



Whiteman Cove - Overview of Existing Data and Studies



Presented by
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Regional Information

Connectivity of Barrier Embayments/ Pocket Estuaries in South Puget Sound

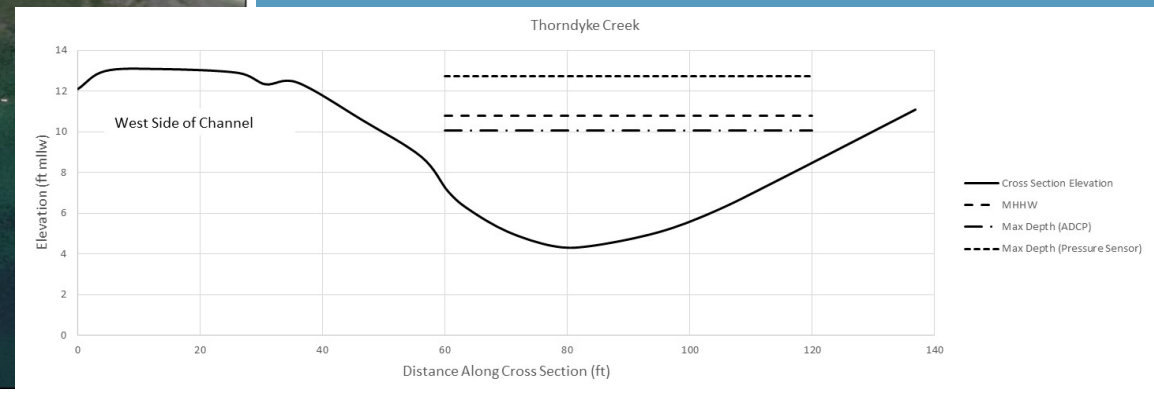
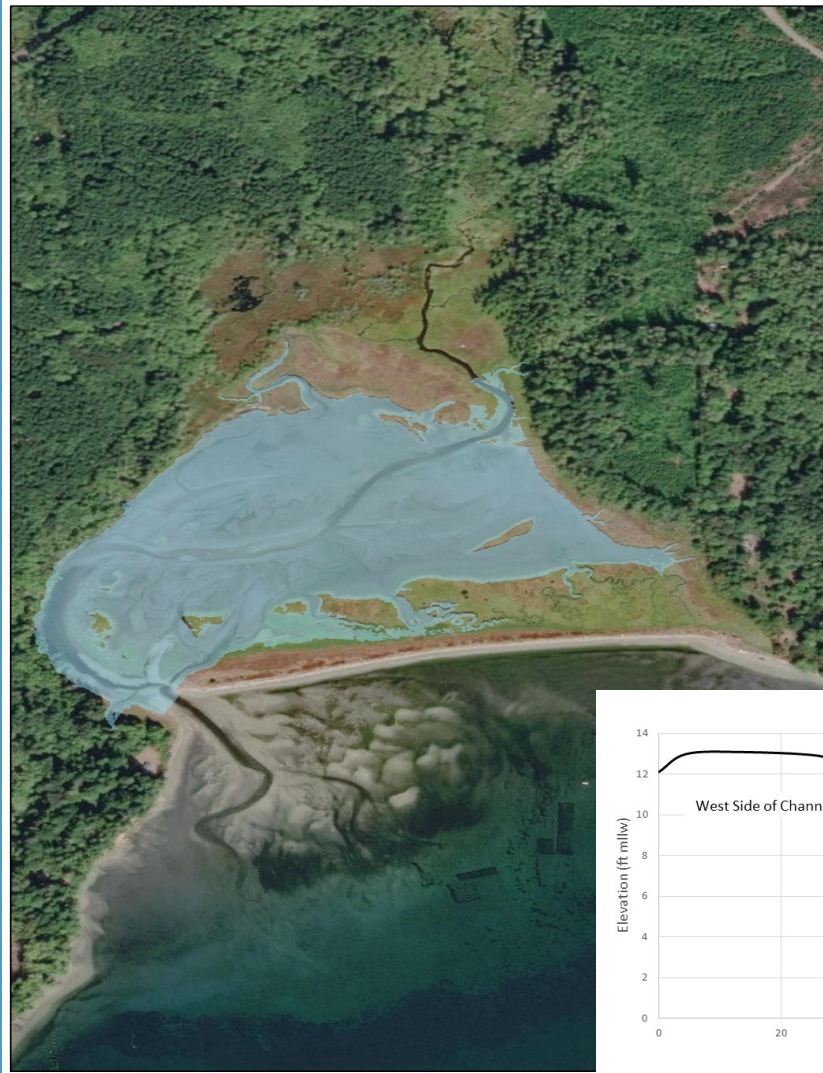
Fish habitat/passage
literature review is
ongoing.



