A MARITIME RESOURCE SURVEY

For Washington's Saltwater Shores

WASHINGTON DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

This Maritime Resource Survey has been financed in part with Federal funds from the National Park Service, Department of the Interior administered by the Department of Archaeology and Historic Preservation (DAHP) and the State of Washington. However, the contents and opinions do not necessarily reflect the views or policies of the Department of the Interior, DAHP, the State of Washington nor does the mention of trade names or commercial products constitute endorsement or recommendation by the Department of the Interior or DAHP.

This program received Federal funds from the National Park Service. Regulations of the U.S. Department of Interior strictly prohibit unlawful discrimination in departmental Federally Assisted Programs on the basis of race, color, national origin, age, or handicap. Any person who believes he or she has been discriminated against in any program, activity, or facility operated by a recipient of Federal assistance should write to: Director, Equal Opportunity Program, U.S. Department of the Interior, National Park Service, 1849 C Street, NW, Washington, D.C. 20240.

Publishing Data
This report commissioned by the
Washington State Department of Archaeology and Historic Preservation
through funding from a Preserve America grant and prepared by Artifacts Consulting, Inc.
DAHP Grant No. FY11-PA-MARITIME-02 CFDA No. 15-904

Cover Image Data

Image Courtesy of Washington State Archives

Washington State Department of Archaeology and Historic Preservation
Suite 106
1063 South Capitol Way
Olympia, WA 98501

Published June 27, 2011

CONTRIBUTORS

The authors of this report wish to extend our deep gratitude to the many individuals, institutions and groups that made this report possible. Washington State Department of Archaeology and Historic Preservation: Allyson Brooks, Ph.D., Greg Griffith, Rob Whitlam, Ph.D., Russ Holter, Michael Houser, Stephen Mathison, Megan Duvall, Stephenie Kramer, Rick Anderson, Morgan McLemore, and Loren Doolittle. Washington State Historical Society; Washington State Library; Washington State Archives, Mary Hammer; Washington State Parks; Whatcom Museum of History and Art; City of Bellingham, Katie Franks and Jacquelyn Lynch; City of Gig Harbor, Lita Dawn Stanton; City of Anacortes; City of Friday Harbor, Sandy Strehlou; City of Port Townsend, John McDonagh; City of Port Angeles, Derek Beery; Edmonds Historical Museum, Tarin Erickson; Harbor History Museum, Jennifer Kilmer; Center for Wooden Boats, Betsy Davis and Emmett Smith; Schooner Alcyone, Leslie McNish, Sound Experience/Schooner Adventuress, Zach Simonson-Bond; Northwest Seaport, Lake Union; Grays Harbor Historical Seaport, Captain Les Bolton; Bellingham Public Library System, Donna Grasdock; Gig Harbor Boat Shop, Guy Hoppen and John McMillan; Northwest Maritime Center & Wooden Boat Foundation, Jake Beattie and Lenore Maranan-Goldstein; Northwest School of Wooden Boatbuilding; Tacoma Public Library, Northwest Room, Brian Kamens; Pacific Northwest Maritime Heritage Council; Ed Josberger, Thunderbird Fleet #1; Bellingham International Maritime Museum, Mike Granat; Steve Mayo; Janet Oakley; Scott Rohrer; Todd Lord; Foss Waterway Seaport, Tom Cashman; Seattle Yacht Club, Steve Hall and Jon Decker; Don and Shanty Slater; Suldan's Boat Works; Alan Anderson; Bill's Boat House, David Anderson and family; and University of Washington, Special Collections.

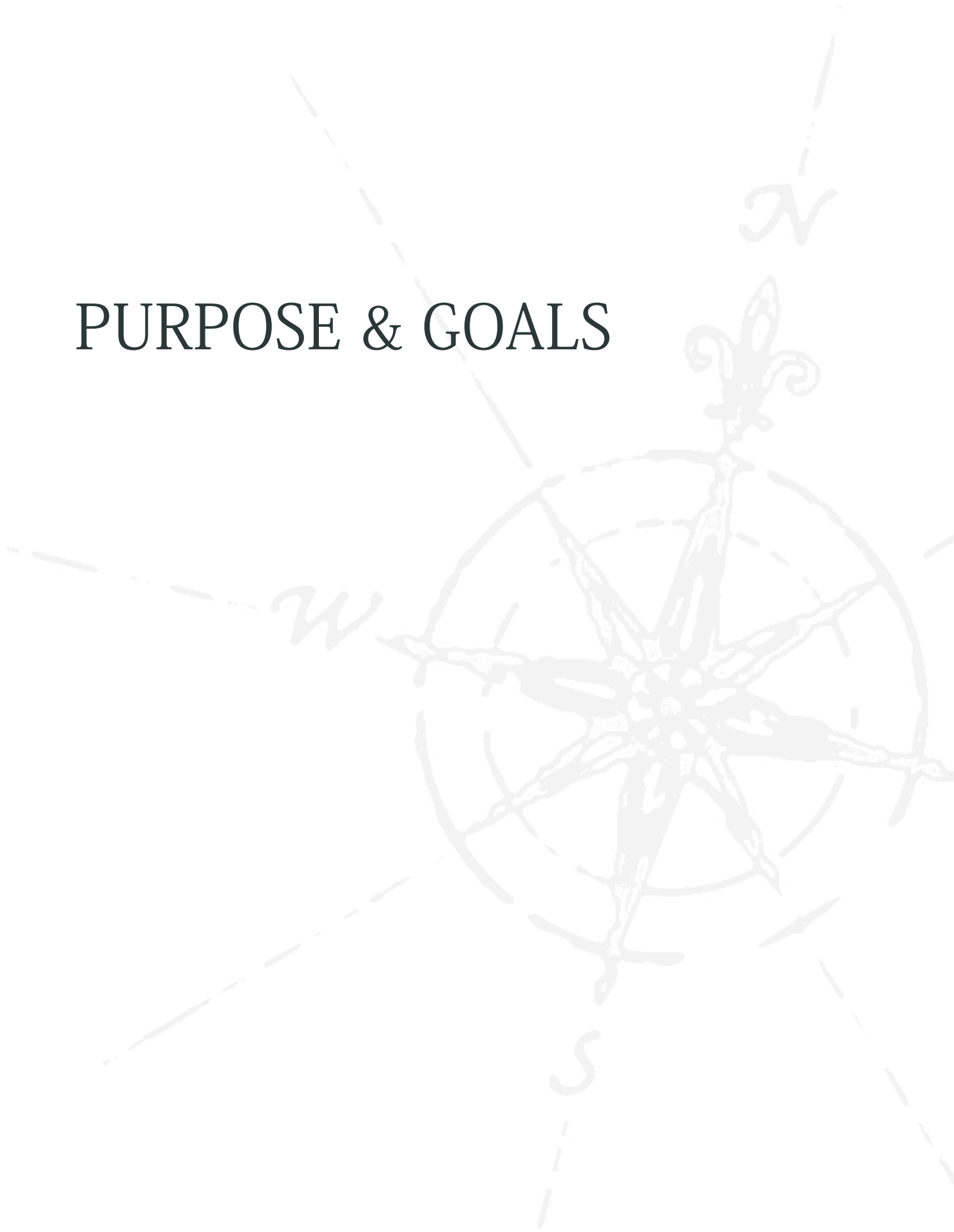
PROJECT TEAM

Project team members consisted predominately of Artifacts Consulting, Inc. staff. Michael Sullivan, principal-in-charge, provided project coordination and vision. Tim McDonald, principal, coordinated the water-based portion of the field work aboard his wooden sailboat *Puffin*, and assisted with the vessel survey and writing. Spencer Howard, partner, provided project management and project team coordination, land-based field work coordination and field work, archival research, writing, GIS mapping, historic map geo-referencing, data entry and review, and public meeting assistance. Mary Thompson assisted with physical needs issues. Susan Johnson, associate, assisted in land and water-based field work, archival research, writing, GIS mapping, historic map geo-referencing, data entry and review, vessel survey coordination, public meeting coordination, and certified local government and historical society outreach. Katie Chase, associate, assisted in land and water-based field work, public meetings, archival research, writing, GIS mapping, historic map geo-referencing, data entry and review, report and community map design and layout, Facebook profile management, and PowerPoint and flier design and preparation. Christy Johnson, associate undertook data entry and review, DAHP blog material preparation, and assisted with public outreach coordination. Niki Stojnic edited context themes for broad audience readability. Dave Pinyerd, Historic Preservation Northwest, converted survey data for import into DAHP's HPI database.

TABLE OF CONTENTS

Overview

PURPOSE & GOALS



The overarching purpose of this project was two-fold: survey and inventory historic properties; and identify physical needs related to surveyed properties.

This survey and inventory addressed only above grade, built environment properties. No survey or evaluation of traditional cultural properties (either Native American or Euro-American) or archaeological resources (such as shipwrecks or ruins) was made. The following goals provided focus and definition as research and field work moved forward from Fall 2010 through Spring 2011.

1. Understand what types and individual properties within the survey area contribute to the state's maritime character. Acknowledging that identification is key to helping communities tell their stories.

2. Identify the level of integrity of surveyed properties to help inform stewardship efforts and critical attrition areas.

3. Identify direct threats to properties and broader integration needs with related governmental policy and planning efforts to provide a tool for the long-term planning efforts of other agencies and departments.

4. Link history and properties with heritage tourism, providing communities with tools to promote their own stories.

5. Begin addressing and providing background to identify mutual interest and benefit areas between marine ecology and built environment preservation in the stewardship of overwater maritime properties.

REPORT ORGANIZATION

Report structure incorporates five chapters. Hyperlinks and cross references used throughout the report are intended to make the digital PDF version as user friendly as possible for a broad audience.

Overview summarizes data from the following four chapters. The section on project boundaries identifies the scope of the surveyed area. The summary of findings section pulls together findings from all four chapters to present them in a single location for ease of reference.

Survey & Inventory comprises the core of this report. Anchored on field work, this data reflects the work of several teams traveling nearly 3,000 miles and over 350 nautical miles to identify maritime related historic properties not previously inventoried and to update previously surveyed maritime related properties as needed. Sections on types and distribution as well as integrity and eligibility bring together the vast geographic distribution of properties.

Physical Assessment delves into the stabilization, community role and interpretive needs of surveyed properties. Physical needs extended beyond just material deterioration concerns to also identify planning issues unique to maritime properties and how these properties contribute to community character. A methodology section describes the steps used to collect and analyze data.

Context Themes comprises the traditional historical context document providing background for sites inventoried. The themes separate the wealth of history into more manageable topics. Each is intended to be readable and accessible to the general public while providing the introductory contextual background sought by a technical audience.

Supplemental Material provides additional information through selected case studies to illustrate issues identified in the physical assessment chapter. Community maps in this section are intended for community and visitor use. They present survey data for a limited number of communities to illustrate how surveys enhance educational and tourism efforts. A complete list of surveyed properties and project bibliography follow.

PROJECT AREA BOUNDARIES

Boundary selection needed to include the full story of exploration, trade, commerce, naval defense, recreation, navigation and life saving, community development and the role of water highways.

The varied parts of the Salish Sea and coastline form a densely interwoven narrative. Much of the difficulty with previous survey efforts has been trying to place in context a small sampling of shoreline and understand the relative significance of properties within that sample area. A broad, comprehensive survey needed to provide the framework for past and future smaller surveys to tie into and compare properties and histories with one another. The history and future of our state's historic maritime properties have been and remain closely dependent upon the tides and natural environment, as those still making a living from marine related activities are quick to point out. This interconnectedness makes the study of the sea and related coastlines as a common unit all the more critical to inform complementary planning activities and policy directions by marine scientists.

Anticipated thematic continuity also exerted a strong role in defining survey area boundaries and accounts for the focal role of the Strait of Juan de Fuca and southernmost terminus role of Grays Harbor. The Salish Sea represents a unique national resource that has given rise to a set of property types dependent upon both its waterways and upland natural resources, in particular timber. The Strait of Juan de Fuca provided the critical navigation link between the Pacific Ocean and the Sea. The outer coastline along the Pacific Ocean extending along the west side of the Olympic Mountains provided an important associated navigation and defense role. Grays Harbor provides the northernmost deep water port along the Washington Coast. The harbor served historically as the southernmost outlet for inland resources (timber) from the Olympic Mountains.

For these reasons, the following boundaries encompass areas having a continuity and comprehensive representation of historic properties associated with Washington State's maritime history. These boundaries extended along Washington's marine shoreline from Grays Harbor along the Pacific Coast up and in to the Salish Sea. Within the Salish Sea project boundaries extended along the south shore of the Strait of Juan de Fuca, down into the Puget Sound and north up to the Canadian border. For clarity this report utilizes the terms Salish Sea and Puget Sound as defined below to address the inland marine waterways. Boundaries extend inland a quarter-mile or within sight of water.

International jurisdictional boundaries established the northernmost survey boundary, at the border with Canada. The Salish Sea and many of the historical activities occurring with the region overlapped this international boundary with great fre-

quency. Future links with Canadian maritime surveys would greatly help inform the broader narrative of events and development.

Field work confirmed the appropriateness of these boundaries. Terms utilized in the project language:

Salish Sea: collective marine waters of Puget Sound, the Strait of Juan de Fuca and the Strait of Georgia as established by the United States Board on Geographic Names in 2009. Prior to 2009 the term Puget Sound was regularly used to refer to this collective body.

Puget Sound: marine waters south of Admiralty Inlet (transition line between Point Wilson on the Olympic Peninsula and Point Partridge on Whidbey Island), Deception Pass (transition line between West Point on Whidbey Island and Deception Island and Rosario Head on Fidalgo Island), and the south end of the Swinomish Channel (connecting Skagit and Padilla bays). Historically the term Puget Sound was used to refer to the collective body known since 2009 as the Salish Sea.

Map 1.1: Shoreline Survey Area

This map illustrates the extent of the project survey area.

PUBLIC PARTICIPATION

Public participation provided an important tool for identifying potential historic properties, in particular vessels.

The outreach plan commenced at the start of field work. Three public meetings, held in Gig Harbor, Port Townsend and Fairhaven, provided surveyors an opportunity to converse with community members. These meetings were coordinated with field work in these areas. The survey process and background were explained at the meetings.

Public notice for these meetings was provided through the Historic Preservation Officer in each community as well as the local library system and historical societies. Staff attended the Port Townsend Wooden Boat Festival, talking with boat owners and identifying potential watercraft for surveying.

Public meetings were held upon completion of the project. Meetings were held in Bellingham, Port Townsend and Gig Harbor. These were coordinated with local maritime festivals to increase potential for attendance.

SUMMARY OF FINDINGS

Findings stem from research and field work. Subsequent report sections expand upon this brief summary meant as an overview.

Integrity level of maritime properties within the survey area remains high. Over 45-percent of the more than 500 surveyed properties are recommended as potentially eligible for listing to the National Register of Historic Places. Properties exhibit a range of historic uses and building types. Main threats to integrity stem from waterfront development pressure and land use changes.

On going stewardship of maritime properties within the survey area will benefit from their interpretive value and community role(s). Of the over 500 properties surveyed, only 5 exhibited immediate conservation needs and just 25 were recommended as priorities for recordation to document their existence before they are lost. The value of understanding the water approach to maritime communities and the contribution historic properties make to the community's visual character can not be understated. Many of the properties recommended as potentially eligible for listing to the National Register of Historic Places afford excellent opportunities for public access and interpretive efforts.

Policy integration will provide an important tool for including maritime historic properties in planning efforts and balancing environmental and preservation needs. In particular state, federal and local government coordination on Shoreline Management Act and Habitat Conservation Plans will contribute preserving historic maritime related activities along our marine shorelines as well as the remarkable natural environment upon which these activities so closely depend.

