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## The beach strategies geodatabase

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Lubeck, Alison; Rishel, Branden; MacLennan, Andrea; and Johannessen, Jim, "The beach strategies geodatabase" (2018). *Salish Sea Ecosystem Conference*. 509.

<https://cedar.wwu.edu/ssec/2018ssec/allsessions/509>

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# Beach Strategies

## an ESRP Learning Project



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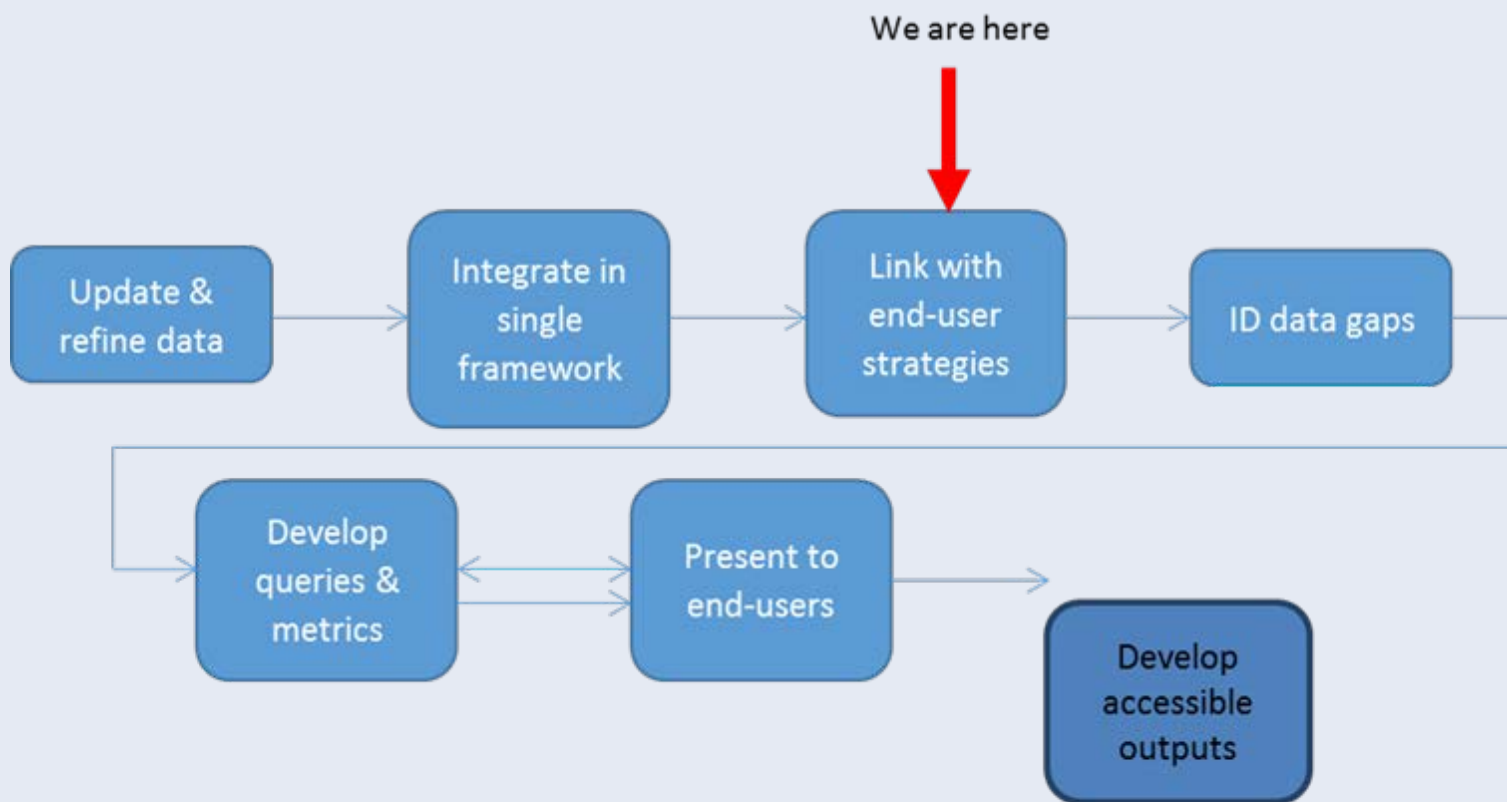


# Objectives of the Beach Strategies Project

Compile and augment data available to nearshore managers to inform nearshore strategy development and decision-making for beach systems in the Puget Sound region.