- Modified, not accessible to salmon
- Intact, no human-made barriers

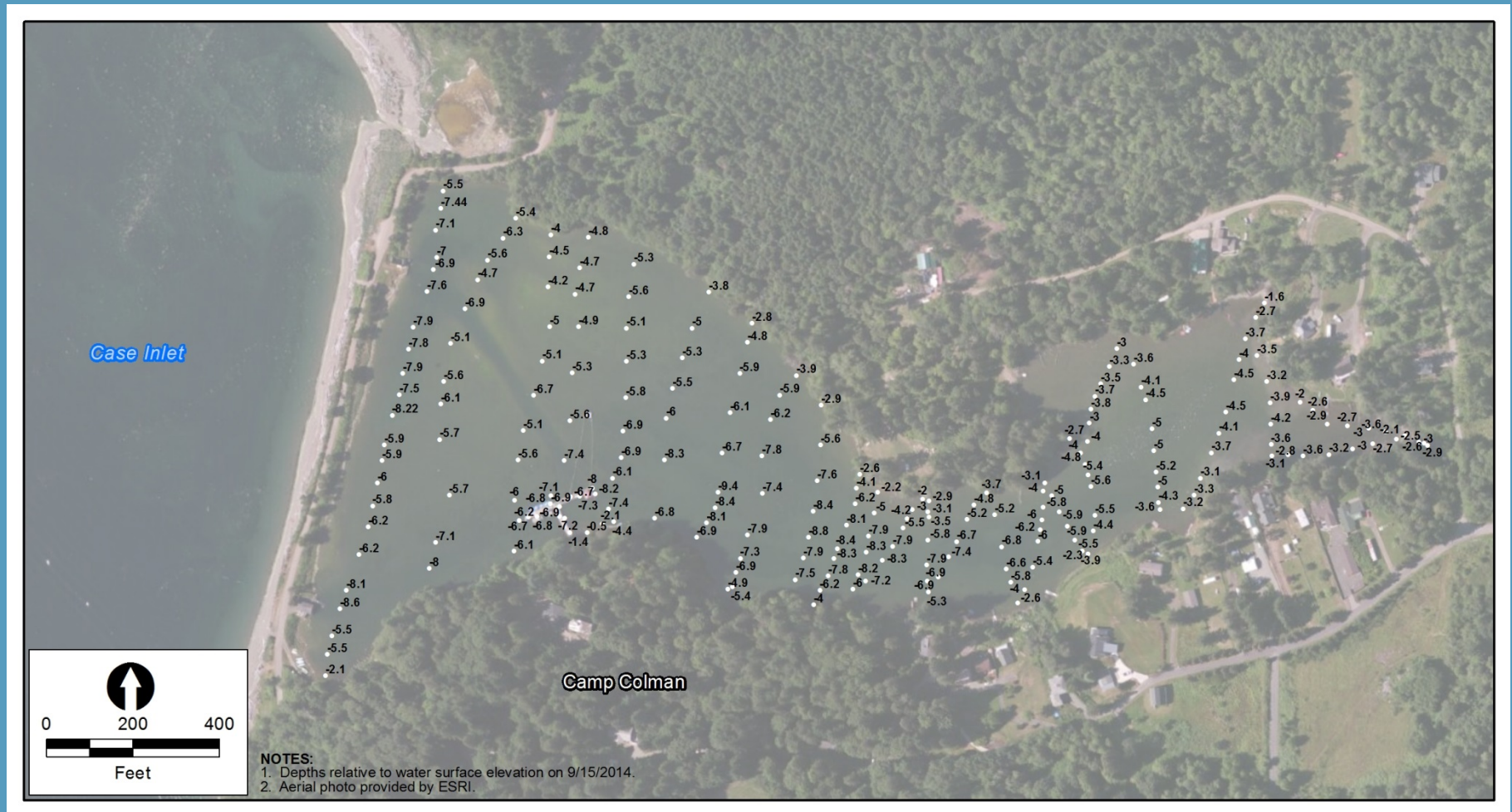
- Juvenile fish migration for extended rearing
- Salmon out-migration through Puget Sound

New Information on Tidal Channel Sizing for Fish Passage



Project Site Information

Bathymetry Data Collection (Water Depths)



Site Basemap - Elevations

NOTES:

1. Elevations are MLLW, feet.
2. Bathymetry from survey conducted 9/15/2014, upland topography from Puget Sound Lidar Consortium, 2000-2005.
3. Aerial photo provided by ESRI.