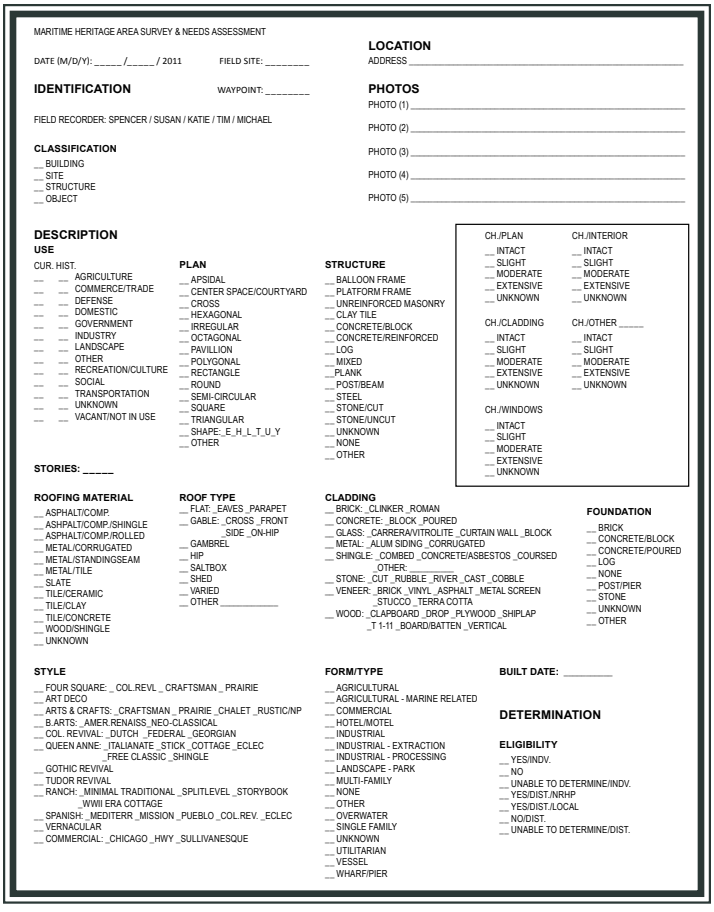
Survey & Inventory

METHODOLOGY

Project methodology consisted of research and field work. Data analysis followed. Public outreach ran concurrent to and following report completion. This survey and inventory addressed only above grade, built environment properties within the survey area. No survey or evaluation of traditional cultural properties (either Native American or Euro-American) or archaeological properties was made. The National Register Bulletin **Guidelines for Local Surveys: A Basis for Preservation Planning** *was consulted in developing survey methodology.*

Archival research informed both the context themes and field work. Researchers worked through regional repositories collecting historic charts, maps, historic photographs and background. Listings of existing NRHP listed and inventoried sites were sorted through to identify those having a maritime connection. Collected data was organized according to the context themes. As researchers worked through the background material, potential field survey sites were noted and plotted in GIS. All charts, maps and historic photographs collected were digitized.

Field work built upon identified sites and properties from the research. All of the field work for this project was done from the public right-of-way. Due to the size of the survey area creating field maps for each section was impractical. Instead GIS mapping provided the best means to sift through survey areas to identify potential properties and areas prior to work in the field. Digitized historic charts and maps, including Sanborn Fire Insurance maps, were geo-referenced. These were then overlaid on seamless parcel data linked to Assessor building data to provide an estimated date of construction. Staff used contemporary aerial images with the above described layers to work along the shoreline identifying potential survey locations. Properties were then marked. Cross referencing these between the state's Historic Property Inventory (HPI) database identified which were already up-to-date and did not need to be surveyed and which had been surveyed but were out of date. Field maps showing the marked sites along with



MARITIME HERITAGE AREA SURVEY & NEEDS ASSESSMENT

DATE (M/D/Y): _____ /_____ / 2011 FIELD SITE: _____

IDENTIFICATION WAYPOINT: _____

FIELD RECORDER: SPENCER / SUSAN / KATIE / TIM / MICHAEL

CLASSIFICATION
__ BUILDING
__ SITE
__ STRUCTURE
__ OBJECT

LOCATION
ADDRESS _____

PHOTOS
PHOTO (1) _____
PHOTO (2) _____
PHOTO (3) _____
PHOTO (4) _____
PHOTO (5) _____

DESCRIPTION

USE
CUR. HIST.
__ __ AGRICULTURE
__ __ COMMERCE/TRADE
__ __ DEFENSE
__ __ DOMESTIC
__ __ GOVERNMENT
__ __ INDUSTRY
__ __ LANDSCAPE
__ __ OTHER
__ __ RECREATION/CULTURE
__ __ SOCIAL
__ __ TRANSPORTATION
__ __ UNKNOWN
__ __ VACANT/NOT IN USE

PLAN
__ APSIDAL
__ CENTER SPACE/COURTYARD
__ CROSS
__ HEXAGONAL
__ IRREGULAR
__ OCTAGONAL
__ PAVILLION
__ POLYGONAL
__ RECTANGLE
__ ROUND
__ SEMI-CIRCULAR
__ SQUARE
__ TRIANGULAR
__ SHAPE: _E_H_L_T_U_Y
__ OTHER

STRUCTURE
__ BALLOON FRAME
__ PLATFORM FRAME
__ UNREINFORCED MASONRY
__ CLAY TILE
__ CONCRETE/BLOCK
__ CONCRETE/REINFORCED
__ LOG
__ MIXED
__ PLANK
__ POST/BEAM
__ STEEL
__ STONE/CUT
__ STONE/UNCUT
__ UNKNOWN
__ NONE
__ OTHER

CH./PLAN
__ INTACT
__ SLIGHT
__ MODERATE
__ EXTENSIVE
__ UNKNOWN

CH./INTERIOR
__ INTACT
__ SLIGHT
__ MODERATE
__ EXTENSIVE
__ UNKNOWN

CH./CLADDING
__ INTACT
__ SLIGHT
__ MODERATE
__ EXTENSIVE
__ UNKNOWN

CH./OTHER _____
__ INTACT
__ SLIGHT
__ MODERATE
__ EXTENSIVE
__ UNKNOWN

CH./WINDOWS
__ INTACT
__ SLIGHT
__ MODERATE
__ EXTENSIVE
__ UNKNOWN

STORIES: _____

ROOFING MATERIAL
__ ASPHALT/COMP.
__ ASHPALT/COMP./SHINGLE
__ ASPHALT/COMP./ROLLED
__ METAL/CORRUGATED
__ METAL/STANDINGSEAM
__ METAL/TILE
__ SLATE
__ TILE/CERAMIC
__ TILE/CLAY
__ TILE/CONCRETE
__ WOOD/SHINGLE
__ UNKNOWN

ROOF TYPE
__ FLAT: _EAVES _PARAPET
__ GABLE: _CROSS _FRONT _SIDE _ON-HIP
__ GAMBREL
__ HIP
__ SALTBOX
__ SHED
__ VARIED
__ OTHER _____

CLADDING
__ BRICK: _CLINKER _ROMAN
__ CONCRETE: _BLOCK _POURED
__ GLASS: _CARRERA/VITROLITE _CURTAIN WALL _BLOCK
__ METAL: _ALUM SIDING _CORRUGATED
__ SHINGLE: _COMBED _CONCRETE/ASBESTOS _COURSED _OTHER: _____
__ STONE: _CUT _RUBBLE _RIVER _CAST _COBBLE
__ VENEER: _BRICK _VINYL _ASPHALT _METAL SCREEN _STUCCO _TERRA COTTA
__ WOOD: _CLAPBOARD _DROP _PLYWOOD _SHIPLAP _T 1-11 _BOARD/BATTEN _VERTICAL

FOUNDATION
__ BRICK
__ CONCRETE/BLOCK
__ CONCRETE/POURED
__ LOG
__ NONE
__ POST/PIER
__ STONE
__ UNKNOWN
__ OTHER

STYLE
__ FOUR SQUARE: _ COL.REVL _ CRAFTSMAN _ PRAIRIE
__ ART DECO
__ ARTS & CRAFTS: _CRAFTSMAN _ PRAIRIE _CHALET _RUSTIC/NP
__ B.ARTS: _AMER.RENAISS_NEO-CLASSICAL
__ COL. REVIVAL: _DUTCH _FEDERAL _GEORGIAN
__ QUEEN ANNE: _ITALIANATE _STICK _COTTAGE _ECLEC _FREE CLASSIC _SHINGLE
__ GOTHIC REVIVAL
__ TUDOR REVIVAL
__ RANCH: _MINIMAL TRADITIONAL _SPLITLEVEL _STORYBOOK _WWII ERA COTTAGE
__ SPANISH: _MEDITERR _MISSION _PUEBLO _COL.REV. _ECLEC
__ VERNACULAR
__ COMMERCIAL: _CHICAGO _HWY _SULLIVANESQUE

FORM/TYPE
__ AGRICULTURAL
__ AGRICULTURAL - MARINE RELATED
__ COMMERCIAL
__ HOTEL/MOTEL
__ INDUSTRIAL
__ INDUSTRIAL - EXTRACTION
__ INDUSTRIAL - PROCESSING
__ LANDSCAPE - PARK
__ MULTI-FAMILY
__ NONE
__ OTHER
__ OVERWATER
__ SINGLE FAMILY
__ UNKNOWN
__ UTILITARIAN
__ VESSEL
__ WHARF/PIER

BUILT DATE: _____

DETERMINATION

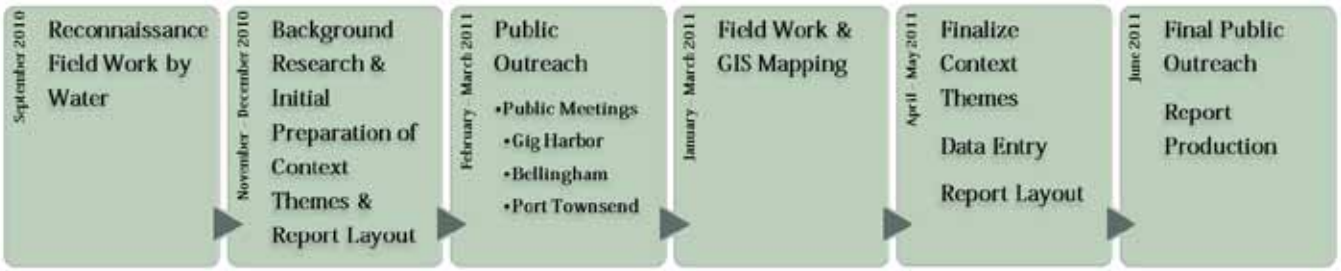
ELIGIBILITY
__ YES/INDV.
__ NO
__ UNABLE TO DETERMINE/INDV.
__ YES/DIST./NRHP
__ YES/DIST./LOCAL
__ NO/DIST.
__ UNABLE TO DETERMINE/DIST.

Field form used in the 2011 Maritime Resource Survey.

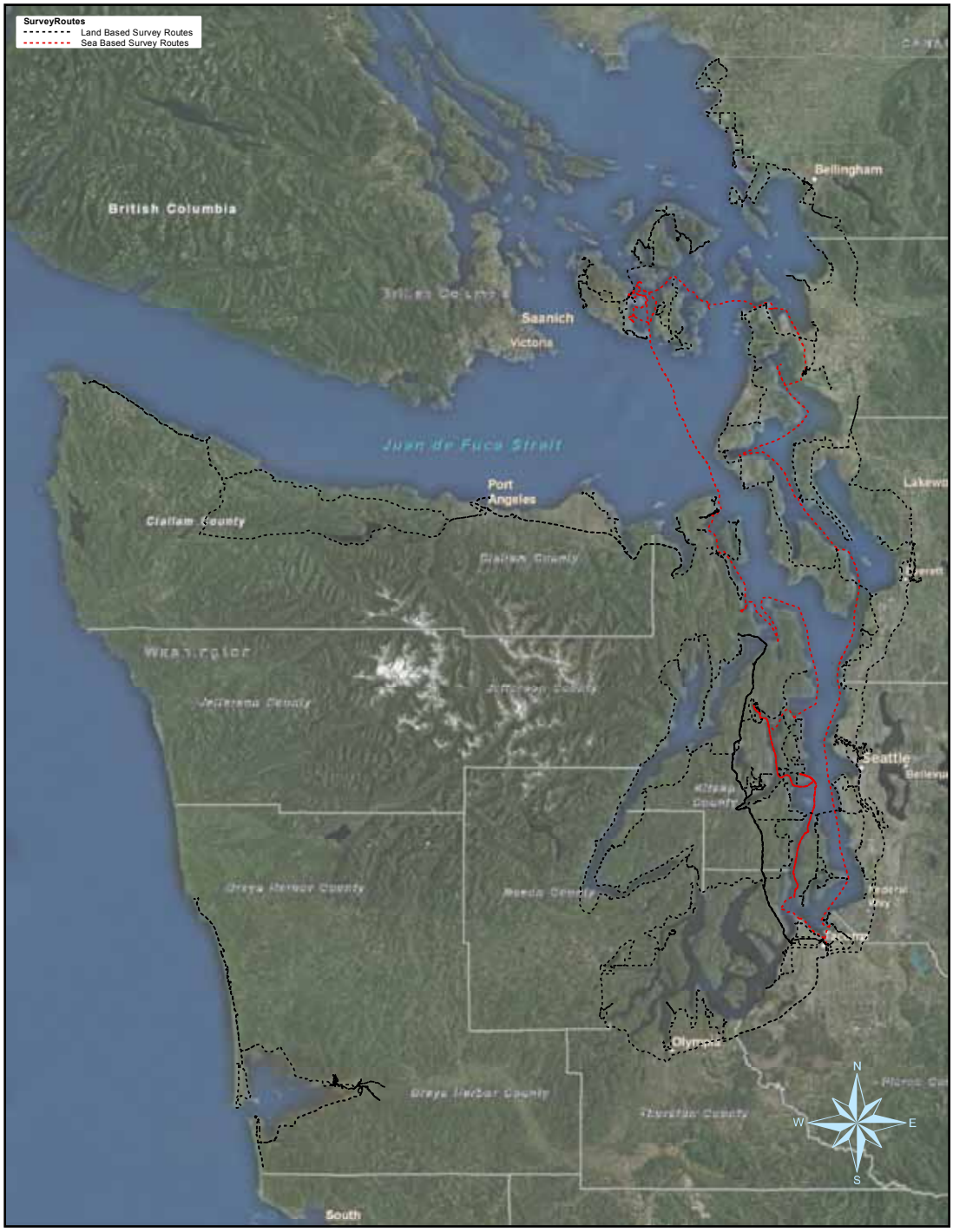
an overlay of local and national historic districts and sites and previously surveyed properties were printed out.

Navigating in the field relied on portable smart phones and handheld GIS devices with preloaded base maps. Staff completed field forms for each property recording architectural and site information. Survey locations were marked in the field with handheld GIS devices. Downloading these points at the end of the day allowed them to be integrated into a single GIS database. Field form data and digital photographs keyed to site locations.

Field data was entered into a database and linked with assessor building data. These were then processed and imported along with digital photographs of each property into DAHP's HPI database. Staff then checked uploaded data and completed photograph captions and adjusted survey point locations for each property.

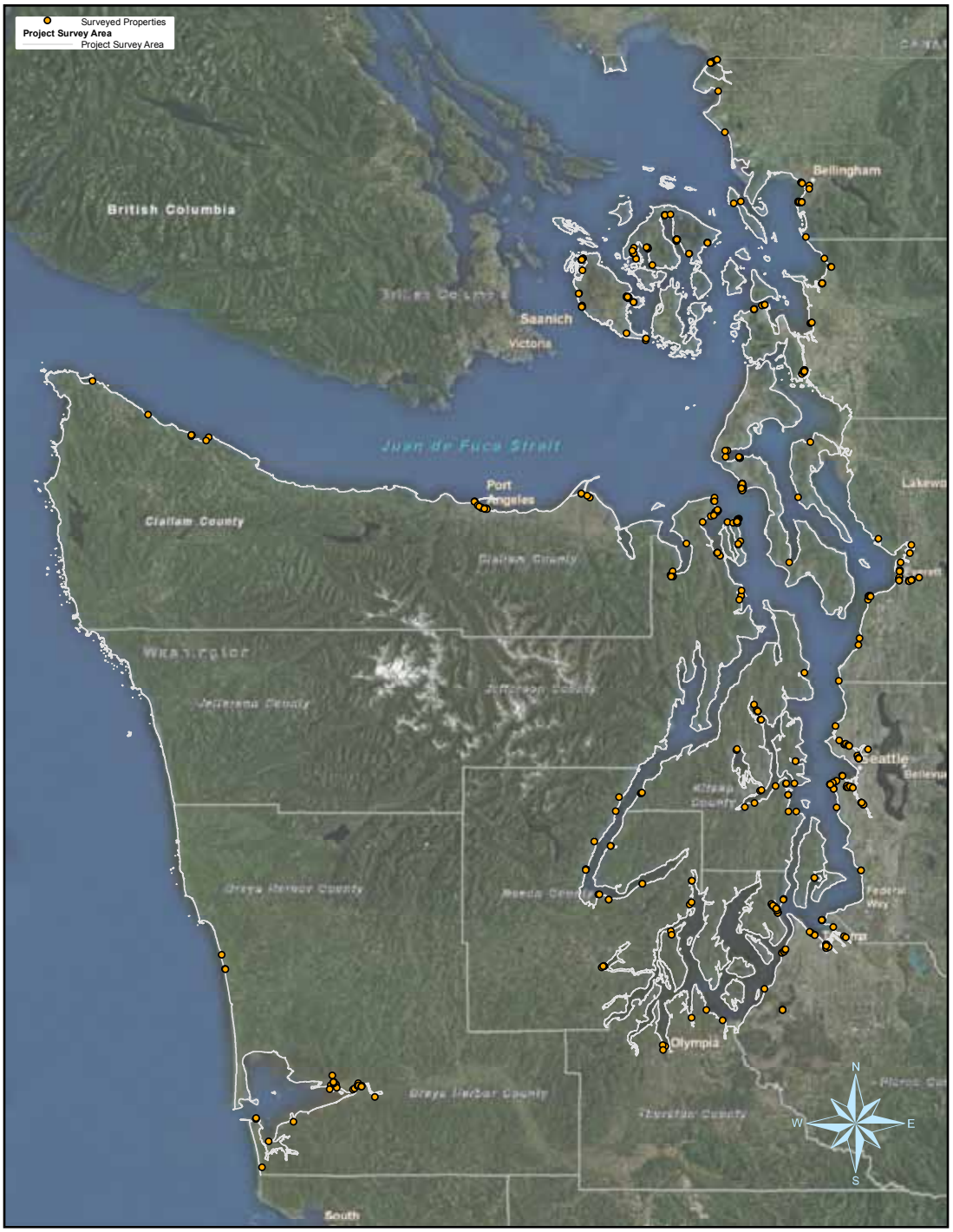


General project timeline used for the Maritime Resource Survey.