- ◆ Build on previous Beach Strategies work
- ◆ New data relevant to beach systems
- ◆ Higher resolution
- ◆ Common thread with other efforts
  - ◆ Marine Shorelines Design Guidelines
  - ◆ Shore Friendly; Social Marketing
  - ◆ PSNERP
- ◆ Outreach to end-users

# Objectives of the Beach Strategies Project



General flow of tasks that comprise the larger Beach Strategies project.

# Phase 1 of the Beach Strategies Project

Data Assessment



Data Development



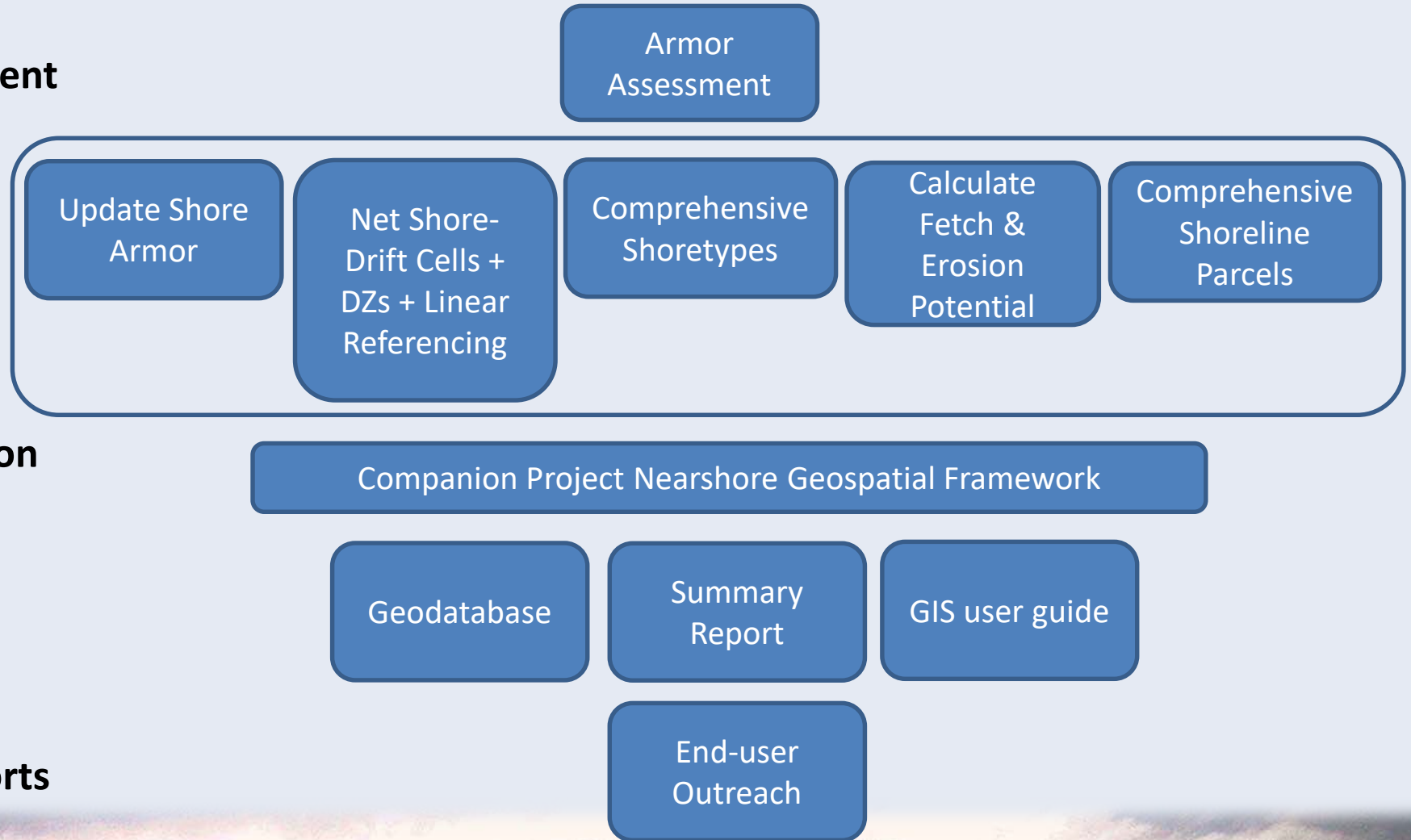
Data Integration



Deliverables



