Bennett, Chair, Jill Lipoti, Vice Chair, Scott Chase, Paul Ben McElwain, Greg Easton, Kirk Larsen, Patrick Havel, Kelly Webb, Ken Collins, Andi Kopit, Jennifer Schmitz, Ex-officio, Kelly Zupich, MRC staff

**ABSENT:** Note if notified or un-notified – Kes Tautvydas, notified, Melanie Bacon, notified, Sarah Bergquist, un-notified,

**VISITORS:** Clea Barenburg, SRTCC, James Watson, WICD, Paul Williams, SWS, Jessica Reed, Watershed Planner, Allie Feidt, NASWI, Michael Beech, IC Planning, Shawn Morris, PH Director, Krista Loercher, Public, Chris Kelley, IC Hydrogeologist, Lauren Ode-Giles, Herrera Environmental, Andrea MacLennan, Herrera Environmental, Jonathan Lange, IC Planning Director,

**CALL TO ORDER:** Jill called the meeting to order at 4:00pm. **INTRODUCTIONS:** Introductions were made. **QUORUM:** A quorum was declared. **AGENDA:** The agenda was approved. **MINUTES:** April 2, 2024, minutes approved

### TRIBAL ACKNOWLEDGEMENT:

We acknowledge the lands we're on today are the ancestral and current homelands of Indigenous Nations who have stewarded them since time immemorial. We respect their sovereignty, support their Treaty rights, their right to self-determination, and we honor their sacred spiritual connection with the land and water.

### LEADERSHIP REPORTS:

- The MRC voted to present the White Paper at the Leadership Council on June 5<sup>th</sup>, 2024.

### SALMON RECOVERY PROJECTS UPDATE:

 Clea Barenburg

- 24-1118 Whidbey Camano Land Trust Acquisition of Sherman property at Livingston Bay
- 24-1274 Tulalip Tribes Cultus Bay Fish Passage
- 24-1117 Island County Public Works Race Lagoon Culvert replacements
- 24-1119 Whidbey Camano Land Trust Double Bluff Acquisition
- The MRC will review the projects and vote to decide which projects they want to send letters of recommendation for.

### SHORELINE ARMORING SURVEY REORT:

Please see presentation at the end of the minutes.

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## **NWSC REPRESENTATIVE UPDATES:**

- Vessel turn-in events in San Juan and Skagit County.
- NWSC Meeting taking place at Camano Island Library on May 31<sup>st</sup>.

## **FLOATING KELP MAPPING PROPOSAL: DNR**

- MRC Voted to share our support for this project to become Coalition members.

## **COMPREHENSIVE PLAN/SHORLINE MASTER PROGRAM UPDATES:**

- The Comp. Plan subcommittee has decided to submit comments on all of the elements.

## **TRIBAL ACKNOWLEDGEMENT:**

- We voted to adjust our Tribal Acknowledgement to a shorter version to be more inclusive.
- “We acknowledge the lands we’re on today are the ancestral and current homelands of Indigenous Nations who have stewarded them since time immemorial. We respect their sovereignty, support their Treaty rights, their right to self-determination, and we honor their sacred spiritual connection with the land and water.”