Map 2.2: Survey Routes

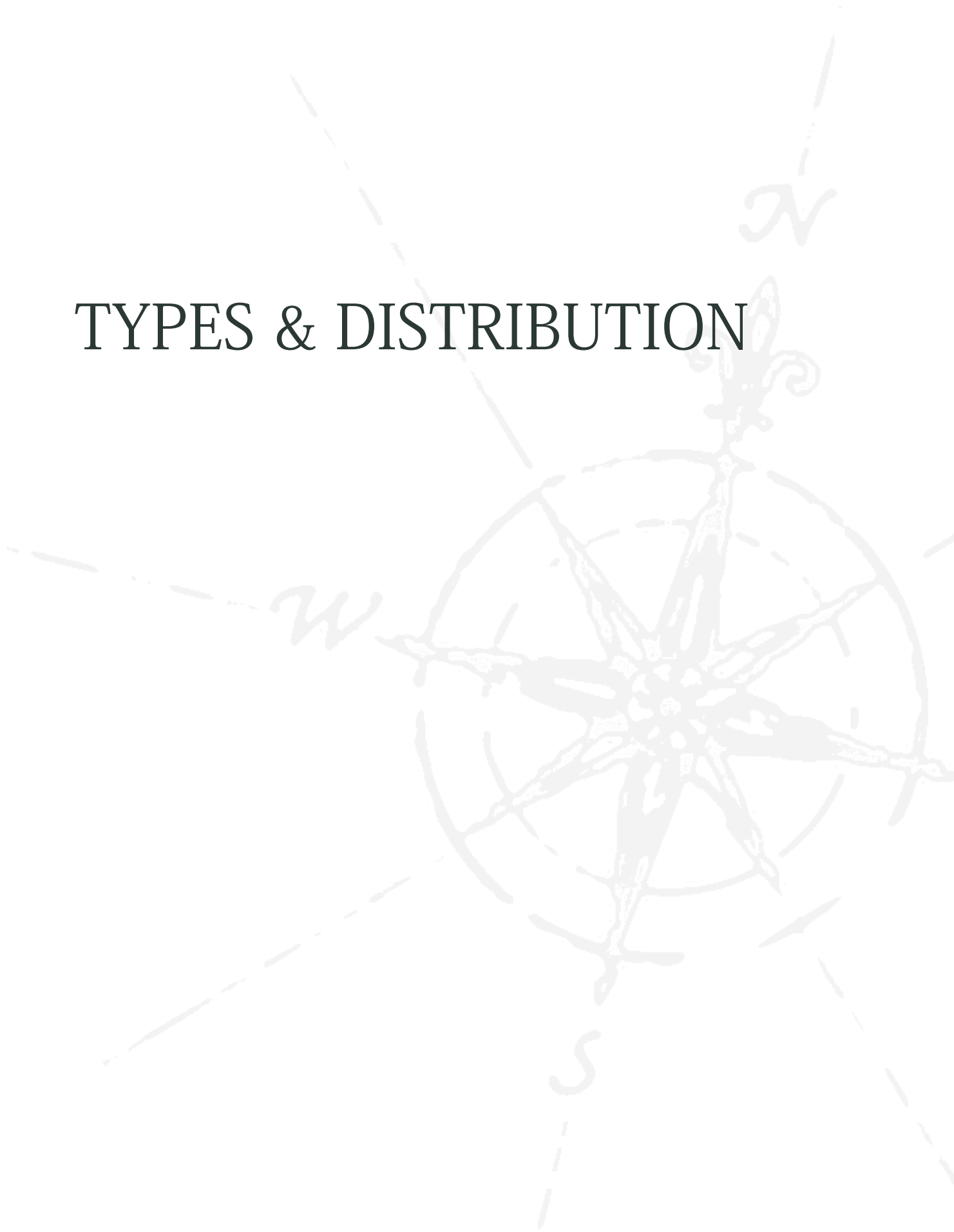
This map illustrates the actual land and sea based survey routes taken by field teams traveling along the shoreline and focusing on built environment properties.

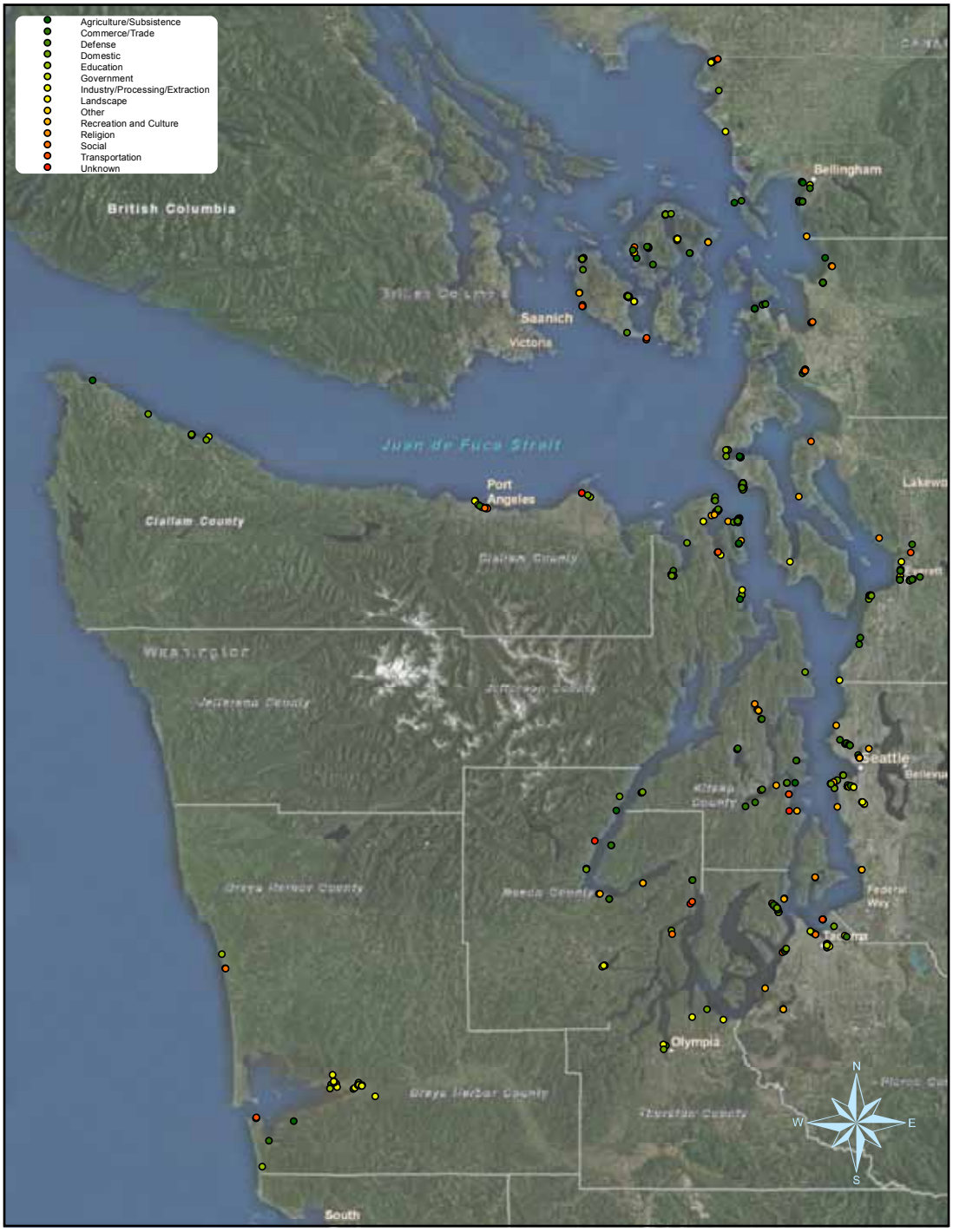


Map 2.3: Survey Sites

This map shows point locations captured in the field for surveyed properties as well as reference photographs.

TYPES & DISTRIBUTION





Map 2.4: Historic Use Distribution

This map illustrates the geographic distribution of surveyed properties according to historic use.

The types and distribution of historic properties within the survey area provides a rich sampling of a distinct aspect of American maritime heritage unique to the Pacific Northwest. Collectively these properties contribute as character-defining features within a nationally distinct cultural landscape.

The project tagged each inventoried property with the particular theme(s) with which it is associated. This information was included in the HPI database as study units. Establishing these within the state's database along with the associated context theme will allow future smaller surveys to continue categorizing resources according to these study units. This builds an ongoing understanding for types and distribution of properties.

The project inventoried over 450 buildings, 24 objects, 39 sites, and 18 structures. The majority date from the 1800s to 1920s. The representation begins to communicate the diversity of property types extant within the survey area. Vessels constituted the majority of objects surveyed. Refer to **"Table 2.7: Vessels Surveyed (Decade of Construction)" on page 74** for count of surveyed vessels by decade.

The **"Table 2.3: Historic Use Type & Distribution (Decade of Construction)" on page 52** provides an overview of how these property types distributed amongst historic use categories. The principal historic use categories were Commerce/Trade, Defense, Domestic, Industry/Processing/Extraction, and some Social and Transportation related properties. Additional historic uses are represented in the sampling, though they were rarer within the survey area. Historic uses tended to follow the expected location patterns associated with geography. Commerce/Trade properties tended towards harbor cities and towns, while Defense properties occupied more remote locations commanding a particular approach or waterway. Industry/Processing/Extraction and Agriculture/Subsistence provided a uniquely broad distribution that often led to the emergence of additional related historic uses. Fishing, timber, and mineral extraction often had specific requirements for locating these uses that depended upon access to water and natural resources. They were often the precursors to larger communities, such as at Port Gamble.

The **"Table 2.2: Context Theme Distribution (Decade of Construction)" on page 51** links these properties according to historic use back to the Context Themes by decade of construction. Again, the early decades of construction had the greatest depth in survey types and representation due to the prevalence of maritime properties from these periods of construction and the importance of recording these property types. Mid-century resources (1950s-60s) representation in the survey sought best examples in terms of architecture or associated history or persons from these two decades. This sampling of surveyed properties illustrates a high capacity of the region to communicate to the public the historical events of each context theme.

Readers of the following context themes can still visit several extant resources for each theme.

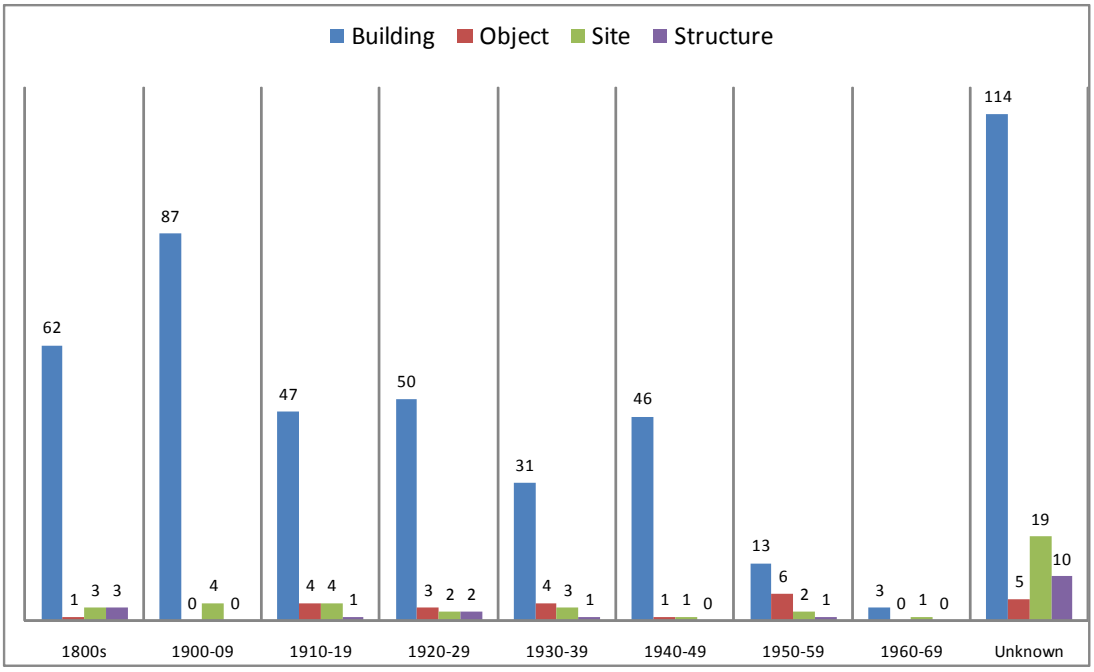


Table 2.1: Classification Type & Distribution (Decade of Construction)

The above table provides an overview of surveyed property classification types and their temporal distribution.

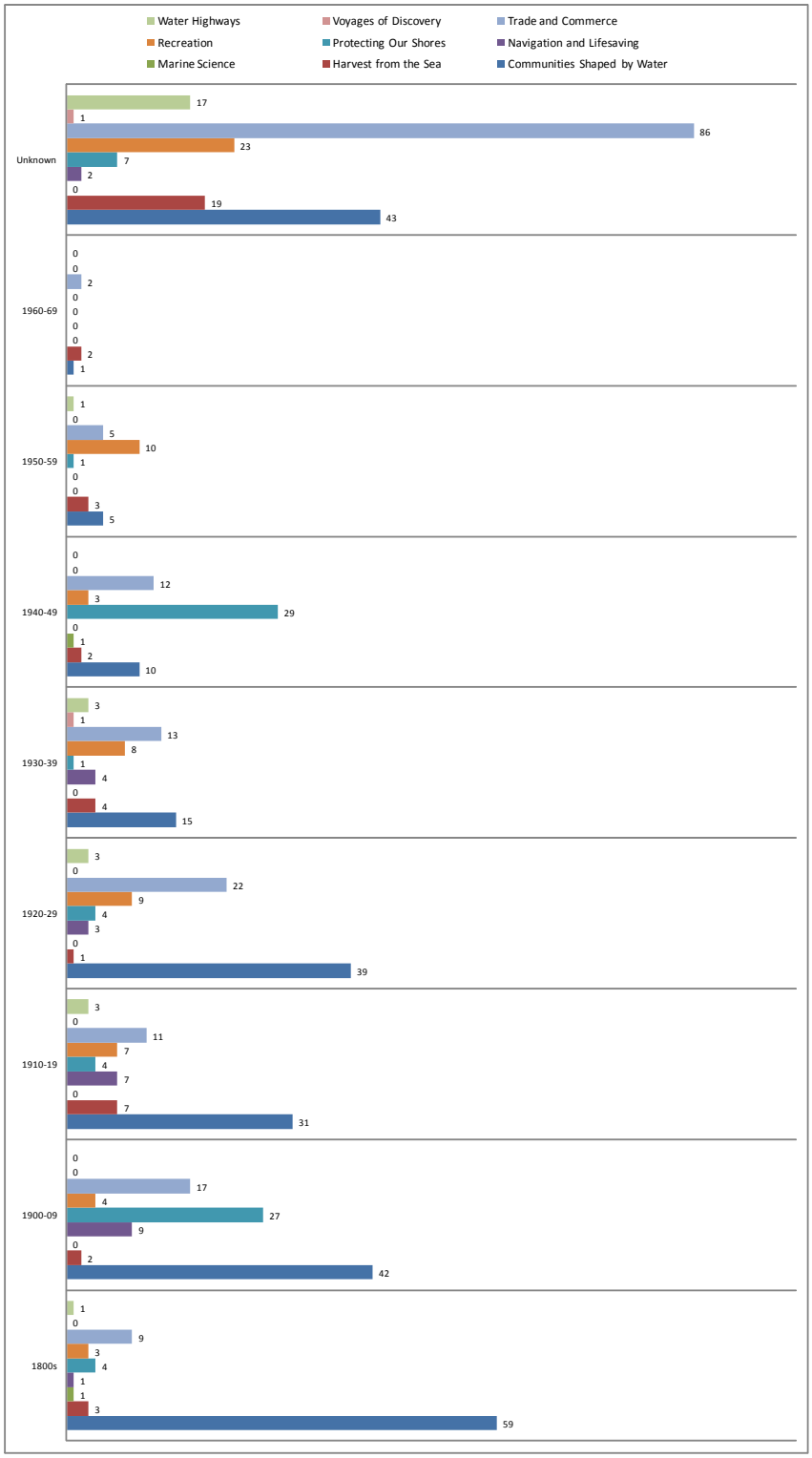


Table 2.2: Context Theme Distribution (Decade of Construction)

The above table illustrates both the distributed sampling of properties surveyed and the thematic representation within each decade of construction.