Outreach Efforts

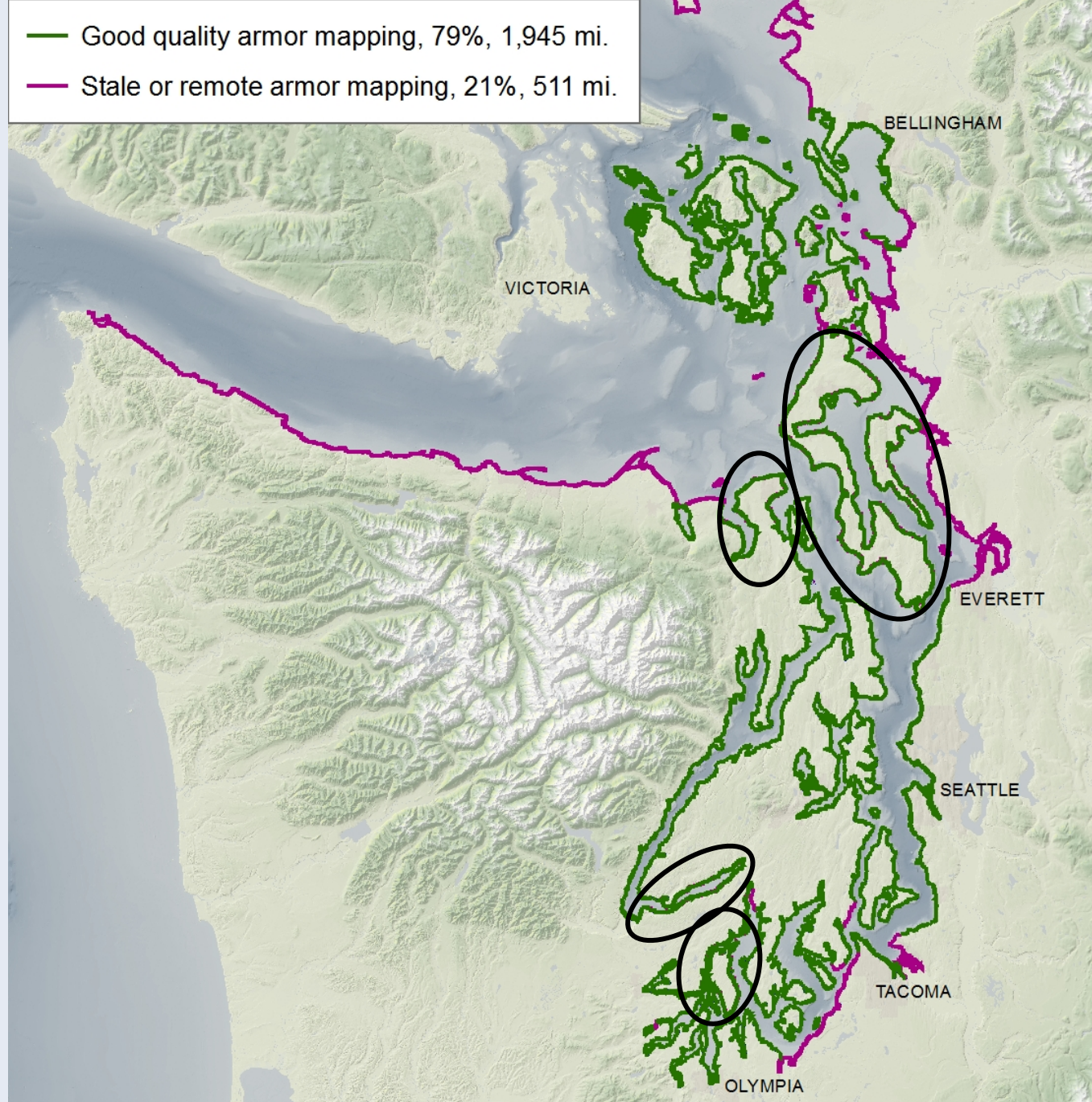


# Shoreline Armor: Armor Assessment

- ◆ Updated armor compilation
  - ◆ Feeder Bluff Mapping + Change Analysis
  - ◆ Integrated new armor mapping since those data (2016)
- ◆ Evaluated source data
  - ◆ Age (year or original data collection)
  - ◆ Method
  - ◆ Other supporting data (i.e. original compilation)
  - ◆ Resolution (minimum mapping unit)
- ◆ **Updated armor mapping method (tidal elevation, condition, materials, HFB status)**
- ◆ Identified priority areas to update armor mapping
  - ◆ Remapped 367 miles of priority shoreline in Mason, Jefferson and Island Counties
    - ◆ Island County funded separately

## Armor Mapping: After

- ◆ 43 miles done in Discovery Bay and Port Townsend
- ◆ 110 miles done in southern Hood Canal and Hartstene Island area
- ◆ 214 miles (non-project) done for Island County Armor Mapping
- ◆ 15% of Sound shores covered this year under new protocols, including elevation, condition, and materials
- ◆ Shore armor shot with lasers thousands of times
- ◆ Still more left to update