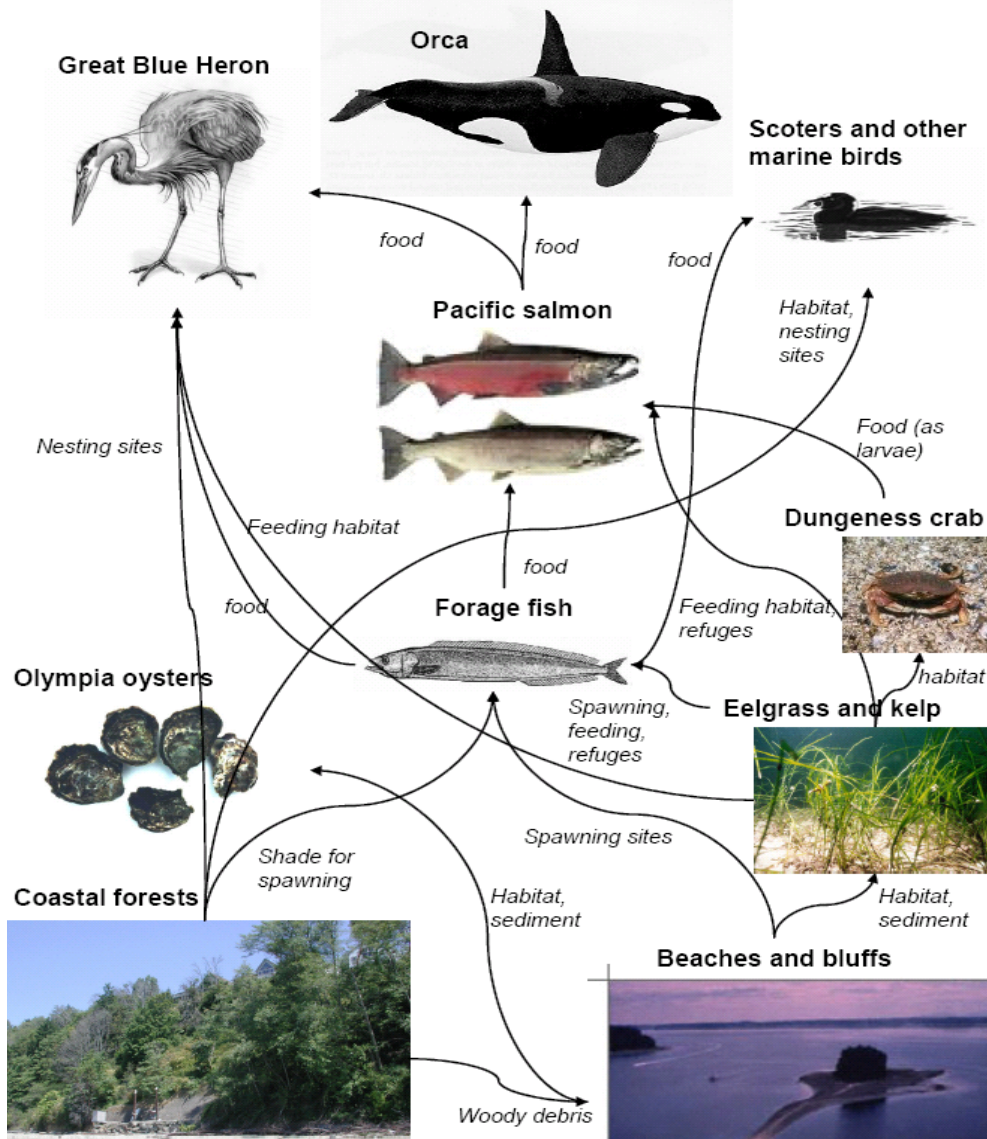
Meeting Adjourned 6:00 pm



# ISLAND COUNTY SHORELINE ARMOR MAPPING & CHANGE ANALYSIS

TEAMS PRESENTATION | MAY 7, 2024

# PUGET SOUND INTERCONNECTED COMPONENTS



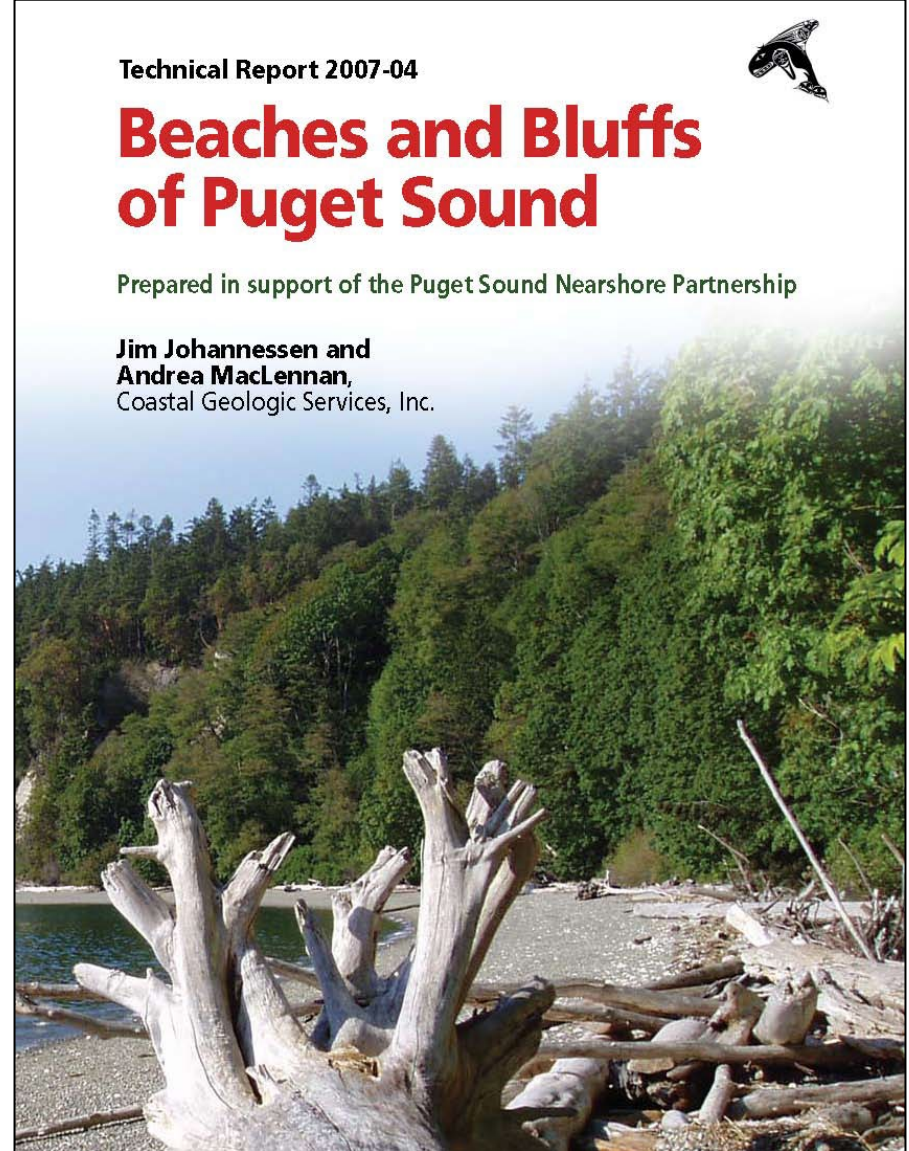
Technical Report 2007-04



## Beaches and Bluffs of Puget Sound

Prepared in support of the Puget Sound Nearshore Partnership

**Jim Johannessen and  
Andrea MacLennan,**  
Coastal Geologic Services, Inc.

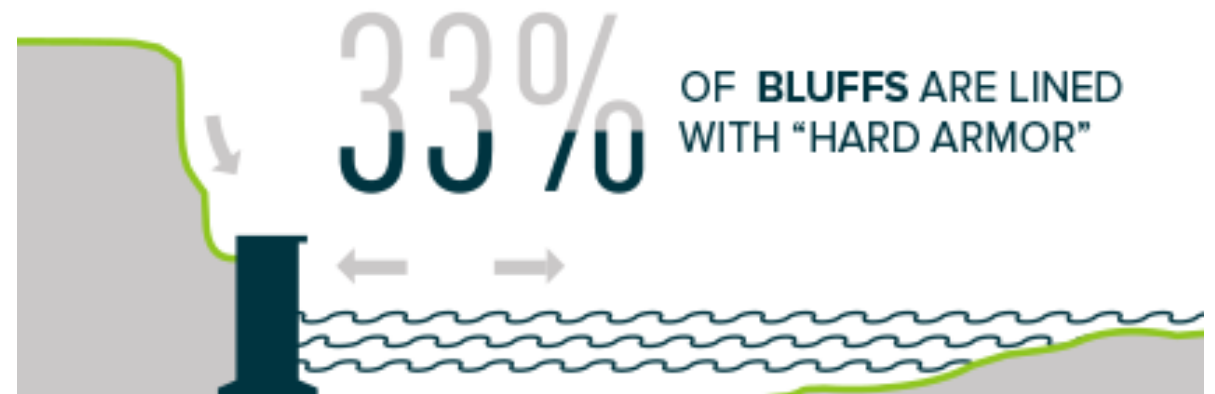
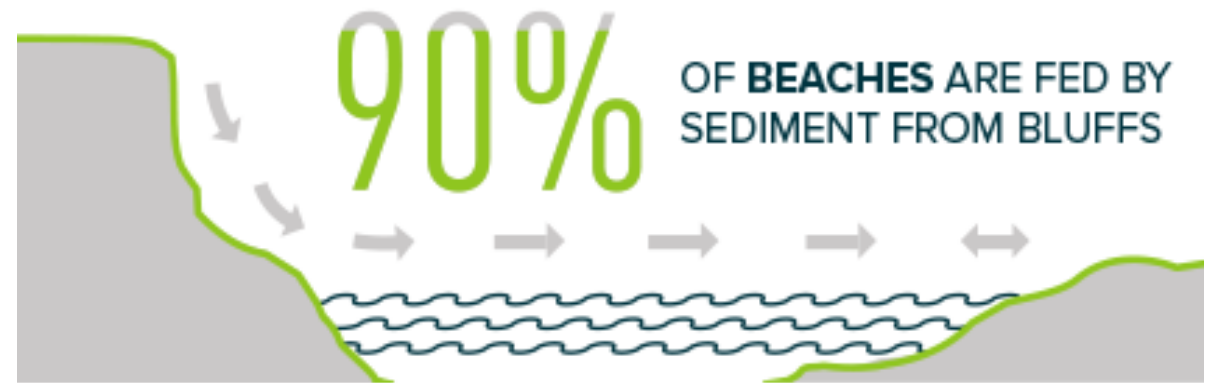


# SHORELINE ARMOR

## ■ Impacts of Shore Armor

- ◆ Burial of beach
- ◆ Loss of backshore berm
- ◆ Increase wave reflection
- ◆ Beach scour/erosion
- ◆ Loss of fines (sands)
- ◆ Impacts to littoral drift
- ◆ Reduced sediment input
- ◆ Proliferation and expansion
- ◆ Habitats simplified/lost

*Natural beaches are critical to Puget Sound biodiversity.*



# MAPPING SHORELINE ARMOR IN ISLAND COUNTY

## ■ Mapping Objectives

- ◆ Repeat Methods from 2016 mapping
- ◆ Measure Armor Change
  - ◆ Characterize nature of change
- ◆ Pair with Permit Analysis
  - ◆ Evaluate types of permits and actions