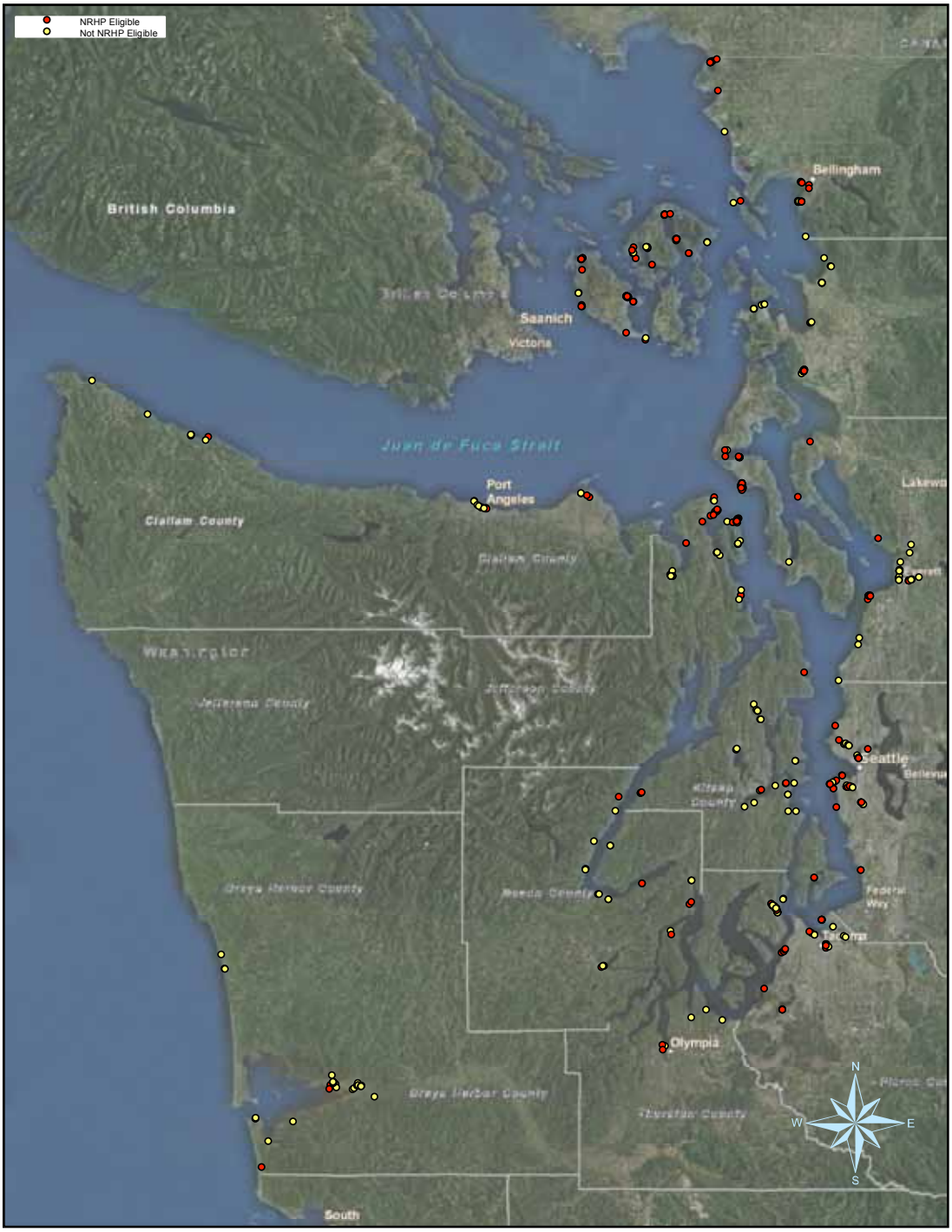
Table 2.3: Historic Use Type & Distribution (Decade of Construction)

	1800s	1900-09	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69	Unknown	Total
Agriculture/Subsistence - Agricultural Outbuilding	0	0	0	0	0	0	0	0	2	2
Agriculture/Subsistence - Fishing Facility or Site	0	1	4	0	3	0	3	2	7	20
Agriculture/Subsistence - Storage	0	2	0	0	0	0	0	0	0	2
Commerce/Trade	0	0	0	0	0	0	0	0	1	1
Commerce/Trade - Business	28	26	12	14	12	13	2	1	48	156
Commerce/Trade - Restaurant	0	0	0	1	0	0	1	0	0	2
Commerce/Trade - Warehouse	1	0	0	1	0	0	0	0	0	2
Defense - Arms Storage	0	1	0	0	0	0	0	0	0	1
Defense - Coast Guard Facility	0	1	0	0	2	0	0	0	0	3
Defense - Military Facility	4	23	0	4	1	29	0	0	7	68
Defense - Naval Facility	0	2	0	0	0	0	1	0	0	3
Domestic - Hotel	4	2	1	2	0	0	2	0	4	15
Domestic - Institutional Housing	1	0	0	0	0	0	0	0	0	1
Domestic - Multiple Family House	0	0	0	3	0	0	0	0	1	4
Domestic - Single Family House	13	13	16	10	7	0	1	0	6	66
Domestic - Secondary Structure	0	0	0	1	0	0	0	0	0	1
Education - School	2	1	2	1	0	0	0	0	1	7
Government - City Hall	1	0	0	0	0	0	0	0	0	1
Government - Courthouse	0	1	0	0	0	0	0	0	0	1
Government - Fire Station	0	0	1	2	1	0	0	0	0	4
Government - Government Office	0	0	0	0	0	0	0	1	0	1
Government - Lookout	0	1	1	0	0	0	0	0	0	2
Government - Public Works	0	0	0	0	0	0	0	0	1	1
Industry/Processing/Extraction - Energy Facility	0	0	0	1	0	0	0	0	1	2
Industry/Processing/Extraction - Manufacturing Facility	0	1	5	5	2	0	3	0	4	20
Industry/Processing/Extraction - Processing Site	3	4	1	2	0	3	0	0	36	49
Landscape - Park	0	0	1	0	0	0	0	0	0	1
Other	0	1	1	1	0	0	0	0	2	5

Table 2.3: Historic Use Type & Distribution (Decade of Construction)

	1800s	1900-09	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69	Unknown	Total
Recreation and Culture - Auditorium	0	0	0	1	1	0	0	0	0	2
Recreation and Culture - Monument/Marker	0	0	0	0	1	0	0	0	0	1
Recreation and Culture - Museum	1	0	0	0	0	0	0	0	0	1
Recreation and Culture - Outdoor Recreation	0	0	2	3	6	3	7	0	10	31
Recreation and Culture - Theater	0	0	1	0	0	0	0	0	0	1
Religion - Church Related Residence	1	3	0	0	0	0	0	0	0	4
Religion - Religious Facility	2	1	0	0	0	0	0	0	1	4
Social - Civic	1	0	0	0	0	0	0	0	0	1
Social - Clubhouse	0	0	0	0	0	0	1	0	0	1
Social - Meeting Hall	6	3	4	3	0	0	0	0	2	18
Transportation - Rail-Related	0	0	1	0	0	0	0	0	1	2
Transportation - Road-Related (vehicular)	0	0	0	0	0	0	1	0	0	1
Transportation - Water-Related	1	4	3	1	3	0	0	0	8	20
Unknown	0	0	0	1	0	0	0	0	5	6
Total:	69	91	56	57	39	48	22	4	148	534

INTEGRITY & ELIGIBILITY



Map 2.5: Listed and Recommended Eligible Properties

This map highlights the locations for all recommended NRHP eligible properties identified in the survey.

Defining the significance of a cultural landscape assesses how a broad range of functions, occurring within the study area, contribute to its sense of place and relate to local, statewide, and national history. The intent is to identify those stories that only maritime properties within the survey area can tell and explain why these stories are unique and important for our collective cultural heritage. The principal evaluative categories include National Register Criteria, National Historic Landmark Criteria, Areas of Significance, and Period of Significance.

Surveyors recorded the extent of changes and alterations to properties surveyed. This data was entered into DAHP's HPI database building an understanding for the integrity level of properties surveyed. Recommendations on determination of potential individual and district National Register of Historic Places eligibility was made for each of the over 500 properties surveyed. For those recommended as potentially eligible, the relevant criteria were cited in the property's significance statement within the HPI database.

The following National Register Bulletins were consulted in evaluating significance:

Guidelines for Evaluating and Documenting Historic Aids to Navigation to the National Register of Historic Places

Guidelines for Evaluating and Nominating Properties That Have Achieved Significance Within the Past Fifty Years

Guidelines for Evaluating and Documenting Rural Historic Landscapes

Guidelines for Evaluating and Nominating Properties Associated with Significant Persons

Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places Note that no evaluation of shipwrecks was undertaken, as these are archaeological resources.

National Register Criteria

The National Register of Historic Places (NRHP) establishes four basic criteria by which to gauge the level of a resource's contribution to our cultural heritage. These criteria dictate that resources:

A: be associated with events that have made a significant contribution to the broad patterns of our history; or

B: be associated with the lives of persons significant in our past; or

C: embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D: are likely to yield information important to prehistory or history.

The functions and components derived from maritime uses and activities within the survey area are significant locally, statewide, and nationally under the first three criteria. This survey and inventory addressed only above grade, built environment properties. No survey or evaluation of traditional cultural properties (either Native American or Euro-American) or archaeological properties was made.

The survey area included an extensive listing of individual and district NRHP properties with maritime associations. These helped to calibrate survey and analysis of the findings. The **"Map 2.5: Listed and Recommended Eligible Properties" on page 56** and **"Table 2.4: Eligibility Potential (Decade of Construction)" on page 64** indicate surveyed properties recommended as potentially eligible for NRHP listing according to decade of construction.

The **"Table 2.6: Eligibility Potential (Historic Use)" on page 66** shows potential NRHP eligibility according to historic use. This is intended to be used in conjunction with discussions of integrity to illustrate the potential for NRHP listings within the survey area.

National Historic Landmark Criteria

Eligibility for National Historic Landmarks (NHL) status is based upon six basic criteria by which a resource can contribute exceptionally to our cultural heritage. To be considered for NHL status a property must first be listed to the NRHP with a national (versus local or state) level of significance. These criteria dictate that resources:

1. Be associated with events that have made a significant contribution to and are identified with, or that outstandingly represent, the broad national patterns

of United States history and from which an understanding and appreciation of those patterns may be gained; or

2. Be associated importantly with the lives of persons nationally significant in the history of the United States; or

3. By representing some great idea or ideal of the American people; or

4. Embody the distinguishing characteristics of an architectural type specimen exceptionally valuable for a study of a period, style, or method of construction, or that represent a significant, distinctive and exceptional entity whose components may lack individual distinction; or

5. Be composed of integral parts of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historical or artistic significance, or outstandingly commemorate or illustrate a way of life or culture; or

6. Have yielded or may be likely to yield information of major scientific importance by revealing new cultures, or by shedding light upon periods of occupation over large areas of the United States. Such sites are those which have yielded, or which may be reasonably expected to yield, data affecting theories, concepts and ideas to a major degree.

The survey area included the nation's first historical reserve, **Ebey's Landing National Historical Reserve**. Listed in 1978, this reserve focuses on rural working landscapes and communities, of which several communities have strong maritime associations.

Individually listed NHLs within the survey area:

Adventuress (Schooner), listed in 1989

American and English Camps on San Juan Island, listed in 1961

Arthur Foss (Tugboat), listed in 1989

Duwamish (Fireboat), listed in 1989

Fireboat No. 1 (Fireboat), listed in 1989

Fort Nisqually Granary & Factor's House, listed in 1970

Fort Worden, listed in 1976

Lightship No. 83 *Relief*, listed in 1989

Port Gamble Historic District, listed in 1966

Port Townsend, listed in 1977

Puget Sound Naval Shipyard, listed in 1992

Virginia V (Steamer), listed in 1992

W. T. Preston (Snagboat), listed in 1989

No potential NHL sites were identified as part of this survey and inventory.

Areas of Significance

Areas of significance are defined by the NRHP as the "aspect of history in which a··· property, through use, occupation, physical character, or association, influenced the development or identity of its community or region." For properties within the survey area the majority of the NRHP areas of significance are represented:

Agriculture

Architecture

Art

Commerce

Communications

Community Planning and Development

Conservation

Education

Engineering

Entertainment/Recreation

Ethnic Heritage

Exploration/Settlement

Health/Medicine

Industry

Invention

Landscape Architecture

Law

Literature

Maritime History

Military

Politics/Government

Religion

Science

Social History

Transportation

Period of Significance

The period of significance defined by the NRHP is "the span of time when a property was associated with important events, activities, persons, cultural groups, and land uses or attained important physical qualities or characteristics." These periods can include one or more isolated events, a series, or continuity of activities. Due to the breadth and scope of the survey, no single period of significance could be defined.

Integrity

Merriam-Webster's dictionary gives one definition of integrity as "the quality or state of being complete or undivided." This definition applies to historic properties and addresses the degree to which components tell a story and provide evidence of a site's processes and layers of historic activities. The NRHP measures integrity by seven criteria: location, design, setting, materials, workmanship, feeling, and association.

Location: refers to the place where the historic property was constructed or the place where the historic event occurred. Exceptions to this can be buildings moved during the period of significance.

Design: involves the components of the historic property that create its form, plan, space, structure, and style. These elements can include organization of space, proportion, scale, the placement and layout of circulation networks, clusters, land uses and activities, water systems, buildings, structures, and small-scale elements.

Setting: encompasses the physical environment of a historic property. The setting can be either natural or manmade, such as topography, vegetation, fences or paths. The setting is not confined to the exact boundaries of the property, but also includes adjoining property that may serve as its broader context.

Materials: extends not only to the typical items such as building materials, but also to the physical material of a property related to land uses and activities.

Workmanship: speaks to the manner in which people build the functional and decorative elements of their environment.

Feeling: represents those intangible experiences characterizing a historic property's identity generated by its physical components.

Association: represents those connections between a historic property's physical components and the processes associated with its period of significance.

The **"Table 2.5: Integrity Levels" on page 65** illustrates the main integrity level categories recorded by field surveyors. These consist of changes to cladding, plan and windows. The degree of alteration to these categories was assessed from the public right-of-way; however most properties could be substantially viewed from the public right-of-way. For those where elements not visible, they are noted as unknown. Overall, surveyed properties exhibited predominately intact plans, cladding and windows.

Setting and context, though not quantifiable on a survey form, exhibited the greatest level of alterations. The shoreline remains an area of intense activity. Sailing along the waterways during the water-based survey provided an unparalleled opportunity to observe shoreline changes. Residential development has had the largest impact. Along rural areas residences would be built directly or slightly back from the water's edge. The overwhelming majority of these residences dated from the 1970s on. Within urban areas, residential condominium development contributes to displacement of traditional maritime activities. There remain many notable stretches of waterways that are largely undeveloped and communities that have worked hard to maintain their traditional maritime character.

Changes and Threats to Integrity

Changes and threats to integrity stem from a variety of internal and external factors. The following list conveys some of the most pressing concerns identified by field teams.