# Shoretype Mapping

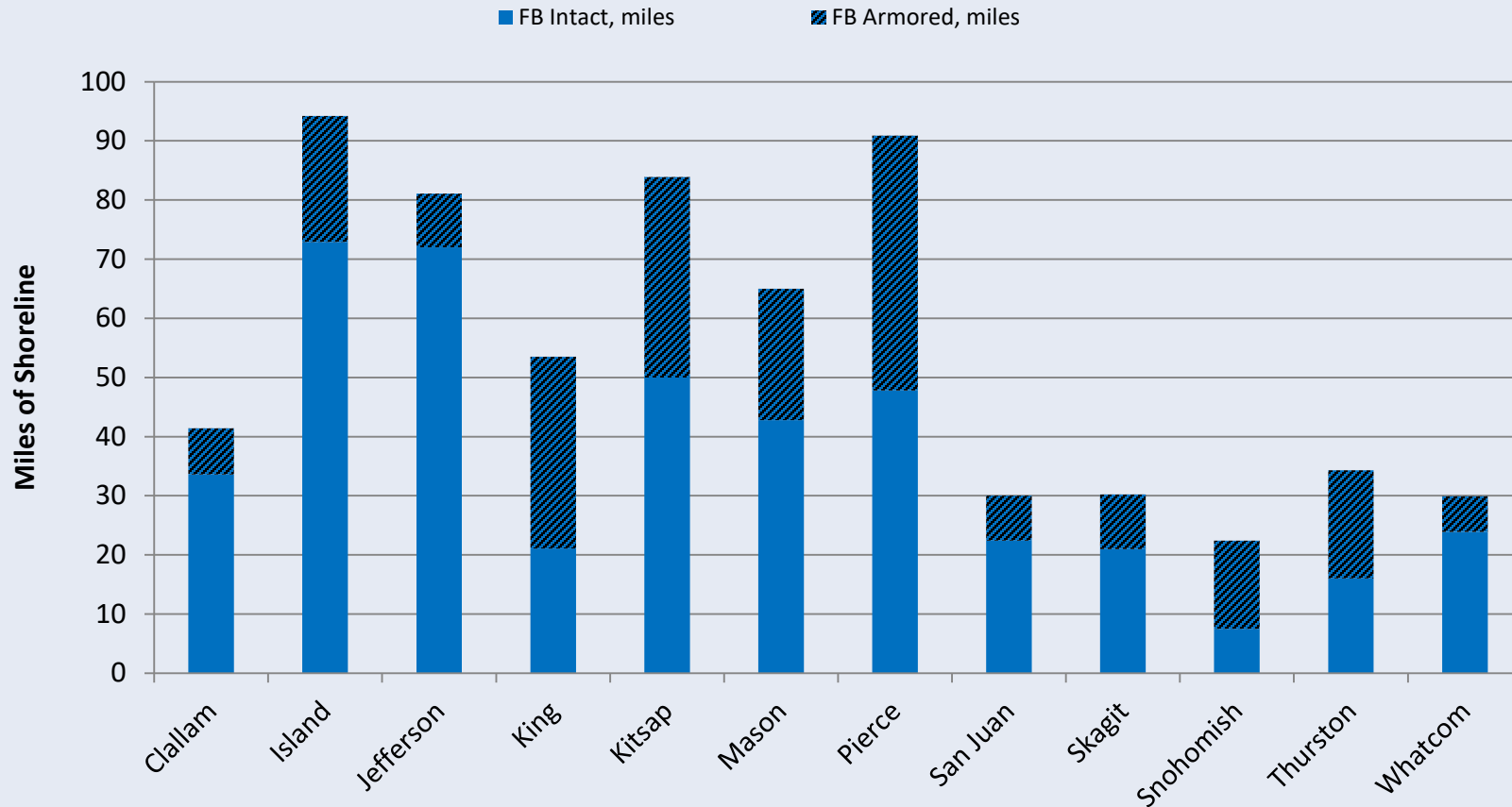
- ◆ Objective: Complete comprehensive shoretype mapping
- ◆ Identify appropriate shoretypes for armored shores (MOD)
  - ◆ HFBs
  - ◆ NFBs
- ◆ Complete Pocket Beach mapping at better resolution