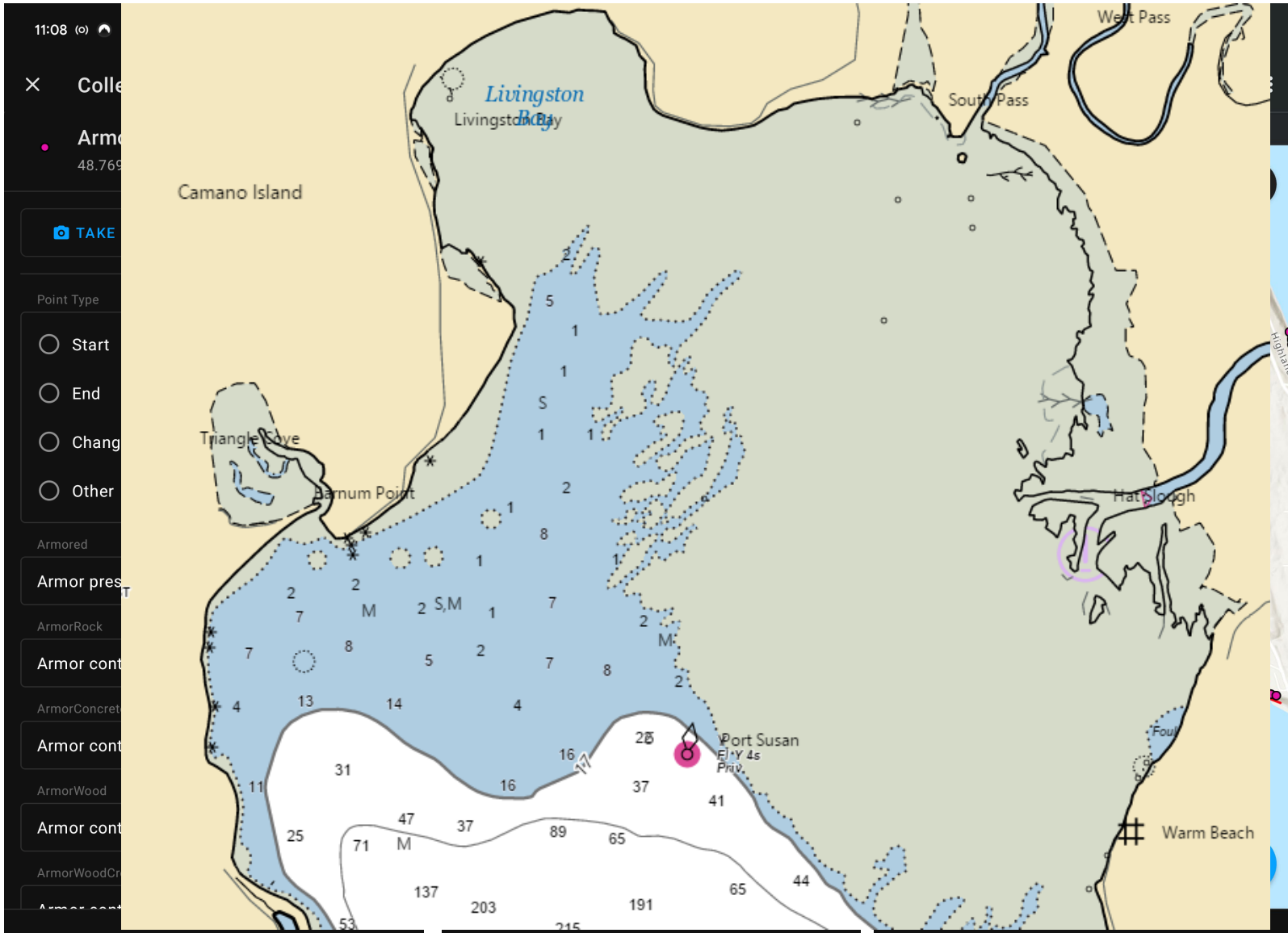
# SHORELINE ARMOR MAPPING METHODS

- Boat-based mapping
- Desktop post-processing and analysis
- Association of armor changes with permit records



# SHORELINE ARMOR MAPPING METHODS

- Boat-based mapping
  - GNSS GPS + Laser Rangefinder
  - Digital Field Form
  - High-tide cycle for shallow areas

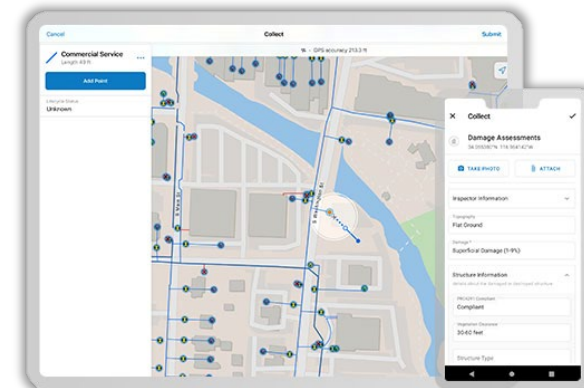
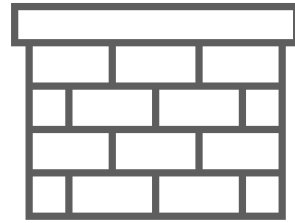




# LASER OFFSET MAPPING

## ■ How it works:

- Collect a GPS point
- Within digital field form, “offset” the GPS point
- Fire the laser rangefinder at the mapping target
- The GPS point is shifted in FieldMaps to the target location



# POST-PROCESSING AND ANALYSIS APPROACH

- Desktop post-processing and analysis
  - Compared “pre-snap” and ShoreZone-conforming armor geometry
  - Analyzed for changes in:
    - Presence/absence
    - Elevation
    - Condition
  - Summarized by shoretype, forage fish impacts



**Figure 4.** Example of difference in GPS point placement in 2016 and 2023 mapping efforts relative to the ShoreZone Shoreline that produced different pre-snap shoreline armor measurement results.