Development pressures encroaching upon marine shorelines. Shorelines historically have been a zone of high activity and development. They have provided an important area of growth for communities, which in turn shaped the overall character of Washington's maritime history. Change and development continue to add to this multi-layered story. The key becomes how development interests approach existing properties along the shoreline. Existing properties provide a stabilizing presence along the shoreline and an important economic value for communities in terms of

adaptive re-use and heritage tourism. Many of the changes observed from the last several decades have opted to uniformly remove existing properties from the shoreline and have undertaken new development without or with only minimal design deference to historic precedents (both extant and former). Managing change along the shoreline will be an ongoing issue for communities.

Policy conflicts related to environmental regulations. Shorelines fall under several jurisdictions and often have a dense overlay of land owners and lessees. Environmental policy exerts an important role in guiding changes and planning along shorelines. How preservation interests integrate into environmental planning becomes a key issue. The physical needs chapter of this report under the Shoreline Management Act section sought to help align preservation and environmental interests by translating preservation categories into environmental categories. Once translated, we realized many interests converge and provide mutual benefit to both marine ecology and public education and interpretive use of the shoreline. Managing the integration of these two datasets in environmental planning will be an ongoing issue for communities, as well as county, state and federal agencies.

Development pressures displacing traditional maritime activities. Residential, retail, and office space development often seeks the views and setting of waterfront locations formerly occupied by traditional maritime activities; fish processing centers do not make the ideal neighbor for residential developments. These new uses often displace the historic maritime uses and bring a host of changes to character-defining waterfront elements such as wharfs and dredged shipping channels. Relocation of historic maritime uses can prove difficult economically and with regards to what is allowed through permitting and zoning. Often these historic maritime use areas also come under pressure for redevelopment to a natural environment prompting removal of historic properties and artificial natural waterfront development that departs from what historically were often mud tidal flats at these commercial and industrial areas. Finding a balance to accommodate new and changing uses while not displacing historic uses and improving the natural environment will become an ever more critical issue as the value of both land and environmental quality rise.

Material needs for overwater preservation. Historic materials such as old growth Douglas fir provide an important resource for helping to enable preservation of historic over-water properties while meeting environmental standards. These high exposure locations benefit from the durability of untreated old growth timbers.

Setting and context of the waterfront exerts a profound visual influence on the region's marine waterways. Often this character is only visible from the water. Driving along shoreline roads, the trees or private property separate land based travelers from the waterways. Sailing along the waterways provides the unique sense of how these waterways were historically used and the character of waterfront communities. This is an experience that goes unnoticed to the majority of the

state's population and needs to be communicated to underscore the importance of public involvement in waterfront development.

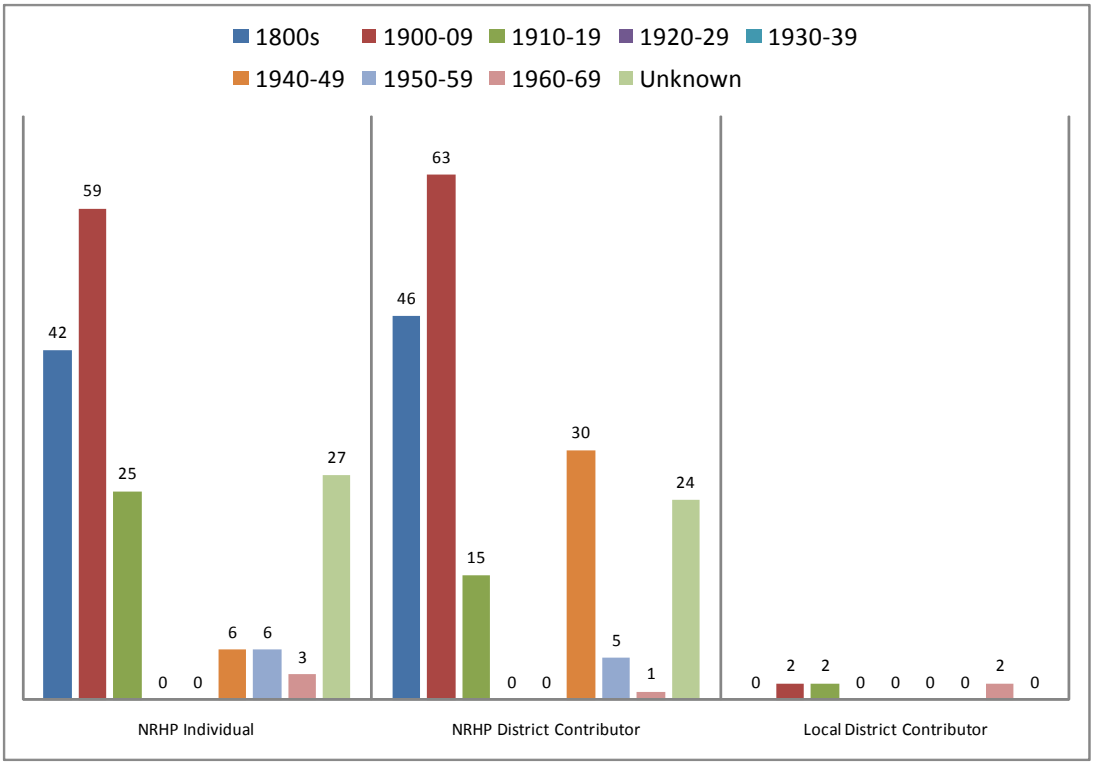


Table 2.4: Eligibility Potential (Decade of Construction)

The above table illustrates the breakdown of surveyed properties by decade of the number of potentially eligible properties.

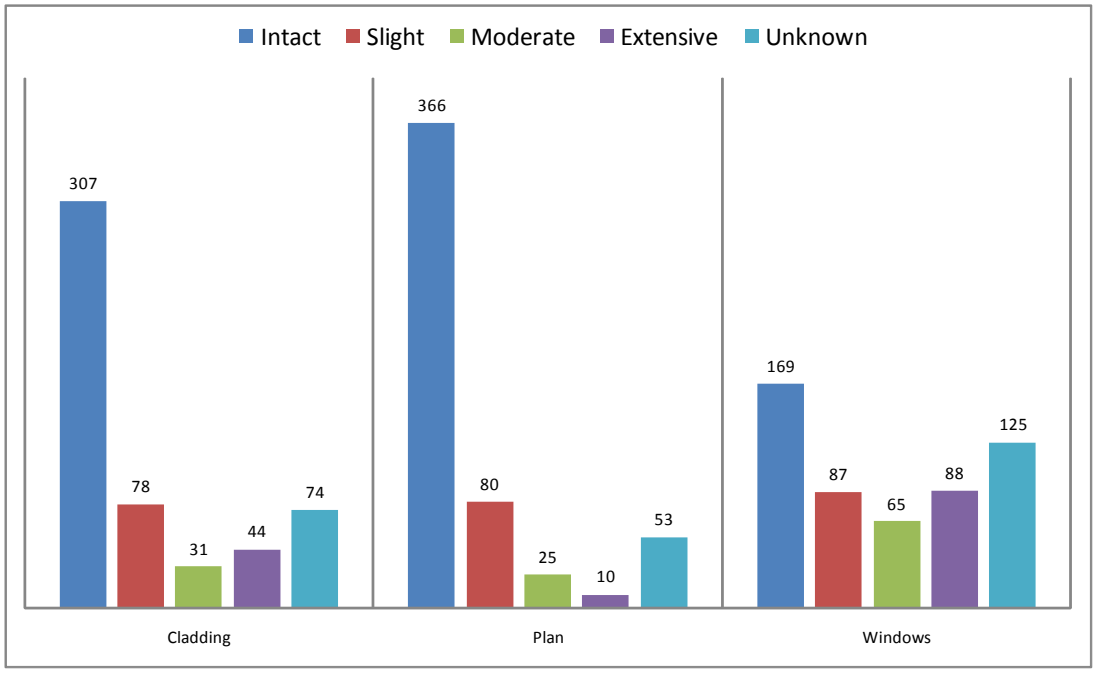


Table 2.5: Integrity Levels

The above table illustrates the overall intact state of the key publicly visible features. Building interiors were not accessible for evaluation.

Table 2.6: Eligibility Potential (Historic Use)

	NRHP Individual	NRHP District Contributor	Local District Contributor
Agriculture/Subsistence - Agricultural Outbuilding	1	1	0
Agriculture/Subsistence - Fishing Facility or Site	5	2	3
Agriculture/Subsistence - Storage	1	1	0
Commerce/Trade	1	0	0
Commerce/Trade - Business	49	51	1
Commerce/Trade - Restaurant	0	0	0
Commerce/Trade - Warehouse	0	1	0
Defense - Arms Storage	1	1	0
Defense - Coast Guard Facility	2	3	0
Defense - Military Facility	26	67	0
Defense - Naval Facility	3	2	0
Domestic - Hotel	8	5	0
Domestic - Institutional Housing	1	1	0
Domestic - Multiple Family House	4	1	0
Domestic - Single Family House	32	22	1
Domestic - Secondary Structure	0	1	0
Education - School	5	0	0
Government - City Hall	1	1	0
Government - Courthouse	1	1	0
Government - Fire Station	2	2	0
Government - Government Office	1	1	0
Government - Lookout	2	2	0
Government - Public Works	0	0	0
Industry/Processing/Extraction - Energy Facility	2	2	0
Industry/Processing/Extraction - Manufacturing Facility	8	8	3
Industry/Processing/Extraction - Processing Site	10	11	0
Landscape - Park	1	1	0
Other	2	3	0
Recreation and Culture - Auditorium	2	2	0
Recreation and Culture - Monument/Marker	0	0	0
Recreation and Culture - Museum	0	0	0
Recreation and Culture - Outdoor Recreation	12	7	0
Recreation and Culture - Theater	0	0	0

Table 2.6: Eligibility Potential (Historic Use)

	NRHP Individual	NRHP District Contributor	Local District Contributor
Religion - Church Related Residence	2	1	0
Religion - Religious Facility	3	0	0
Social - Civic	0	0	0
Social - Clubhouse	0	0	0
Social - Meeting Hall	7	8	0
Transportation - Rail-Related	1	1	0
Transportation - Road-Related (vehicular)	1	0	0
Transportation - Water-Related	10	9	0
Unknown	1	0	0
Total:	208	219	8

WASHINGTON STATE HERITAGE WATERCRAFT PROGRAM

Image of *Adventuress* in Elliot Bay with Seattle skyline in background. Photo by Zach Simonson-Bond, Sound Experience.

The diversity of historic watercraft operating in the state and their various physical needs evokes a natural comparison with the state's voluntary Heritage Barn Program. This section is intended to provide a foundation for informing decision-making relative to the potential for a similar voluntary Heritage Watercraft Program. Watercraft as a term refers to boats and ships collectively.

The maritime world has a vocabulary all its own, and this section will hopefully serve as a resource for understanding some of the most common terms related to the watercraft associated with Washington State. It also gives an overview of types, their many possible aspects of significance, and some of the ways watercraft are described and identified. This is not an exhaustive dictionary or classification; rather, it is a foundation to augment existing works and help guide discussion as a precursor to imagining a voluntary register of heritage watercraft for the state. Thus, historic watercraft built, used, or designed in Washington are the primary focus, and some specific examples are given anecdotally. For more information on historic watercraft in Washington, there are many maritime related organizations and museums in the region, some related to specific boat types.

Describing Historic Watercraft

The majority of historic watercraft are described by how they are powered; paddle, oar, sail or internal combustion engine. They are further defined by their intended use or function. There are additional descriptions that help define them within each of these four broad categories: hull shape, rig, type of construction, and materials.

Pleasure boating in the Pacific Northwest has a long history and represents a large functional category. There is arguably greater innovation in the design and construction of pleasure watercraft than other types because of economy of scale.

Commercial watercraft is another functional category, and this group covers some of the smallest skiffs used for fishing up to and including the largest watercraft, such as container ships. However, the focus of this document is on historic watercraft, so large modern cargo watercraft, such as container ships, bulk carriers and RORO (Roll-On/Roll-Off) ships are not covered in this document. Military watercraft, such as submarines or aircraft carriers, are also not covered in this document, but one military watercraft was included in the Washington Maritime Resource Survey.[1] Additionally, two lifesaving watercraft were included in the survey, specifically the

[1] The *USS Turner Joy*, a retired Naval Destroyer, was built in Seattle and launched in 1958. She is now open to the public as the **USS Turner Joy (DD-951) Naval Destroyer Museum Ship** in Bremerton.

Duwamish Fireboat and the Tacoma *Fireboat No. 1*;[2] however, there are very few extant watercraft in this category. Fireboats are addressed briefly in this document but also in more detail in **"Navigation & Lifesaving" on page 271**.

Hierarchy of Importance

What qualifies a watercraft as a heritage resource for Washington?

Watercraft are unique resource types as they are generally mobile (not tied to one location). Furthermore, watercraft may change use, and therefore experience major alterations, over time. The criteria for evaluating historic significance for buildings and landscapes may not apply evenly to watercraft. To that end, below are some questions for discussion prior to defining a hierarchy of importance among Washington's heritage watercraft.

Image of *Pirate*, taken by Neil Rabinowitz. Image courtesy of the Center for Wooden Boats.

Since watercraft may constantly move around, are those watercraft designed, built, owned or used outside of Washington State deserving of the same status as watercraft designed, built, owned or used within Washington's waters?

Should watercraft that have a long history in Washington State be accorded greater status than other historic watercraft that were designed, built or used elsewhere but are now located here?

For those watercraft not built in Washington, how many years must the watercraft have been based here before being considered a heritage watercraft for Washington?

What are the criteria for determining which watercraft can be classified as heritage watercraft for Washington, and how should such vessels be prioritized for documentation/recordation purposes?

The following points delineate suggested areas for assessing the level of significance of a watercraft to Washington State's maritime history. These values stem from our understanding of watercraft and through field experience surveying watercraft as part of the Washington Maritime Resources Survey. The list is not prioritized. A watercraft could contribute to the state's maritime history under one or more categories.

[2] The first is permanently on display on Lake Union at the Northwest Seaport; the Tacoma *Fireboat No. 1* is on permanent display along the Ruston Waterfront in Tacoma. Both the ***Duwamish*** and ***Fireboat No. 1*** are listed on the National Register of Historic Places as National Historic Landmarks (NHLs). The historic lightship *Swiftsure* is also moored at Northwest Seaport.

1. **Origin.**

   a. Did the designer live/work in Washington, or in the Pacific Northwest in general?

   b. Was the watercraft designed elsewhere but built in Washington?

   c. Who built the watercraft? The builder of the watercraft is often as important as the designer and should be considered when determining the level of significance.

   d. Was the watercraft built in Washington or out of state or out of this country?

2. **Current location (per registration).** Watercraft that were designed and built elsewhere but have been based in Washington for a number of years, thus contributing to the state's watercraft history.

3. **Design significance.** What role did the design have on successive watercraft or the evolution of a type? Consider how watercraft within various use categories changed in response to technological advances, shifts in user needs, and the rise of new uses. For example, the Thunderbird 1 was designed in response to the desire to make sailing more accessible and affordable while making use of new materials (plywood in particular). This new, build-it-yourself sailboat became the prototype for a new generation of sailing enthusiasts and was constructed in garages and backyards across the country.

4. **Type and/or quality of construction.** Address innovations in construction methods, quality of materials employed, and other related physical characteristics of the watercraft which contribute to the significance.

5. **Ownership or association.** Is the watercraft associated with individuals, groups or companies who have contributed to Washington's maritime history? Consider such aspects as who commissioned the design, the chain of ownership, any significant users (captains or crew members, perhaps), and any other important figures in the watercraft's story.

6. **Integrity of materials.** Many watercraft have been repaired over time, either after periods of neglect or from normal wear and tear. Commercial watercraft in particular often face damaging weather exposure due to their constant use, but regular use and maintenance has kept many historic working boats afloat. It is common for hulls, rigging, decking, fasteners and other parts to require replacement over time. Factors to consider under this section are:

   a. Have repairs been made in-kind? If not, how available/affordable are the original materials for repairs and have changes over time been in response to new uses and thus reflect layers of the watercraft's history?