# Shoretype Mapping: Results

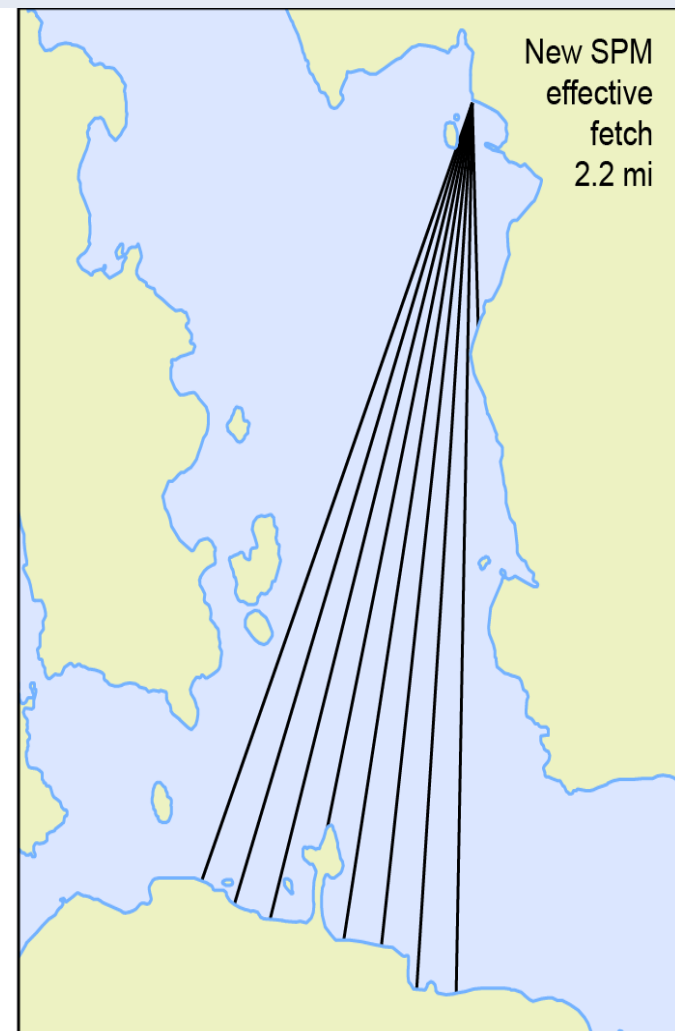
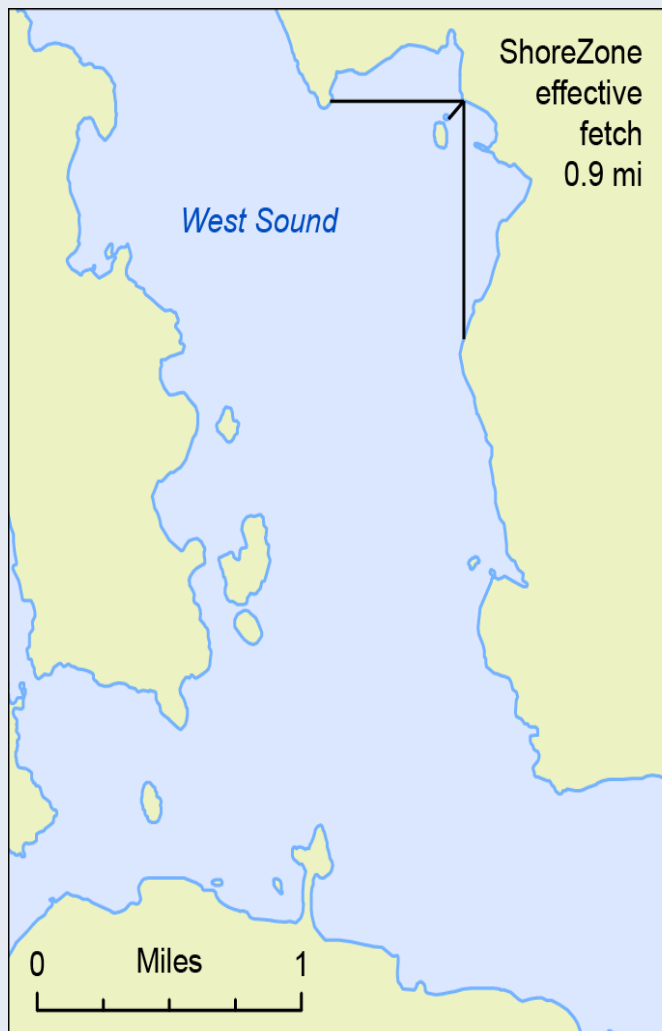
## Summary of feeder bluff conditions by county