# PERMIT ANALYSIS APPROACH

- Unify and summarize permit records across jurisdictions
- Associate tax parcels with permit records by Parcel ID
- Extend coastal parcels to intersect

Parcel Number	Jurisdiction	Permit Number	Permit Type	Permit Description	Project Name	Project Description	Permit Issued	Permit Status	Modify
R13202-268-4820	Oak Harbor		Shoreline maintenance exemption	Armor repair and stormwater outfall repair	Armor repair and stormwater outfall repair	Armor repair and stormwater outfall repair 80 LF	10/19/2018	Approved	
R13232-173-0200	Island County	373/20	PL-SHE-II	Shoreline Exemption, Type II	Demolish existing house, replace bulkhead and construct new SFR and appurtenances			Approved	
R13233-410-3750	Coupeville	SSD-23-001		Sea wall	Sea wall	Sea wall		Denied	
R13332-238-0170	Island County	273/22	PL-SHE-II	Shoreline Exemption, Type II	Hayes bulkhead	Replacement of rock bulkhead with concrete bulkhead		Permit complete	
R13332-247-0220	Island County	159/19	PL-SHE-II	Shoreline Exemption, Type II	Repair of existing 120 linear ft rock riprap bulkhead	Repair of existing 120 linear ft rock riprap bulkhead	6/14/2019	Approved with Conditions	