Comparison with historical information

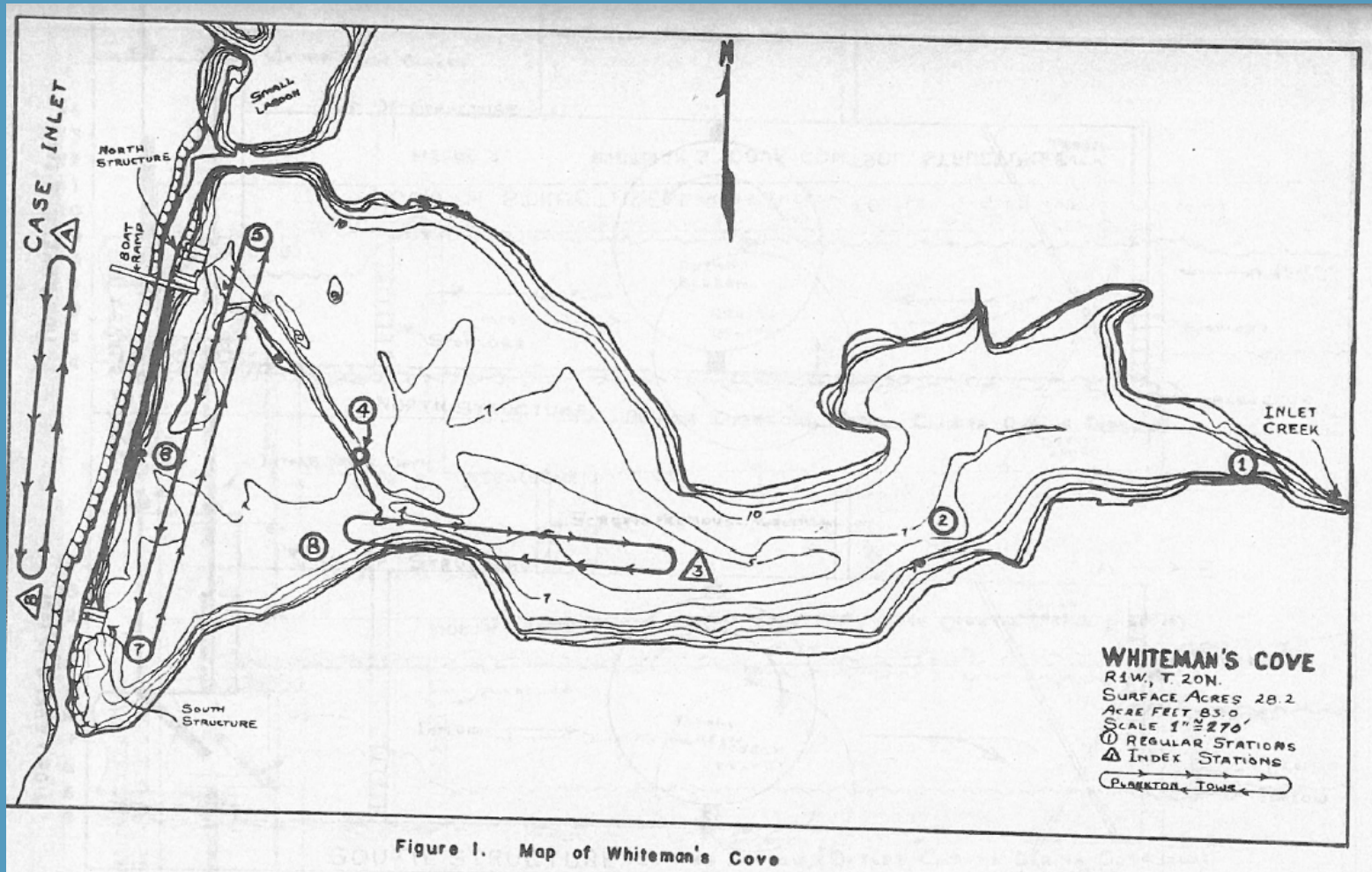