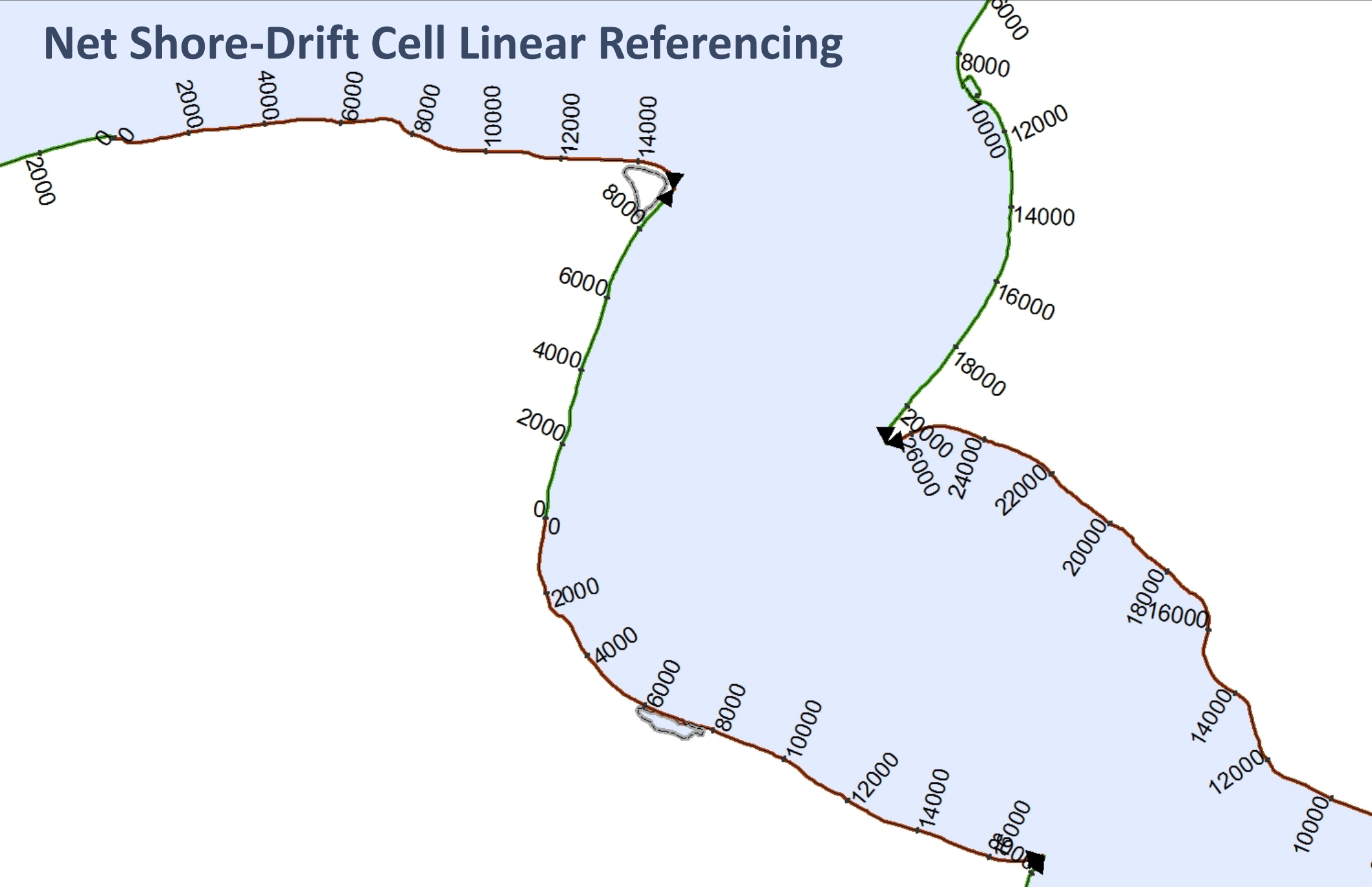
# Effective Fetch: Methods

## Fetch measure applied Sound-wide

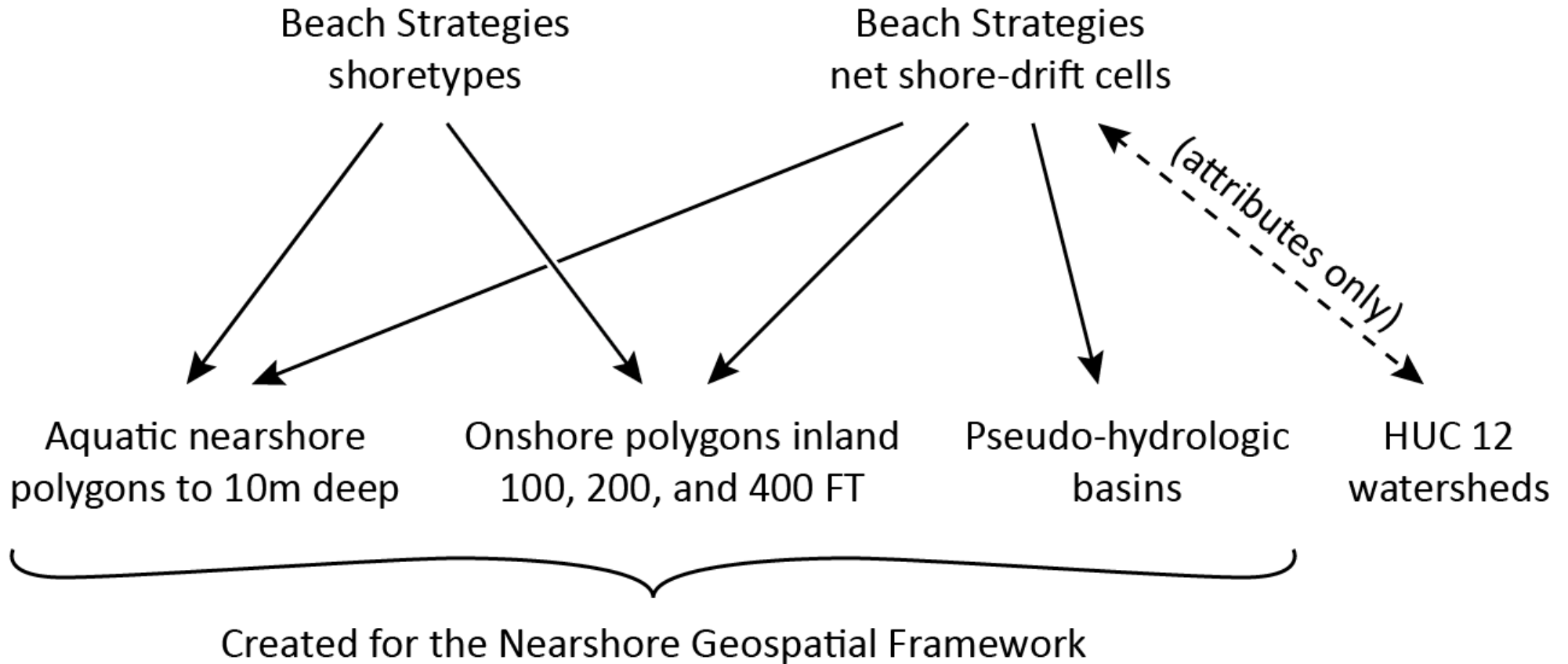
- ◆ Approach similar to Finlayson (2005), based on guidelines in the USACE Shore Protection Manual (1984)
- ◆ Averaged measured from 3 degree intervals across 24-degree swath
- ◆ Higher resolution than ShoreZone



# Net Shore-Drift Cell Linear Referencing



# Nearshore Geospatial Framework



# Phase 1 of the Beach Strategies Project

## Where do I find the deliverables?

Salish Sea Wiki – search for Beach Strategies.

There you will find links to all reports, including:

- ◆ Summary Report with appendices:
  - ◆ Geodatabase Refinements Summary (brief)
  - ◆ GIS user's guide
  - ◆ Armor assessment
  - ◆ Historical Feeder Bluff Mapping docs
- ◆ Youtube video with tour of geodatabase
- ◆ Example metrics – “baseball cards”

## How do I get the geospatial data?

Ask Jay and Tish at ESRP for access

# Phase 2 of the Beach Strategies Project

- ◆ Continue outreach to end-users via surveys
- ◆ Develop conceptual linkages that demonstrate relationships between beach ecosystem elements and end-user needs
- ◆ Develop suite of updated metrics using new data
  - ◆ Example: armored feeder bluffs per drift cell
- ◆ Review draft results, refine, and analyze and present again!
- ◆ Present and package results in formats requested by end-users
  - ◆ Raw data, query results, priority areas (at multiple scales), in GIS and via web-based platform

Provide your contact information on your survey if you would like to be part of the process!