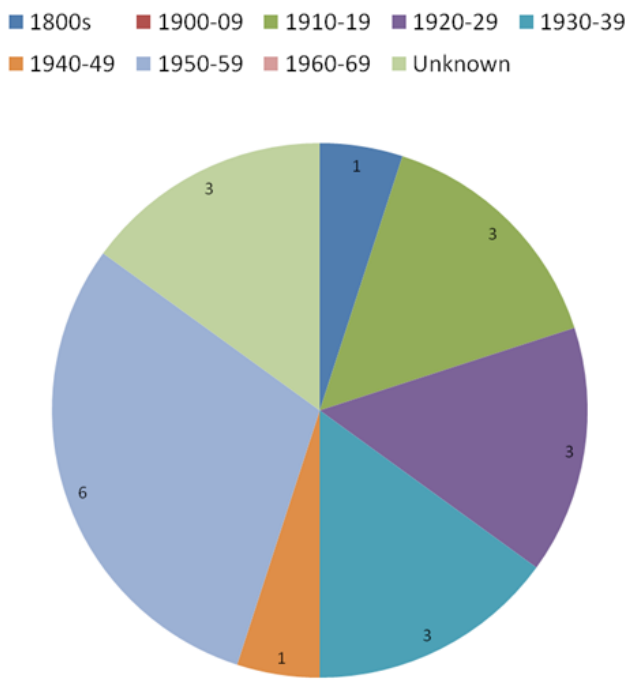


Table 2.7: Vessels Surveyed (Decade of Construction)

This table shows the number of vessels surveyed by decade of construction.

b. Does the watercraft still read as historic? Consider the public visibility of non-historic alterations, the level of importance of material changes, etc. For example, the schooner *Martha* has been altered and much of her original material has not been replaced in-kind, yet she still looks and feels like an old wooden yacht.

7. **Other aspects of integrity.** The National Park Service, which maintains the National Register of Historic Places, lists seven aspects of integrity for historic properties. These are: association, materials, design, location, setting, feeling, and workmanship. Some are discussed in points 1-6 above. For setting, feeling, and workmanship, evaluation will need to be on a case by case basis.

Terms to Know

Watercraft come with their own rich historic terminology. There are some terms, such as measurements, that pertain to all watercraft but also there are terms specific to a category or type of watercraft. The following are a few, but by no means all, of the general and most common terms that pertain to the majority of watercraft.

Aft: Toward the stern (back of the boat).

Amidships: In or near the center of the watercraft, as measured from bow to stern (front to back) and side to side (port to starboard).

Ballast: Weight to provide or improve a watercraft's stability.

Battens: Thin wood strips used to keep sails flat.

Boom: The lower spar of a fore-and-aft sail and also a term for a shipboard crane used for handling cargo.

Bow: The front of a boat.

Bowsprit: A horizontal spar which projects forward from the bow of some watercraft, thus extending the rigging and allowing the forward sails (headsails) to be anchored further out from the watercraft.

Cabin: Enclosed quarter, but also has many other meanings.

Ceiling: Interior planking or plating affixed to the frames.

Centerboard: A sailboat keel that can be raised or lowered. A centerboard can be the only keel or a supplement to a fixed keel.

Centerline: The lengthwise center of the watercraft. Imagine stretching a ball of yarn from the bow to the stern in a straight line—that's the centerline.

Companionway: A ladderway (vertical passage with a ladder mounted to at least one wall for traversing the passage) through a hatch to the next deck below or above.

Deadrise: The angle at which the boat bottom rises from the horizontal on either side of the centerline. A low deadrise number means a flatter bottomed craft, whereas a high deadrise means a deeply V-shaped hull.

Deck: What you walk on or, when inside the watercraft, are sheltered by.

Fore: Anything towards the front on a watercraft.

Fore-and-aft: The name of one type of sail rig; also, a watercraft's sails when the plane of the sails is basically on the centerline.

Foremast: The mast nearest the front (bow) of a sailing watercraft, if more than one mast is present.

Foresail: A sail set forward of the mast (closer to the front of the boat), known also as the headsail, staysail or jib; also, the lowermost sail on a foremast.

Gaff sail: A four-sided sail, as opposed to a triangular sail. Note: a gaff topsail is a triangular or four-sided sail set over a gaff.

Gaff: A spar that holds the upper edge of a four-sided gaff sail.

Hatch: An opening for personnel, cargo or gear to pass vertically through the deck(s)

Head: The toilet.

Headsail: A sail set forward of the foremast; also referred to as a foresail.

Keel: The "backbone" of the boat or ship. In sailing craft it is the projecting structure below the bottom that provides ballast and directional control.

Leeboard: Drop-keels on the sides of some small sailing watercraft.

Lug sail: A four-sided sail, similar to a gaff sail, attached to a yard.

Mainmast: The only mast on some sailing craft; if there is more than one mast, the mainmast is the second from forward (i.e., second from the front), with some exceptions.

Mast: A principal vertical spar rising above the main part of a boat (hull) which supports sails, secondary horizontal spars (booms, battens), and secondary vertical spars (topmasts). If there is more than one mast, they are differentiated by location. A stepped mast simply means a mast that is in place, as opposed to removed.

Rig: To make a watercraft ready or fit to sail; or the assemblage of sails, spars, masts, booms and so forth of a sailing watercraft. Rigging can mean the latter or just simply the lines (ropes) of the system.

Sail: There are many names for the different types of sails, depending on the shape and where/how they are attached to the various masts, spars, stays, etc. of the watercraft.

Spar: General term for any vertical or horizontal rigging pole, including masts, booms and yards.

Square-rigged: A type of sail arrangement which sets rectangular sails perpendicular to the keel line.

Stay: A line supporting the mast, connecting the mast with the bow or stern.

Stem: The forward, or front, edge of the bow.

Stern: The back or aftermost area of a boat.

Tender: Small boat employed to ferry passengers or cargo from shore to a larger watercraft.

Transom: The flat, stern end of a boat; or a surface forming the stern of a watercraft, either vertical or canted at the upper end.

Wheelhouse: An enclosure where the wheel or helm is located and the craft is steered.

Yard: A long spar attached at its midpoint to the mast; also, a spar from which a square sail is hung. There may be more than one yard on a watercraft, so each yard is named for the mast section that supports it, and the attached sails are named for their yards.

Measurements are critical for defining and comparing watercraft. Listed below are the basic measurement terms used when measuring a watercraft. These are used to describe most watercraft and should be included in any survey form.

Beam: The breadth of a watercraft.

Displacement: The amount of water, usually described in tonnage, the watercraft displaces.

Draft: The underwater vertical dimension; varies depending on loading but this dimension is usually considered in the design process.

Length at water line (LWL): This measurement can vary depending on whether the boat is loaded or not, but often designers calculate and state the LWL in design plans.

Length on deck (LOD): Length on the watercraft deck; this would include fore and aft rails.

Length overall (LOA): Length including any projections beyond the deck, for example a bowsprit.

Watercraft Identified by a Design Class Name

Many watercraft, regardless of propulsion source or original function, are known by design class names. For example, "one-design" sailboats are those usually designed to race against one another in a "class" where all measurements of the hull and rig regulate their shape. A historic example is the *Star*. This one-design sloop has been sailed against others in its class since 1911 and used for years in the Olympic Games. The name has become synonymous with its particular class, and when one refers to a Star there is no ambiguity as to what the boat is or its size, rig and hull shape.

Design class names may be based on rating rules which may or may not still be in use. For example, some watercraft are still classified as R boats or Q boats even though the racing rules to which they were designed are obsolete. A watercraft's waterline length or length overall is sometimes used in conjunction with a particular

designer's name as identification, for example a Blanchard 33 or Rhodes 27. Yacht clubs often sponsored the design of watercraft, and the design was in turn named for the yacht club. In some cases, a watercraft type is named for the builder or origin boatyard, like the Blanchard Knockabout.

Other boat designs or types are known by names of objects, ideas, animals, birds, places or nautical terms. Examples of using place names as identifiers include the Lake Union Dreamboat (a distinctive type of raised-deck powerboat) and the Vashon Cutter (a sailboat with an especially deep keel).

Propulsion Categories

This section breaks out the various types of watercraft propelled by paddle/oar, sail, steam or internal combustion engine.

Paddle and Oar Propelled Watercraft

In the Pacific Northwest, canoes have a long history both as commercial, transportation, and pleasure watercraft. Starting with Native American cultures, canoes of this region traditionally were double-ended and propelled by paddle. Some canoes have also been designed for and/or fitted with sails. Variations in design occur depending on builder/origin, intended use (open water vs. river or lake travel; long-distance travel vs. short pleasure excursions; speed vs. stability; etc.), and age. The following illustrate some canoe examples, from traditional Native American designs to modern:

Aluminum canoes: A relatively recent innovation, popular because these canoes are rugged and require minimal maintenance. They are usually built in sections, lap-seamed and riveted together.

Dugout canoes: These are canoes carved from a single log, usually cedar in this part of the world. Various methods have been employed to remove the excess wood and shape the hull.

Fiberglass: Canoes built of this material are not yet old enough to be considered historic but are noteworthy in terms of material and technological progression.

Hide-covered canoes: A simple frame is made of wood or animal bone. Animal hides are sewn together and stretched to cover the frame, and sometimes pitch is used to coat the exterior surface of the hide to further waterproof it.

Plank canoes: This kind of canoe is made from one or several planks per side, each shaped with an adze type of tool. Holes are then drilled along the edge of the planks and they are tied together and to a keel using hide or fiber rope.

Wood and canvas canoes: Older canoes were often made with a combination of wood and canvas, which makes them lighter than traditional canoes made of wood only. A frame and light skin is made of wood which is then covered with stretched canvas that is then painted. Willits Canoes crafted 20th century pleasure canoes that were constructed of canvas and wood. The canvas was sandwiched between the planks for added waterproofing. It was not visible.

Pulling boats (dinghies, rowboats, skiffs, prams, pulling shells, etc.): For the most part these are small watercraft made for specific work or types of recreation and competition. They were designed and built in a variety of ways, often based on their use.

Image of *Yakup*, a Norwegian-style rowboat, donated to the Harbor History Museum in Gig Harbor. Image courtesy of Artifacts Consulting, Inc., 2011.

Dinghy: Small, round-bottomed rowing boat, usually nimble and light.

Dory: Traditionally these were specific working boats that worked off a fishing schooner or even larger craft. Usually manned by one or two people for fishing until they caught their limit (the boat was loaded), then returned to the larger craft and off-loaded.

Drift boats: Shallow-draft, flat-bottomed boats used on rivers for pleasure fishing. Highly specialized, they drift downstream using oars to steer and propel them when necessary. They look much like a traditional dory but with a greater sheer (upward curve of the hull, deck or bulwarks).

Lifeboats: Stored onboard a larger watercraft, these were meant to be used only in times of distress when the crew and/or passengers had to abandon ship.

Pram: Small yacht tender, usually rowed; typically with a nearly flat bow and transom stern.

Pulling shell: Recreational craft often used for racing. Racing shells are classified by the number of people per sweep (oar); for example a one-person shell or an eight-person shell. Closely related craft: wherries, sculls.

Punt: Small square-ended, flat-bottomed boat.

Reef boats: Flat-bottomed fishing watercraft used close to shore in shallow water and often worked in pairs or groups of several boats to catch salmon. A defining feature consisted of an elevated lookout from which a spotter could view down into the water to track fish movements.

Rowboat: A generic name for any small watercraft propelled with oars and includes dinghies, skiffs and prams.

Skiff: Often a name for a flat-bottomed boat used for rowing that is sometimes sailed.

Surfboats (life saving): The first life-saving station on the Pacific coast was Willapa Bay Life-Saving Station, built in 1877 on the Washington coast, with a salaried keeper and a trained volunteer crew. When ships went aground these crews rowed out, often in heavy seas, to rescue passengers and crews. Originally propelled by oar and steered with a sweep, these were rugged, double-ended craft specifically designed and used to save lives off of stranded ships. Today they are much larger and powered by engines.

Wind Propelled Watercraft

Wind propelled watercraft can be defined by several means. Each method communicates important aspects of their design, materials and use. These categories are rigging and mast configuration.

Rigging

Rig, or rigging, can mean the overall assembly or arrangement of masts, sails, booms, yards, stays and lines of a sailing watercraft. Rigging can also be defined as just the ropes or chains used to work all these parts. The number, type, and arrangement of sails and masts help define and describe sailing watercraft. For example, a gaff-rigged cutter is defined more by the shape of its sail and where its single short mast is placed in relation to the bow and stern than a particular hull shape. The placement and size of the mast as well as the shape of the sail separate it from say, a Bermuda-rigged cutter or sloop although the two boats can look similar. Rigging may change over time for many reasons, including changes in watercraft function or needs of the users.

The following provides an overview of general sailing rig types. This list is not comprehensive, but starts to illustrate the richness in variety of rig types.

Balanced Lug: A lug subtype similar to the Standing Lug, this sail is set so a small portion of the sail is forward of the mast.

Crabclaw: Unique sail form used generally on small craft such as kayaks and canoes. Like the Junk, the Crabclaw sail rig has a battened sail but in the shape of a crab claw.

Dipping Lug: A lug subtype, this sail is often the squarest of the Lug type sails and is attached along its top edge to a spar and its forward corner to the boat forward of the mast. When altering course this sail must be lowered or "dipped" from one side of the mast to the other.

Divided: Refers to a rig made up of two or more sail rigs, for instance schooners often have a Marconi mainsail and a gaff foresail.

Gaff: Four-sided vertical sail supported by spars at the top and bottom. This rig is named for the gaff, or the top spar. The spars pivot on the mast.

Gunter Lug or Sliding Gunter: A lug subtype, the Gunter Lug is again similar to the Standing Lug but the top spar is brought almost vertical to the mast using jaws. Often considered a variation of the Gaff rig but simply having an almost vertical gaff.

Junk: Four-sided vertical sail looks like a balanced lug sail with small spars (battens) running horizontally across the sail at spaced intervals. This is not a common rig in the Northwest but is seen occasionally.

Image of *Alcyone*, a schooner designed and built by Frank Prothero in Seattle. Image courtesy of Schooner Alcyone.

Lug/Lugger: This is a sail rig using lug sails (or lugsails), a variety of four-sided sail. A sailing watercraft with lug sails can be referred to as a lugger. Subtypes of this rig system include Standing, Balanced, Gunter or Sliding, and Dipping lug.

Marconi/Bermuda: The two terms for this sail rig are often used interchangeably. This triangular vertical sail rig has the leading edge (luff) fixed to the mast and a spar (boom) that normally runs the length of the bottom (foot) of the sail. Today it is the most common rig used on sailing watercraft.

Spritsail: A four-sided fore-and-aft sail, which means the sails run along the centerline. A sprit is a spar lashed to the mast, running diagonally up and attached to the peak of the sail. (A sprit can also be slang for a bowsprit.)

Square sail: This is a horizontal four-sided sail set across the boat, usually with a horizontal spar set at the top of the sail. The spar is set and pivots on the mast. This rig has been used primarily on commercial watercraft but sometimes also on larger pleasure craft.

Standing Lug: A lug subtype not often seen, this four-sided vertical rig is usually used on small dinghies. This rig can be set with or without a boom. The upper spar runs the length of the top of the sail. The leading edge of the sail (luff) is not attached to the mast.

Wish bone: This is a variation on the Bermuda rig and is defined by twin gaffs as well as the shape of the sail. The parallel gaffs support the sail about two thirds up where it is the widest.

The following are sails that generally do not define the rig although are often necessary:

Jib

Flying jib

Genoa

Topsail

Spinnaker

Fisherman

Staysail

Mast Configuration

Sailing craft are defined by their mast configurations and sail arrangements. These general categories of sailing craft often include craft that have different sail rigs but are the same types.

Bark: A sailing watercraft with three or more masts. All masts are square-rigged except the aftermost mast, which is fore-and-aft rigged.

Barkentine: Similar to a bark but only the foremast is square-rigged.

Brig: This is a watercraft with two masts, both being square-rigged.

Brigantine: This is a watercraft with a square-rigged fore-mast and a fore-and-aft main with a square topsail.

Catboat: Single-mast craft. Catboats are usually small open-cockpit boats with the mast "stepped" (located) very far forward. These boats have no foresail but a very large mainsail. Traditionally they are an East Coast design. Multi-mast catboats are rare. Types: gaff catboat, and Marconi/Bermuda catboat.

Cutter: Single mast craft, similar to a sloop. However, the mast is further aft than a sloop's and often close to the center of the boat allowing for an additional foresail to be set, called a staysail. Types: gaff cutter, and Marconi/Bermuda cutter.

Hermaphrodite Brig: A two-masted watercraft where the foremast is square-rigged, the mainmast having a fore-and-aft mainsail, the topsail and all above being square sails.

Ketch: A ketch, like a schooner, has two masts; however, height of the two masts is reversed on a ketch, with the mainmast (or aft mast) shorter than the foremast. Also,

the mainmast/aft mast is set forward of the tiller or wheel, unlike a yawl. Types: gaff ketch, and divided rig ketch.

Schooners: A simple schooner has two masts. The foremast (forward mast) is shorter than the mainmast (second from forward). There are schooners with more than two masts but these are usually commercial watercraft. The following are types of schooners defined by their rig: gaff schooner, divided rig schooner, staysail schooner, and junk rig schooner.