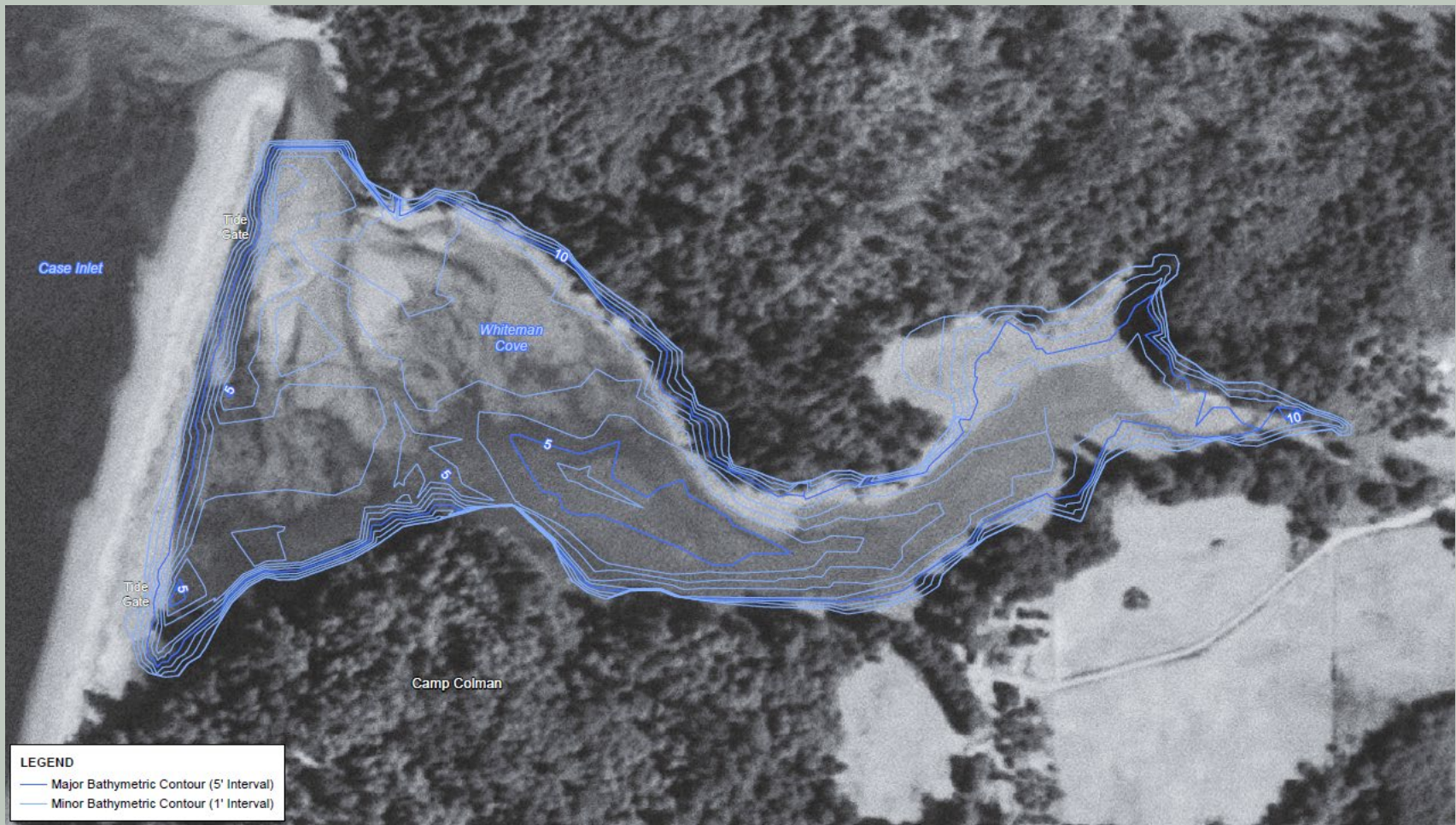