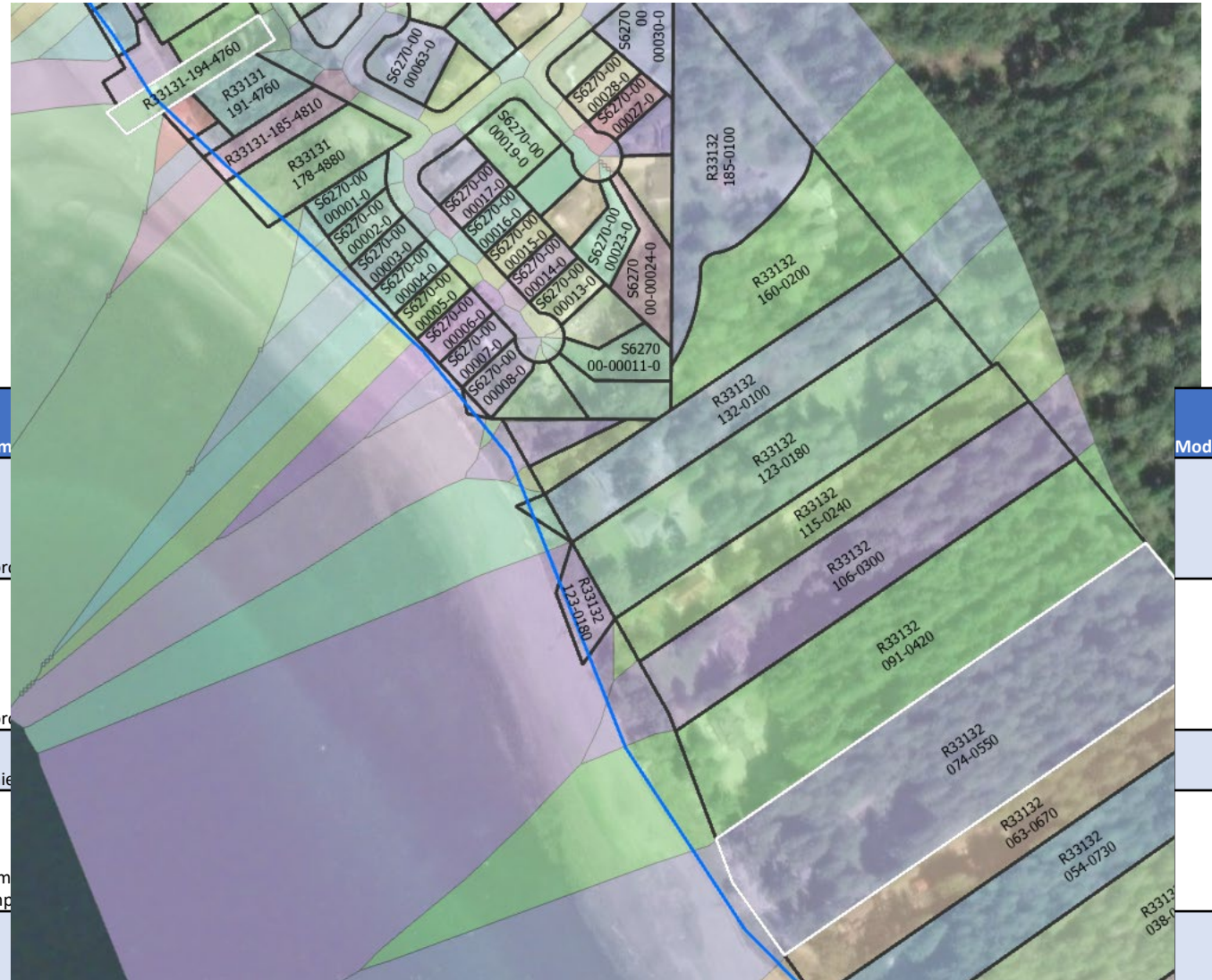


Figure A.1. Mapped presence of shoreline armor in Island County, WA - 2023.



Figure A.3. Shoreline armor in Island County, WA mapped only in 2023 (not mapped in 2016).



# SHORELINE ARMOR MAPPING & CHANGE

# SHORELINE ARMOR CHANGE RESULTS

- Island County armor change (2016 to 2023):
  - 391 new armor segments
  - Mappers observed active shore armor construction at 4 locations
  - 64% of new armor installed adjacent to existing armor



**Table 2. Summary of Potential New Shore Armor Adjacent to Existing (Mapped in 2016) Shore Armor.**

Potential New Shore Armor—Adjacency Class	Armor Length (feet, percent of potential new armor)
Installed adjacent to existing shore armor <sup>a b</sup>	9,286 (64 percent)
Not adjacent to existing shore armor <sup>a b</sup>	5,118 (36 percent)
Total length of potential new armor <sup>a b</sup>	14,404

# SHORELINE ARMOR CHANGE RESULTS

- Accretion shoreforms and feeder bluff most frequently armored
  - 59% of new armor on accretion shoreforms
  - 20% of new armor on feeder bluffs

**Table 12. Summary of Geomorphic Shoretype Co-Location with Mapped Shoreline Armor Present in Only 2023, Not in 2016 (Potential New Shore Armor) and Issued Permits<sup>a</sup>.**

Geomorphic Shoretype <sup>b</sup>	Length of Potential New Shore Armor	Percentage of Potential New Shore Armor by Shoretype	Length of Shoreline Co-Located with Mapped Change in Armor Presence and Issued Permits <sup>c</sup>	Percentage of Potential New Shore Armor Accounted for by Issued Permits
Accretion Shoreform	8,266	59 percent	1,398	17 percent
Feeder Bluff	2,815	20 percent	265	9 percent
Transport Zone	1,842	13 percent	--	0 percent
No Appreciable Drift—Artificial	757	5 percent	154	20 percent
No Appreciable Drift—Low Energy	19	0 percent	--	0 percent
No Appreciable Drift—Delta	28	0 percent	--	0 percent
Feeder Bluff – Exceptional	274	2 percent	--	0 percent
Pocket Beach	11	0 percent	--	0 percent
Pocket Beach—Artificial	105	1 percent	105	100 percent
<i>Grand Total</i>	14,116	--	1,920	14 percent



# SHORELINE ARMOR CHANGE RESULTS

- 30% of forage fish spawning habitat was armored in 2023
  - 29% of habitat armored in both 2016 and 2023
  - New armor on 1.3% of habitat
  - Armor removed from 1% of forage fish spawning habitat