Ship: Large multi-mast watercraft. This is a watercraft with three or more masts, all square-rigged. This is also a term for large ocean-going watercraft.

Sloop: Single mast craft with either a gaff or a Marconi/Bermuda rig. The latter is the most common rig and favored by most sailors. Types: gaff sloop, and Marconi/Bermuda sloop.

Yawl: A yawl is another two-masted craft. Similar to a ketch, a yawl's mainmast (or aft mast) is shorter than the foremast. However, a yawl's aft mast is set aft of the tiller or wheel. Types: gaff yawl, divided rig yawl, and Marconi/Bermuda yawl.

Image of *Pamela,* a Blanchard Knockabout still in use by the Center for Wooden Boats. Image courtesy of Artifacts Consulting, Inc., 2011.

Hull Categories

Examining the hull, particularly the materials and construction techniques employed, is another method of classifying watercraft. These definitions and descriptions apply to paddle/oar, sail and power craft. Fiberglass is included, since it has been used for at least 50 years on some watercraft hulls. Carbon fiber as a hull material is not included.

Hull Materials

Canvas: Watercraft utilizing canvas are, for the most part, confined to canoes and kayaks. The canvas is usually stretched over a wooden frame and fastened in place with nails or tacks then painted to waterproof the watercraft.

Fiberglass: Beginning in the 1950s fiberglass became a popular material for constructing watercraft. Quicker and less labor intensive, it allowed for the

mass production of watercraft. Today most pleasure craft are constructed with fiberglass hulls.

Metal, Riveted: Riveted is the older method of fastening the metal hull plates together and is generally used in larger watercraft with steel plates and rivets. In smaller aluminum watercraft, pop rivets are used to hold the plates in place.

Metal, Welded: Most metal-hulled watercraft today are welded together.

Wood, Carvel: A type of watercraft in which the planking is flush and smooth and is no doubt the most common method of building round bottomed wooden watercraft with smooth sides. Plywood is seldom used for this type of construction.

Image of *Twilight,* a 1930s era troller designed by H.C. Hanson and built at Fishermen's Terminal in Seattle. *Twilight* is moored on Lake Union at the Northwest Seaport. Image courtesy of Artifacts Consulting, Inc., 2011.

Wood, Lapstrake or clinker: Used for small to moderate-sized round-bottomed watercraft. The lower edge of each plank (strake) overlaps the plank below. This is a very old technique used worldwide. Today strakes can be either solid wood or plywood.

Wood, Stitch and glue: This method is used on relatively small craft. Plywood is generally the planking of choice. Each plank is lapped or butted to the plank below, held in place by wire stitches until the glue sets up and fastens the planks together.

Wood, Strip plan: This method uses strips of wood, sometimes several layers, glued to each other and to each layer and often fiber glassed over.

Hull Shape

Defining watercraft by hull shape is often a secondary method of classification for sailing craft. For example, with sailing craft, the description usually starts with the rig type followed by other descriptions. But power craft and paddle/oar driven craft are often initially defined by their hull shape. The following are hull shapes that are found below and above the waterline. Some of the definitions apply to both power and non-power craft, while others are specific to sailing craft.

The following are descriptions of boat hull shapes below the waterline:

Bulb keel: A fairly recent development, the bottom end of the keel has a bulb shape. Types: Bulb Fin keel, and Integral Bulb keel.

Cathedral hull: As seen from the bow, this hull form appears to be similar to the deep-V but in addition it has side Vs. Both the center V and the side V become less pronounced as they carry aft.

Deep-V: As seen from the bow, the hull shows a steep angle to the deadrise, both aft and stern. Usually seen on powerboats as this hull shape allows for cutting quickly through waves.

Displacement hull: A hull that displaces approximately its own weight worth of water, plowing through water instead of gliding across the top.

Fin keel: The fin keel is not integral to the hull. It is usually attached to the underside of the hull.

Hard-chine: This term refers to the intersection between the sides of the hull with the bottom. The chine is considered hard when an intersection is a distinct line running the length of the hull. These boats sometimes have center boards/center plates, for example sailing/racing dinghies or they can have fixed keels or a combination. A hard-chine is the typical hull form of a semi-displacement hull and planing hull power craft.

Integral keel: This is a fixed keel integral to the hull shape.

Keel with a center board/center plate: These boats have both a keel that is often not as deep as an integral keel and the center board. The center board is centered in the keel and drops below it giving the keel greater depth and lateral stability.

Planing hull: A hull shaped to glide across the water at high speeds, often seen on power craft.

Round-bilge: This is a round-bottomed boat. The bottom rises from the keel to the sides in a smooth continuous line. These boats sometimes have center boards/center plates, such as sailing/racing dinghies or they can have fixed keels or a combination. A round-bilge power craft is normally a displacement hull.

Semi-V: As seen looking at the bow, the hull shows a steep angle of deadrise further aft, but its V shape decreases gradually until the bottom is almost flat at the stern.

Wing keel: Another fairly recent development, the bottom end of the fin keel has wings projecting from each side.

Descriptions of hull shapes above the waterline take in several factors: the shape of the bow, transom, sheer line and topsides.

Bow shape

Clipper bow: A concave shape often ending on the deck level with a bowsprit, the name comes from the shape of the bow of clipper ships.

Knuckle: The stem that rises from the keel is not a continuous smooth shape but is a broken shape creating a knuckle bow.

Spoon bow: A spoon bow is convex and varies in overhang length (the overhang is the horizontal length from waterline to deck). Types: short overhang, and long overhang.

Straight stem/Plumb stem: The straight stem, as the term implies, rises straight up from the keel.

Transom or Stern Shape

Canoe stern: These are not transoms because the hull shape at the aft section of the craft comes together in a shape that resembles a canoe bow/stern.

Curved transom: Curved transoms are harder to build. Normally they curve across the aft section of the watercraft but sometimes they curve across and down.

Flat transom: Flat transoms are, of course, flat, but they often slope down from the deck inward toward the waterline.

Longer counter: The longer counter is often seen in older racing watercraft and was designed to create a longer waterline length when the craft was heeled over.

Reverse transom: A reverse transom begins at the deck and slopes out to meet the counter, simply the reverse of the traditional transom.

Short counter: The counter is the underside of the hull rising from the waterline to the transom. When this feature is short, the hull is referred to as a short counter and may often be overhanging.

Midsection shape (topsides)

Topsides are the portion of the hull from the water line to the deck. The overall shape is often based on the shape at the midsection of the hull.

Flare: Power boat hulls often flare outward as they rise from the waterline, particularly forward of the midsection but sometimes aft of it also. This is to deflect spray when underway.

Tumble home: This term refers to a hull shape that turns significantly in as it rises from the waterline to the deck.

Vertical: This hull shape rises vertically from the water to the deck with little or no rounding out or in.

Image of *Beryl E*, a cannery tender designed by Ted Geary. This is a rare Ted Geary designed commercial vessel. Image courtesy of Artifacts Consulting, Inc., 2011.

Sheer shape

Sheer is the curve or straight line of the deck lines of any craft, usually from bow to stern.

Conventional: A conventional sheer varies from craft to craft but generally implies a deck line that is lower at the midsection, curving up to the bow and the stern. Often the curve to the bow is greater than the stern, making the bow higher from the waterline.

Flat Sheer: As the name suggests the sheer is flat, without curve from bow to stern.

Reverse Sheer: Is a curve of the deck line that is higher near the midsection curving down to the bow and stern.

Engine-powered Craft

Today there are few commercial paddle/oar, sailing, or steam powered craft. The vast majority of commercial watercraft are powered by internal combustion engines. The engine power craft section features two sections: commercial and pleasure. There are some non-commercial watercraft which are or were engine propelled, such as lightships.[3]

Commercial Fishing Watercraft

Commercial fishing watercraft, particularly larger watercraft (30 feet or more), are not often defined by their hull shape, rig or fishery. During the life of the watercraft

[3] Lightships were generally located at the approaches to ports or bays, or the outer limits of off-lying dangers such as reefs. They functioned as floating beacons where lighthouses could not be built. The Swiftsure Bank station, located 14 miles northwest of Cape Flattery, was possibly the best known of the light watercraft stations on the Washington coast. Washington had two of the Pacific Coast's five lightships.

or sometimes from season to season, these craft may work different fisheries, which means their fishing rigs change. Some watercraft were designed for one fishery but because of overfishing or regulations it can no longer make a living working a single fishery. The watercraft must be flexible.

Crab boats: The larger versions of these craft have become very specialized in the last few decades and most work the Alaska fisheries. But small craft that work the Washington crab fisheries are often used in other fisheries. Historically, relatively small craft could function as crab boats, with some examples being oar-powered.

Gill netters: These boats, like trollers, are often some of the smaller fishing watercraft. Some are built with planing hulls. They can be recognized by the large roller on their aft deck.

Longliners: These watercraft catch bottom fish such as halibut by laying and later pulling in long baited lines along the ocean floor. These watercraft often have a baiting shed located on the aft deck that protects the crew while they prepare the hooks along the line.

Image of *Shenandoah*, a 65-foot purse seiner built in 1925 by the Skansie Shipyard. It is permanently dry-docked and on display at the Harbor History Museum in Gig Harbor. Image courtesy of Artifacts Consulting, Inc., 2011.

Reef net boats/Reef netters: Historically, these were generally small open skiffs used in shallow water fishing for salmon. Two or more boats work together to set the net and catch the fish.

Seiners: These are moderately sized boats with a large aft deck. Seiners work with the help of a skiff. The skiff takes one end of the net helping to spread and set it in a large circle. The skiff and the seiner then pull together, the skiff passes its end of the net back to the seiner, and the seiner then begins to haul the net aboard.

Trawlers: These boats are often some of the biggest fishing boats, sometimes up to 600 feet long. The largest ones are usually modern watercraft that catch, clean, process and freeze their catch. These boats often function as crabbers.

Trollers: Often among the smaller of the commercial fishing watercraft, these boats traditionally are not easily converted. They have relatively small aft decks and many are double ended (both the bow and stern extend to a point). Their rigs are easily recognized by their long outrigger poles.

Commercial Tug and Towboats

Similar watercraft, tugs and towboats assist other craft in maneuvering. Some of these craft may be unable to maneuver at all, for example barges or ships that have lost power. Tugs and towboats help maneuver larger craft in narrow channels, crowded ports, or alongside a berth.

Commercial assistance towboats: These tend to be small craft designed to help out other small craft with mechanical problems or that have just run out of fuel. They may be available on a call-out basis in some harbors.

Harbor tugs: Any watercraft whose job it is to help a large ship get in and out of an anchorage or berth in a harbor. This is the kind of watercraft most people think of when they refer to a "tug boat." These tugs are powerful for their size and provide an additional engine for the large ship they are assisting. Harbor tugs tend to have lots of cushioning, especially on the bow, and they push some watercraft, while pulling others by attaching wire cable or strong fiber line.

Image of *Arthur Foss.* The *Arthur Foss*, built in 1889, originally ran on steam power. It was converted to diesel in 1934. The ***Arthur Foss*** is a National Historic Landmark and is moored on Lake Union at the Northwest Seaport.

ITB (Integrated tug and barge unit): This is a tug designed and built to fit into a notch at the stern of a barge. This coupling of tug and barge makes them a single watercraft.

River towboats: Flat on the bow, with a tall superstructure (so the crew can see over the barge) these boats push barges ahead of them. Their design makes them unsuitable for sea-going duty, but perfect for the complicated navigation and close-quarters maneuvering required on rivers opening onto marine waterways.

Seagoing Tugs: These tugs are designed and built for ocean service. They haul barges to Alaska or to islands in the Pacific and at times tow large ships from one port to another.

Specialized tugs: These are tugs designed and built for specific jobs, such as fire-fighting, or escorting oil tankers, or towing MODUs (floating oil rigs).

Commercial Ferries and Commuters

In the early 1900s, Puget Sound ferry service was initially provided by a number of companies using small steamers known as the "Mosquito Fleet." By 1929, the ferry industry had consolidated into two companies: Puget Sound Navigation Company and Kitsap County Transportation Company. By 1935 the Kitsap County Transportation Company was out of business. Washington State Ferries came into existence with the state's buyout of Puget Sound Navigation in 1951. The boats the state purchased from the Puget Sound Navigation Company included a number of steel hull diesel-electrics from San Francisco, wooden hull diesel-electrics and steamers, and also wooden diesel-powered boats built in the Northwest. There are two general types of ferries: passenger/auto ferries and passenger ferries.

Detail of the pilothouse of the Fireboat Duwamish. Duwamish is listed as a NHL and is moored on Lake Union at the Northwest Seaport. Image courtesy of Artifacts Consulting, Inc., 2011.

Fireboats

These are specialized watercraft meant for fighting fires in and around harbors. Some tugs were equipped with fire-fighting water cannons but as time went on the firefighting watercraft became specialized. The Northwest Seaport on Lake Union has the Fireboat *Duwamish*, and Tacoma *Fireboat #1* is located out of water along the Ruston Waterfront. Both are accessible for public viewing.

Pleasure Power Craft

A wide range of pleasure watercraft operates along the state's marine waterways. The following provides an overview of general types.

Commuter: These watercraft were privately owned high speed watercraft used to ferry their owners between home and work, i.e. from Bainbridge Island to Seattle. Often these boats were relatively large and quite fast. Early commuter powercraft had displacement hulls but later commuters were designed with planing hulls.

Cruising: This is possibly the largest contingent of power craft in the Pacific Northwest. Their size varies but they have certain things in common. They are enclosed, have a cabin with quarters for the owners and guests and a wheelhouse. Sometimes they have an outside wheelhouse in addition to the enclosed one.

Houseboats (powered): These are flat-bottomed, barge-like watercraft with large superstructures built on relatively low hulls. They are not sea worthy and consequently remain in protected waters.

Hydroplanes: Hydroplanes have a long history in the Pacific Northwest. These are strictly for racing and come in a variety of sizes. They have a distinctive hull shape—usually two outboard pontoons with a center section where the engine and cockpit sit.

Runabouts: These are relatively small, open cockpit powercraft. They had a variety of uses depending on the owner. They were used to fish from, water ski behind, cruise (short day trips), race and some were used as short commuter craft.

Miscellaneous Craft

Washington, particularly the western half, has many bodies of water. Some watercraft defy all classification but are included here for completeness.

House boats (non powered): Many of these "boats" were traditionally built over logs and really cannot be considered watercraft. They straddle the line between watercraft and traditional land-based homes. They are very uniquely Northwest homes. Newer models are built on barges and may be considered watercraft.