Figure 1. Map of Whiteman's Cove

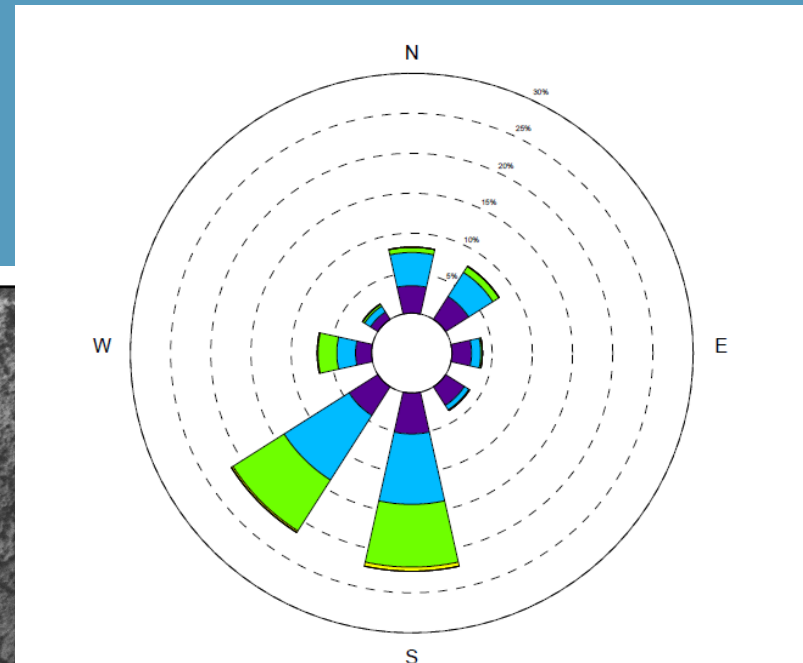
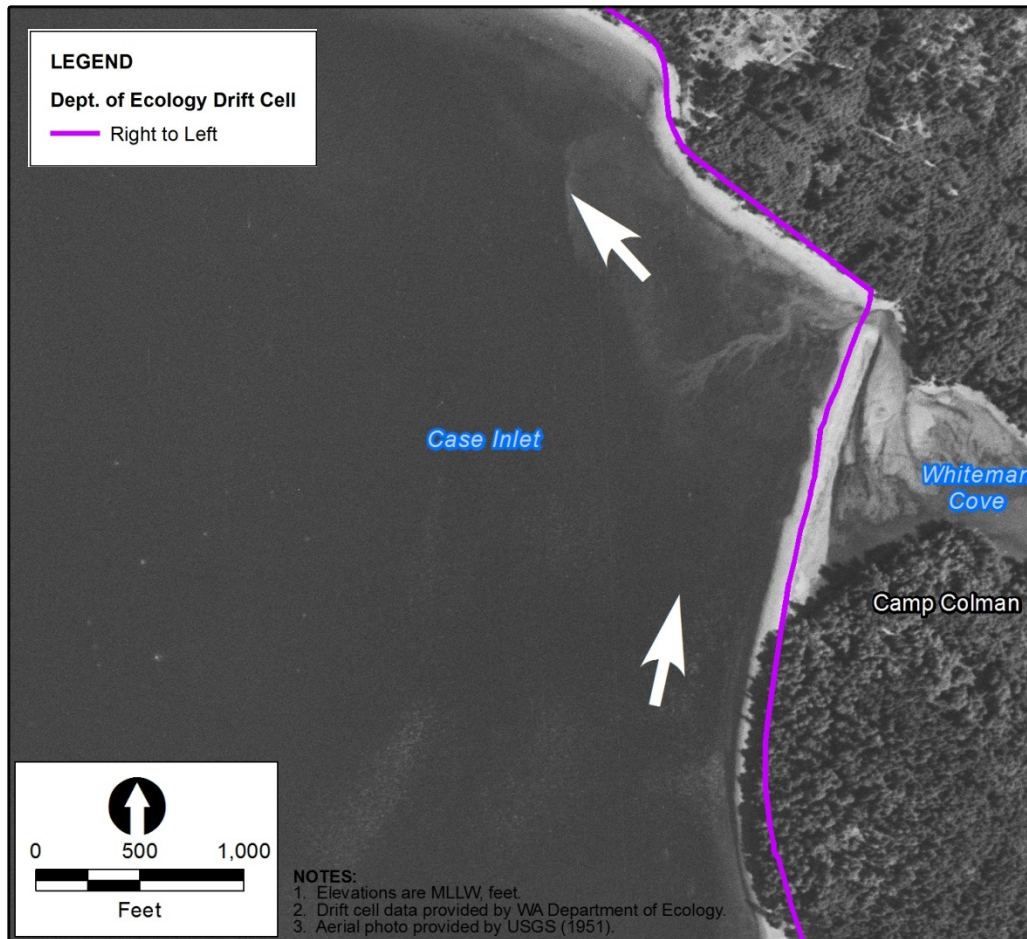
T-Sheet