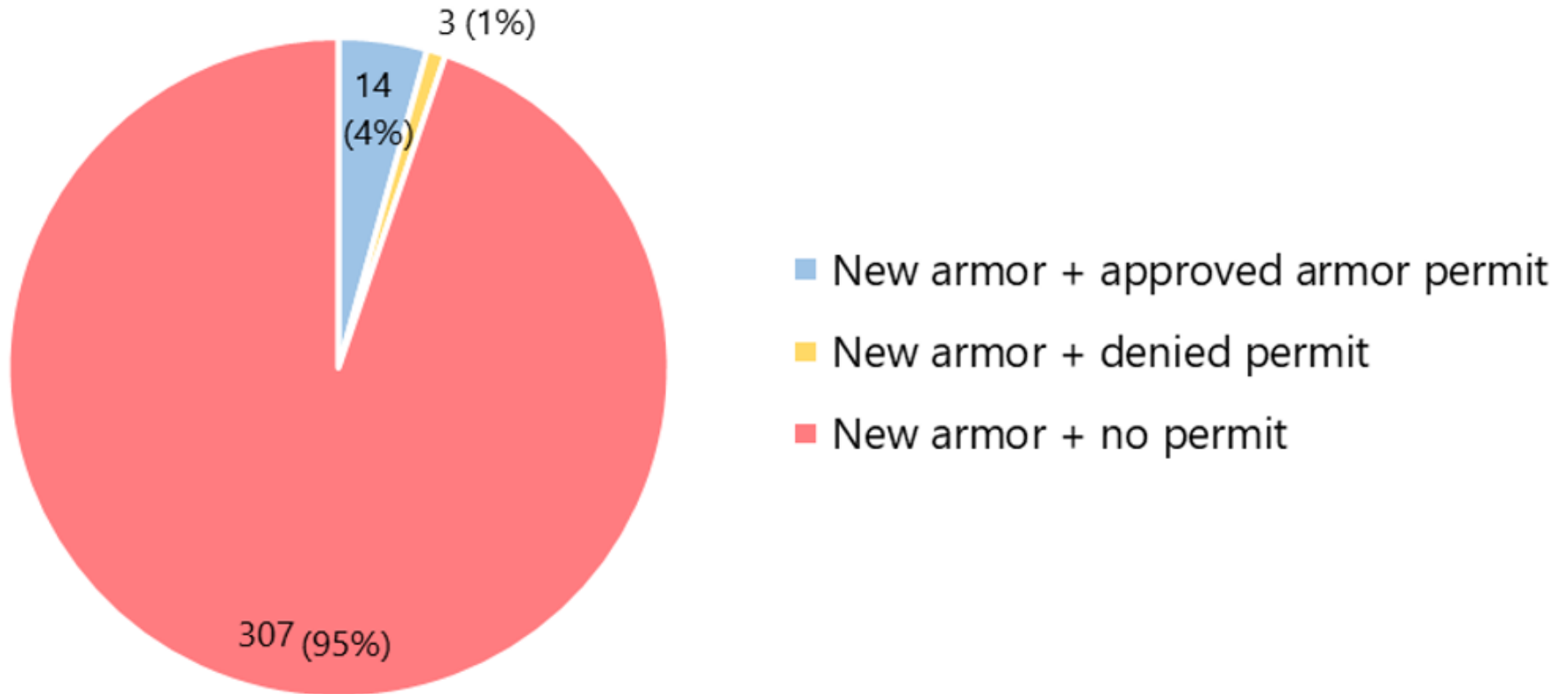
**Table 10. Summary of Forage Fish Spawning Habitat Co-Location With Mapped Shoreline Armor and Permit Records, 2016–2023<sup>a</sup>.**

Mapped Change in Armor Attributes	Forage Fish Spawning Habitat Length in feet (Percent of Total Spawning Habitat)	Length Of Shoreline with Corresponding Armor Permit Records in feet (Percent of Change Accounted for Through Permit Records)
Armored in 2023, not in 2016	7,864 (1 percent)	345 <sup>b</sup> (4 percent)
Armored in 2023 and in 2016	163,250 (29 percent)	--
Armored in 2016, not in 2023	6,037 (1 percent)	270 <sup>c</sup> (4 percent)
Unarmored in 2023 and 2016	395,274 (69 percent)	--
<i>Total forage fish spawning habitat</i>	572,425	615 (0 percent)



# PERMIT ANALYSIS

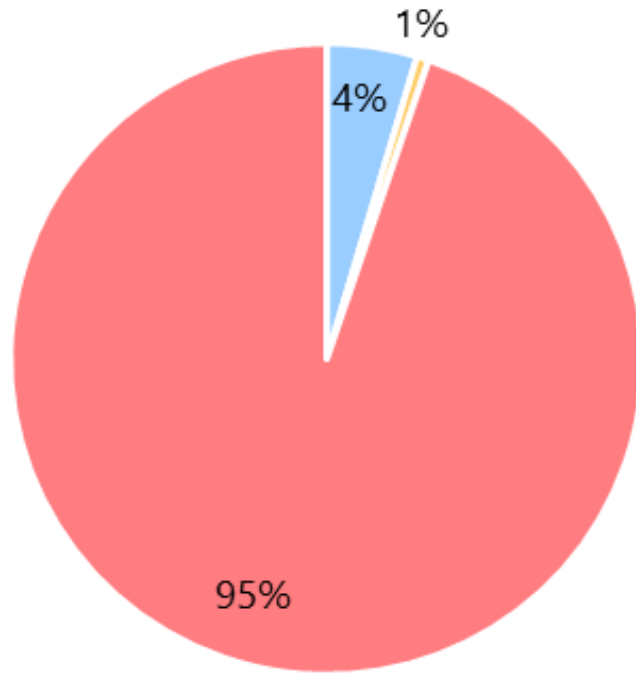
New Armor + Permit Associations (Count of Parcels)