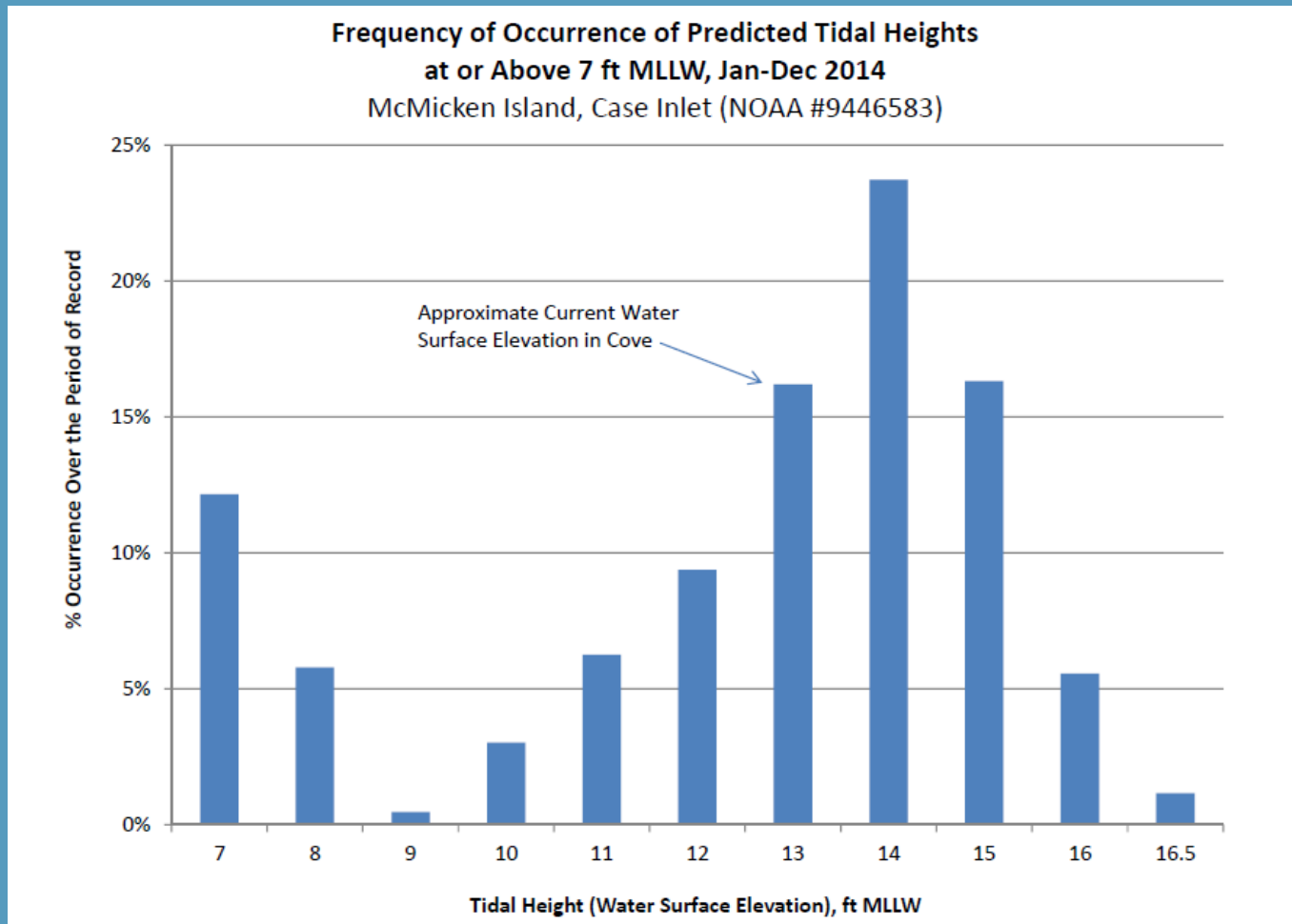
Cove in 1951 (just prior to closure)