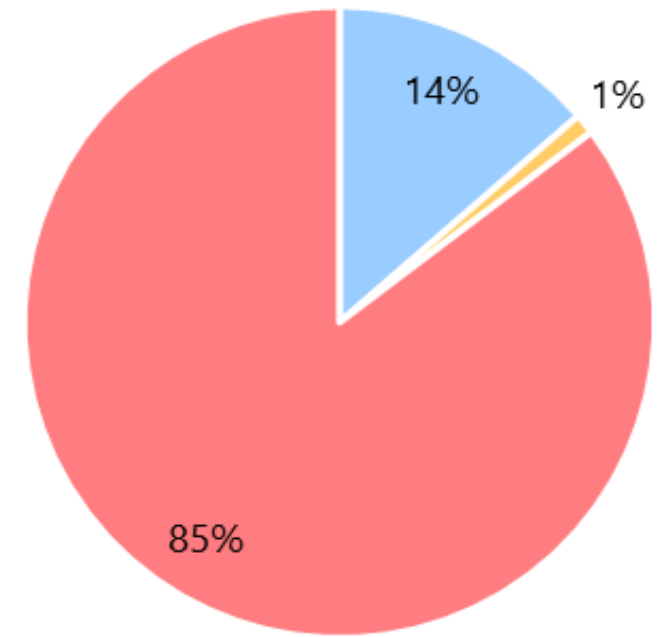
# PERMIT ANALYSIS

New Armor + Permit Associations  
(Count of Parcels)



- New armor + approved armor permit
- New armor + denied permit
- New armor + no permit

New Armor + Permit Associations  
(Length)



# PERMIT ANALYSIS

- Widespread permitted and unpermitted change
  - Most change clustered in existing developments
  - Some parcels had more than one permit
- Example sites:

Mapped change without associated permits

- Potential new shore armor
- Potential shore armor removal
- Potential change in shore armor

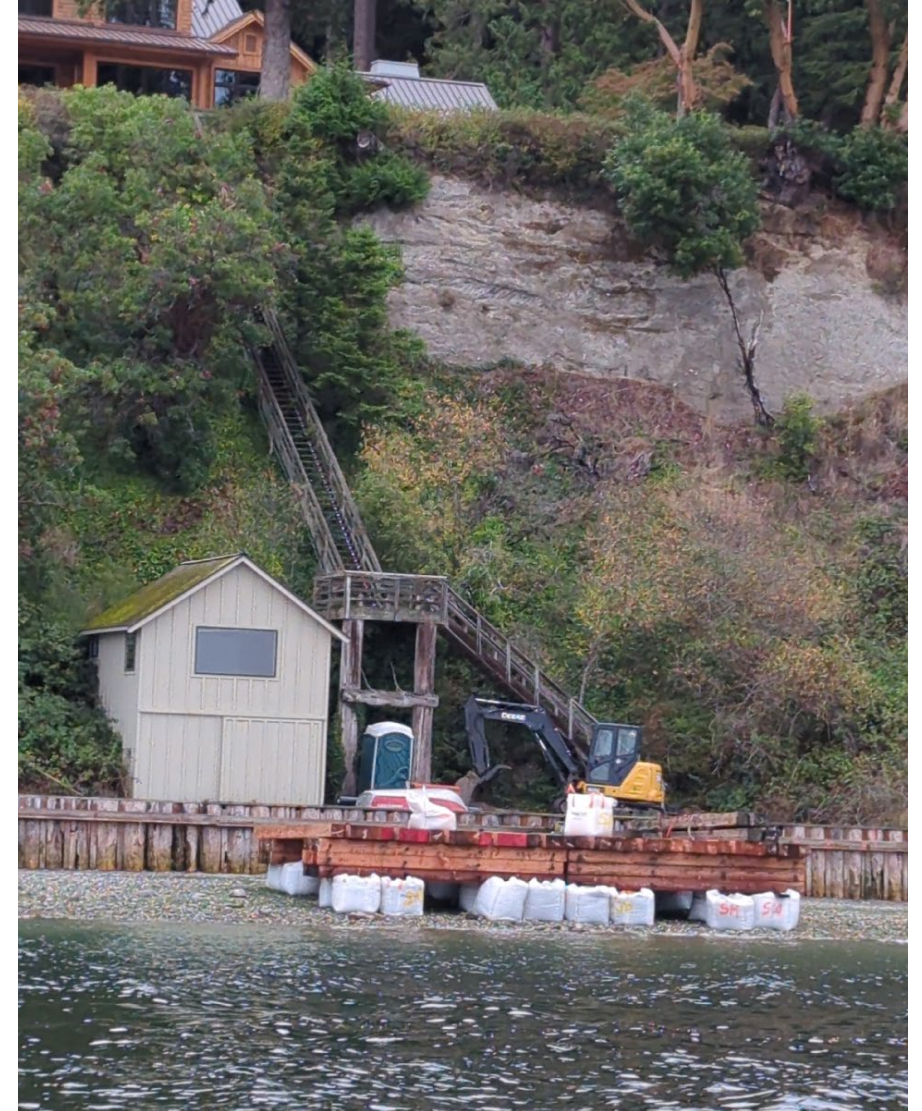
Mapped change with associated permits

- Permit issued for new armor
- Permit issued for armor removal
- Permit issued for armor alteration



# DISCUSSION

- Considerable lengths of unpermitted and permitted armor change were documented since 2016
- Additional verification of armor on unpermitted activities should be conducted before pursuing action:
  - Mapping event photos and historical air photos
  - Legacy permits
- Ongoing compliance monitoring and armor change mapping are valuable tools for enforcement and preserving long-term shoreline functions



# QUESTION & ANSWER