Coastal Processes Evaluation



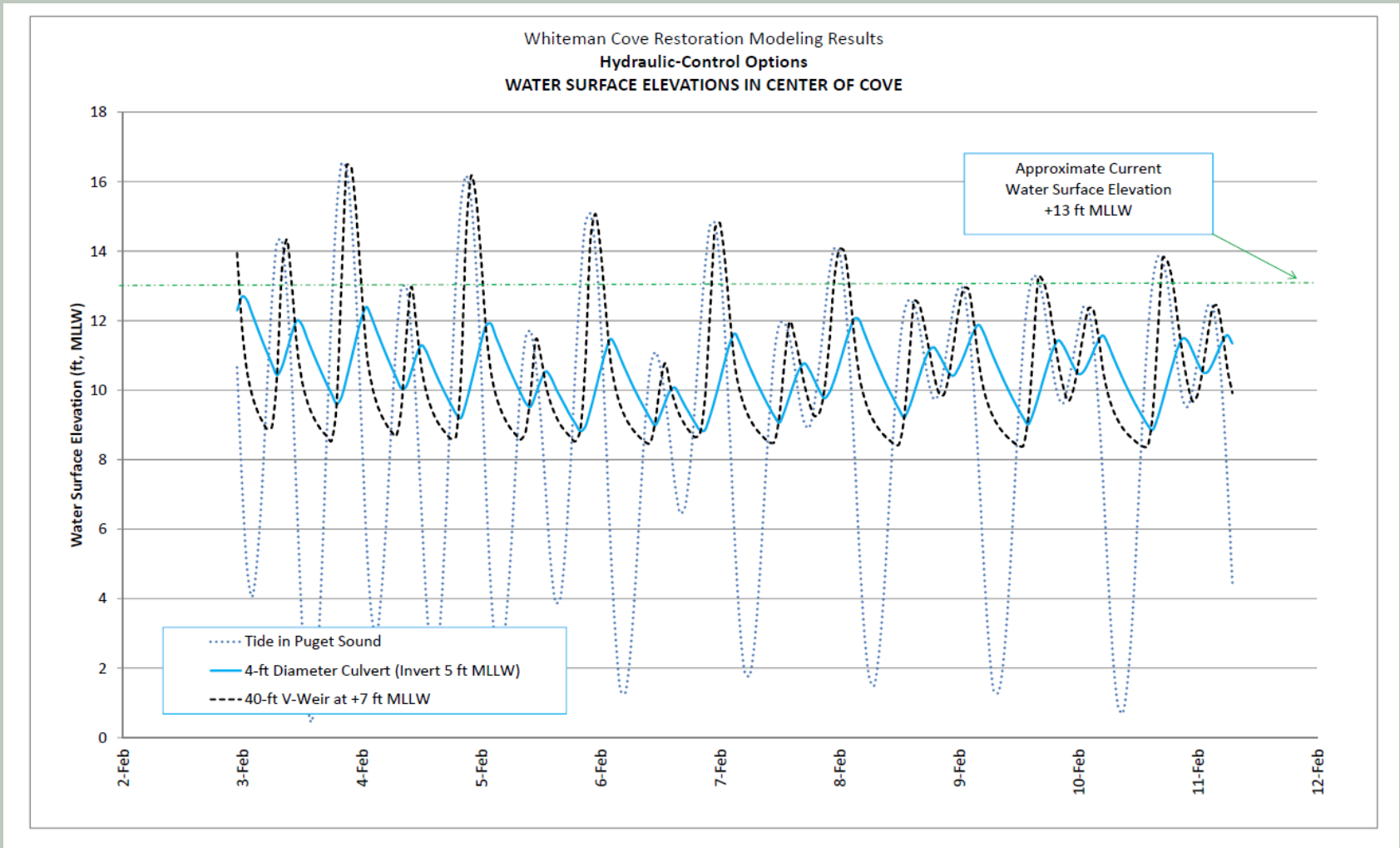
Tidal (Water Level) Statistics



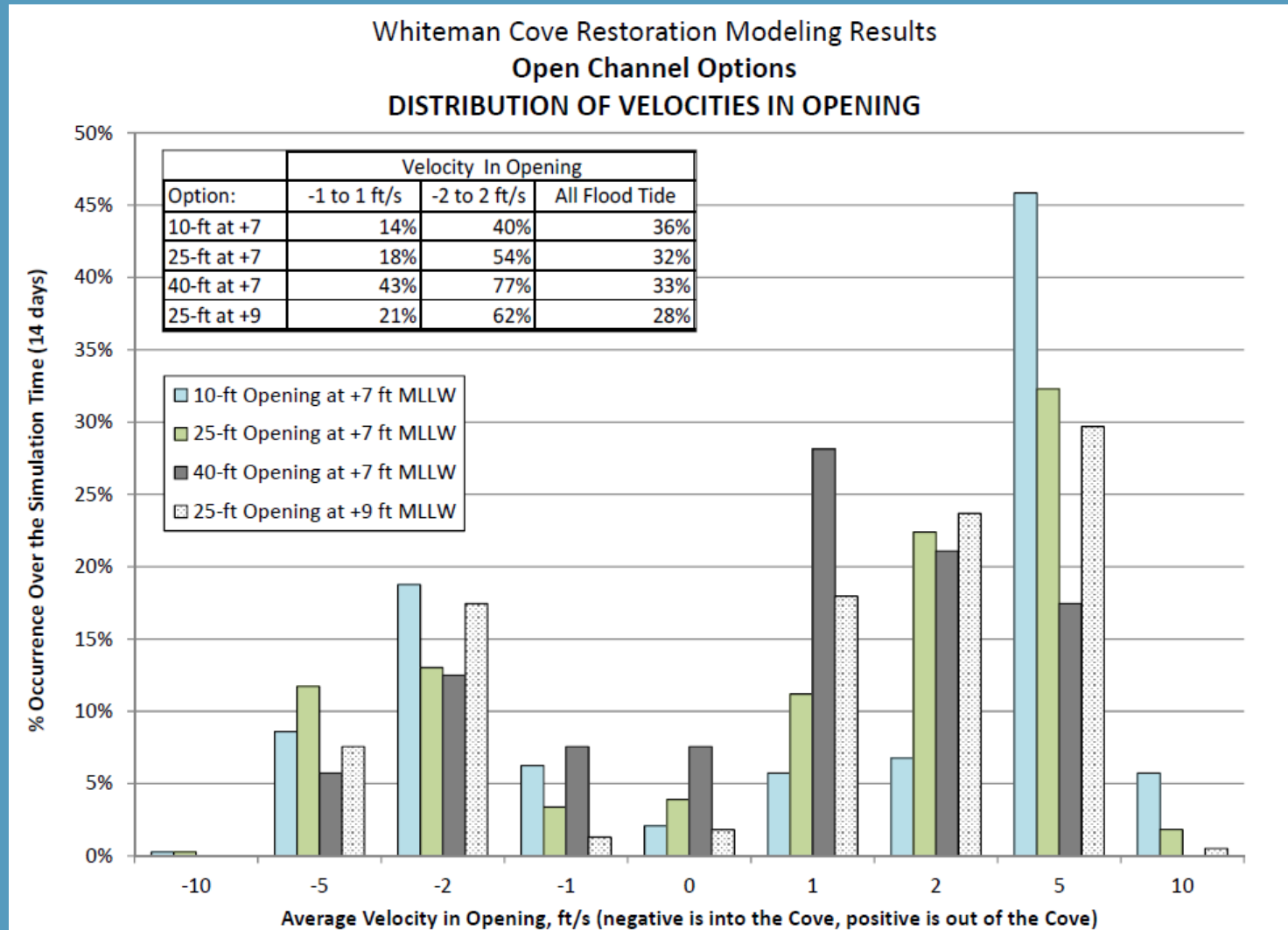
Hydrodynamic Modeling

- 1-D Model (variable tide and inflow conditions)
- Evaluated water surface elevations in the Cove and velocities in the opening/hydraulic structure considered
- Numerous concepts modeled
 - Culverts/Tide Gates
 - Weirs (varies types)
 - Open channels (armored and unarmored)
 - Several different invert/opening elevations modeled for each concept

Examples of Model Results



Examples of Model Results, cont.



Water Quality Data Collection



Requested data/studies/actions:

- Water quality data collection:
 - request from YMCA to review sampling plan and provide comment
 - data collection effort should be developed to study or inform evaluation of fish habitat within the lagoon under a variety of fish passage options
 - collect data during time periods when fish would be using the system
 - salinity and temperature data should be collected along the fringes of the lagoon (i.e. underneath overhanging vegetation) and not only out in the center of the lagoon

Requested data/studies/actions, continued:

- Whiteman Creek, and its relationship to the Cove, should be considered when evaluating the fish habitat in Whiteman Cove
 - the creek has been alternated, including construction of culverts and addition of fill within the channel
 - conduct a stream survey as part of base-line data collection
 - reach out to homeowners connected to the creek to evaluate their interest in the project
- What is the similarity of Whiteman Cove to two nearby systems – Rocky Bay and Vaughn Bay. Do these systems have deep water in them at low tide

Requested data/studies/actions, continued:

- Question about fish survey in Whiteman Cove
 - DNR is not aware of any previous fish survey work being done in Whiteman Cove. This was identified as a data gap
 - baseline data collection should include an evaluation of current habitat in the Cove, including a fish survey
- Quantify value of current habitat versus potential future habitat conditions
- Discuss the project with Seattle Shellfish company

Requested data/studies/actions, continued:

- Develop specific project objectives prior to moving forward with feasibility study and/or development of options
 - have baseline data on hand to inform development objectives
 - Identify specific fish and life cycles that will be addressed with this project
 - define success of the project, how will DNR monitor success

Requested data/studies/actions, continued:

- Suggestion of options to consider – self regulating tide gate
 - this was followed by discussion of challenges to developing tide gate operations that would allow fish passage and retain current water levels due to the relatively high elevations of the bottom of the Cove