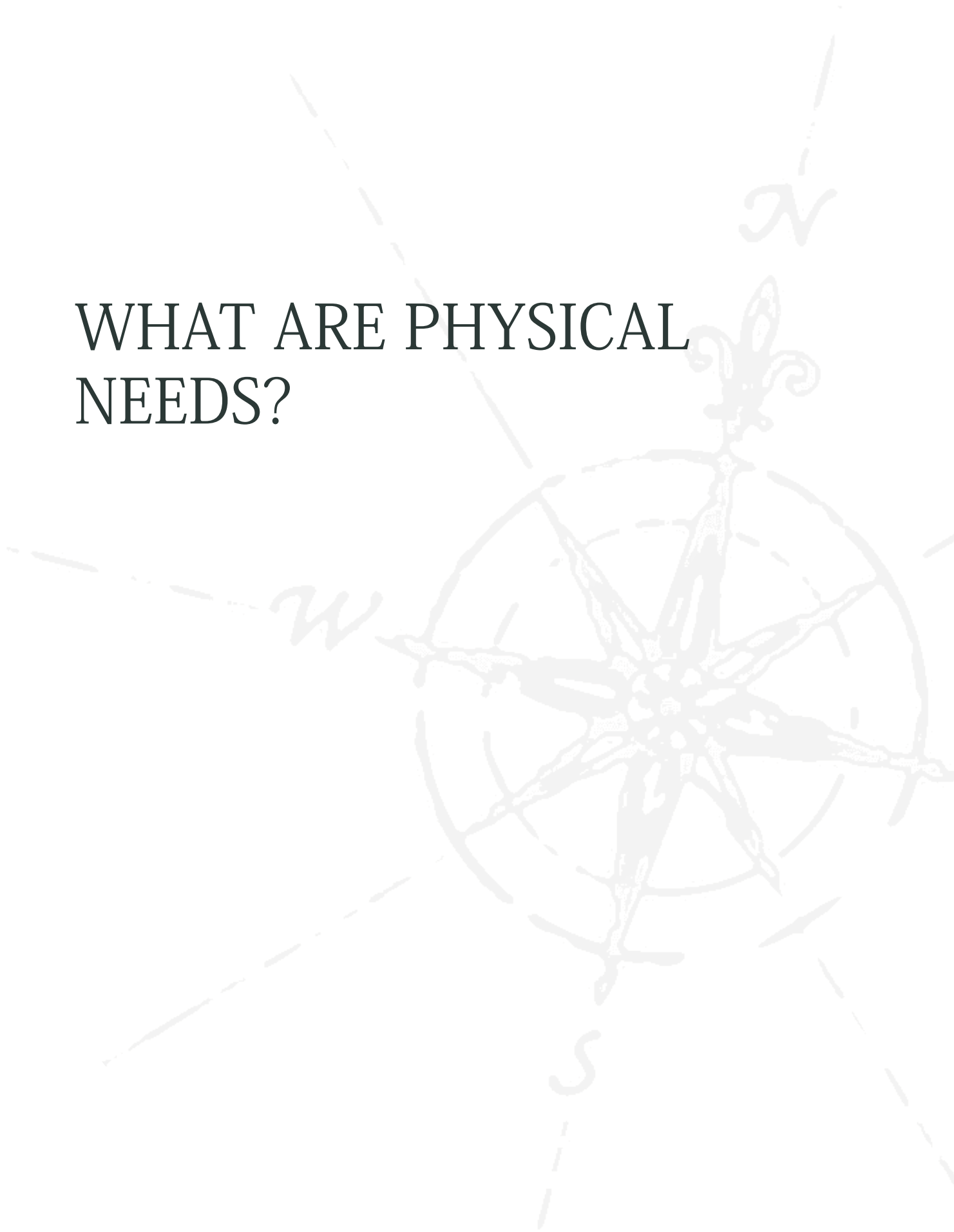
Steam-powered Craft Mosquito Fleet: Steamships once ruled the regional waterways, transporting passengers and freight. The Mosquito Fleet, including both the watercraft and the landings they once used, is all but gone today. The Steamship *Virginia V*, now based on Lake Union, is possibly the last of this historic fleet. Also moored on Lake Union is the *Arthur Foss* (previously named the *Wallowa*), which originally ran on steam power. It was converted to diesel in 1934.[4] There are few remaining steam-powered watercraft in Washington.

Snagboats: These boats removed navigational hazards from the bays and harbors of the Sea and from its tributary rivers. They were usually shallow draft watercraft, with steam engines driven by a paddle wheel. The *W. T. Preston* in Anacortes is a good example. Snags threatened navigation and if not removed could grow into logjams blocking channels. In addition, these watercraft were also used as dredgers and pile drivers.

[4] James Delgado, National Register of Historic Places, Arthur Foss (Tugboat), Seattle, King County, Washington, National Register # 45KI00674. The ***Arthur Foss*** is listed to the National Register of Historic Places as an NHL.

Physical Assessment

WHAT ARE PHYSICAL NEEDS?



Physical needs are deficiencies in condition, as well as changes in use and context affecting the integrity and continued use of the property.

These condition issues, if left unaddressed, can erode the overall integrity of individual properties and the collective body of maritime related properties. They can inhibit continued use or deter adaptive reuse. Keeping an active use (to provide income to support building maintenance) is essential to long term building conservation.

The changes in use and context relate to a building's community function and interpretive role. These address the broader story telling capacity of these communities and properties and the continuation of maritime related uses. These issues speak to the larger collective history and maritime identity of the region. Waterfront development pressures and environmental policy present two of the main threats to property integrity.

USER GROUPS

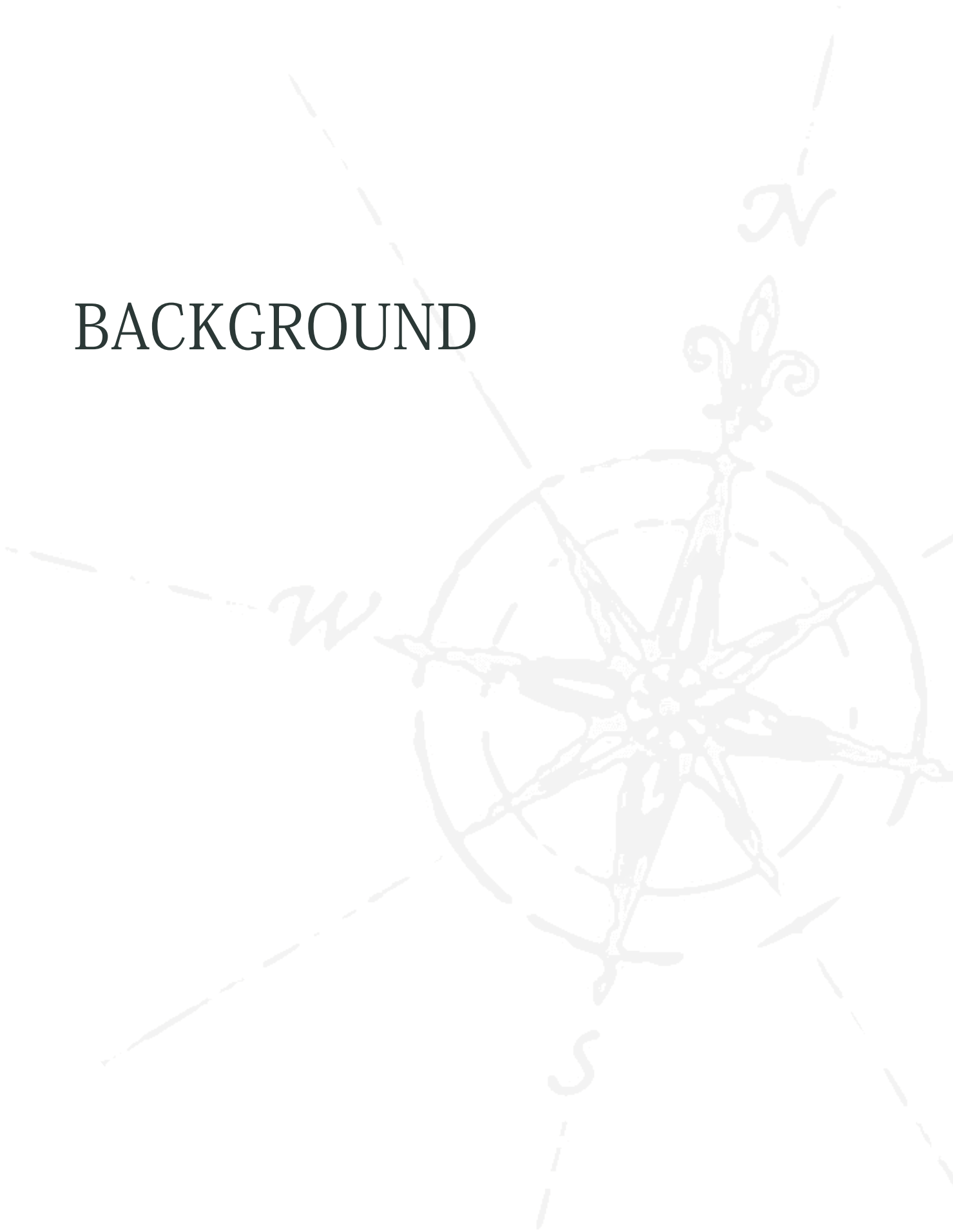
Providing data to assist communities, educate citizens and aid other state agencies and local governments with integrating historic preservation into planning and policy helps this project fulfill Goal 1 Enhance the Effectiveness of Historic Preservation Efforts of the State Historic Preservation Plan.

Anticipated users of this report in addition to the Washington State Department of Archaeology and Historic Preservation include land owners, state departments, private citizens, land conservancy groups, and non-profits. This report seeks to help inform property owner planning and identifying opportunities. The Department of Natural Resources has an interest, in particular, as a land owner of state aquatic lands.

Federal stakeholders involved in the Habitat Conservation Plan preparation related to marine environment ecosystem conservation for the *Endangered Species Act* of 1973 will also benefit from the survey and inventory data to inform Section 106 of the *National Historic Preservation Act* compliance.

Concurrent to this survey, the National Park Service is undertaking a maritime survey for the Great Lakes. A nationwide effort for managing change and stewardship of maritime resources would benefit from data and methodology sharing to continue to build upon collective efforts.

BACKGROUND



Data collected for surveyed properties establishes a link between the historic status, integrity, and the physical conditions of these properties. Information was structured to integrate HPI data using questions based on existing data sets collected within HPI. This allows future work to continue building upon this study through the HPI database, strengthening HPI's role as a policy and planning tool.

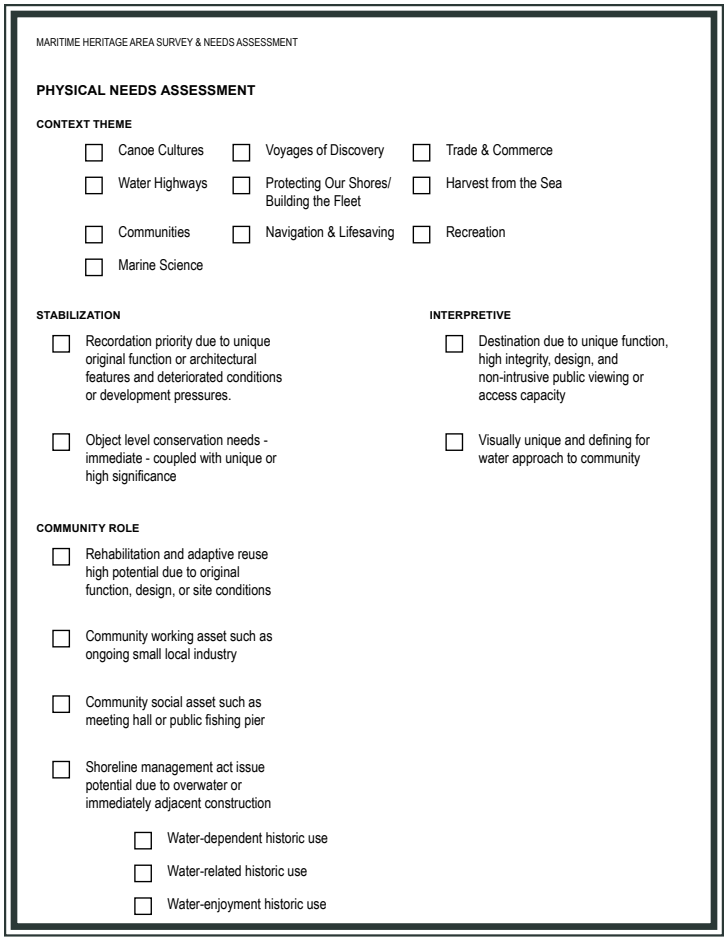
Surveyors collected data in the field using a pre-set list of questions. Data from the field forms was entered into a database and tracked for each property. This data linked to GIS to allow projection.

Findings

The three primary areas addressed in the physical needs are stabilization, community role and interpretive needs.

Stabilization needs pertain to a relatively small number of properties within the survey area. The urgency of repair needs coupled with the significance of these properties places greater priority on their conservation. Most will require local participation and would benefit from advocacy work through local historical societies and the Washington Trust for Historic Preservation. Refer to **"Stabilization" on page 109** for a list and map of properties with stabilization needs.

Community role addresses the overall historic character of marine waterways and maritime cities within the survey area. This category represents a pressing need to address policy related to the built environment and the retention of both the physical built environment and historic uses. Policy issues pertain mainly to Habitat Conservation Plans and Shoreline Management Programs and how historic properties are addressed within each. Refer to **"Policy" on page 135** for detailed findings and recommendations. Retaining historic properties along ma-



MARITIME HERITAGE AREA SURVEY & NEEDS ASSESSMENT

PHYSICAL NEEDS ASSESSMENT

CONTEXT THEME

- ☐ Canoe Cultures
- ☐ Voyages of Discovery
- ☐ Trade & Commerce
- ☐ Water Highways
- ☐ Protecting Our Shores/ Building the Fleet
- ☐ Harvest from the Sea
- ☐ Communities
- ☐ Navigation & Lifesaving
- ☐ Recreation
- ☐ Marine Science

STABILIZATION

- ☐ Recordation priority due to unique original function or architectural features and deteriorated conditions or development pressures.
- ☐ Object level conservation needs - immediate - coupled with unique or high significance

INTERPRETIVE

- ☐ Destination due to unique function, high integrity, design, and non-intrusive public viewing or access capacity
- ☐ Visually unique and defining for water approach to community

COMMUNITY ROLE

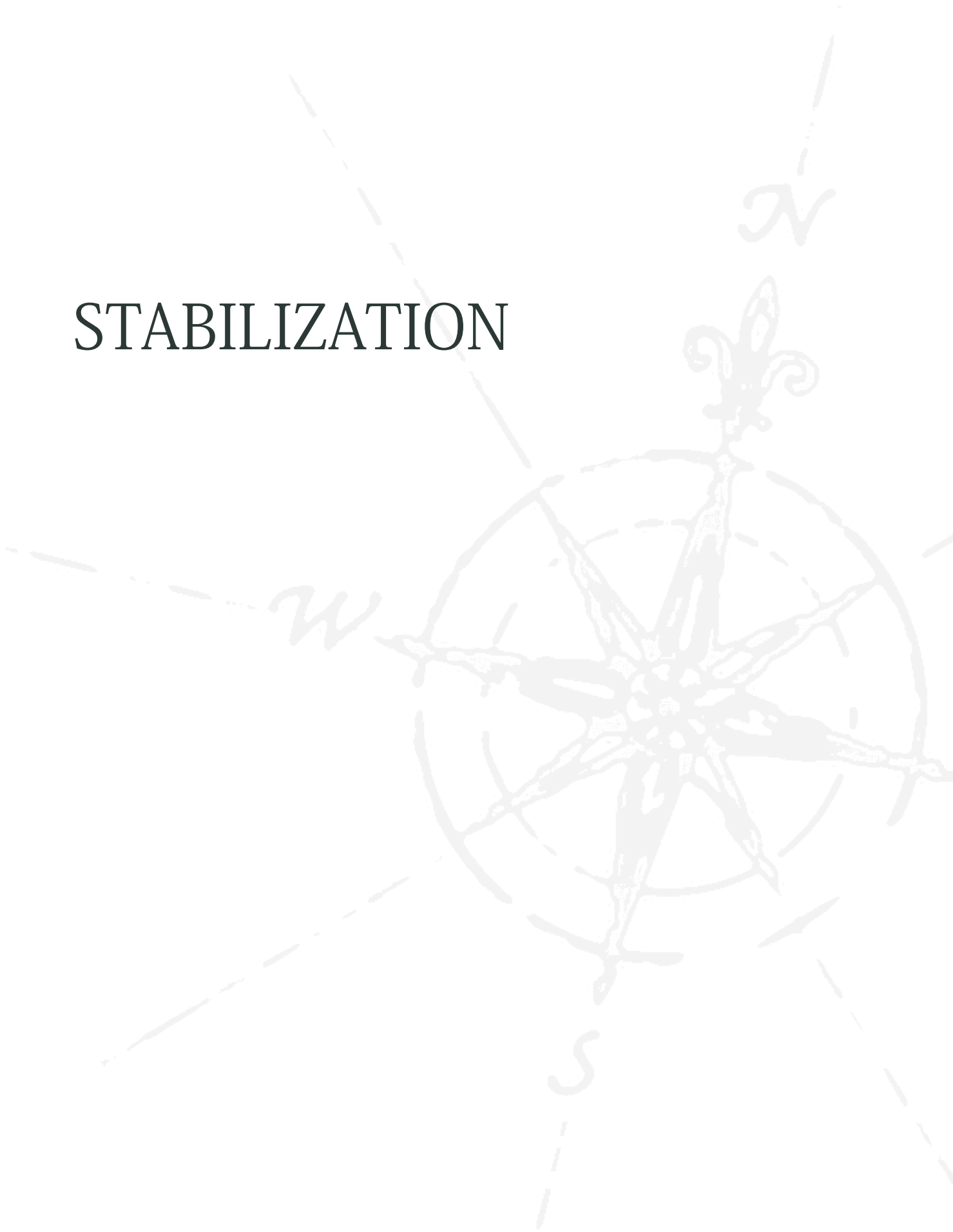
- ☐ Rehabilitation and adaptive reuse high potential due to original function, design, or site conditions
- ☐ Community working asset such as ongoing small local industry
- ☐ Community social asset such as meeting hall or public fishing pier
- ☐ Shoreline management act issue potential due to overwater or immediately adjacent construction
  - ☐ Water-dependent historic use
  - ☐ Water-related historic use
  - ☐ Water-enjoyment historic use

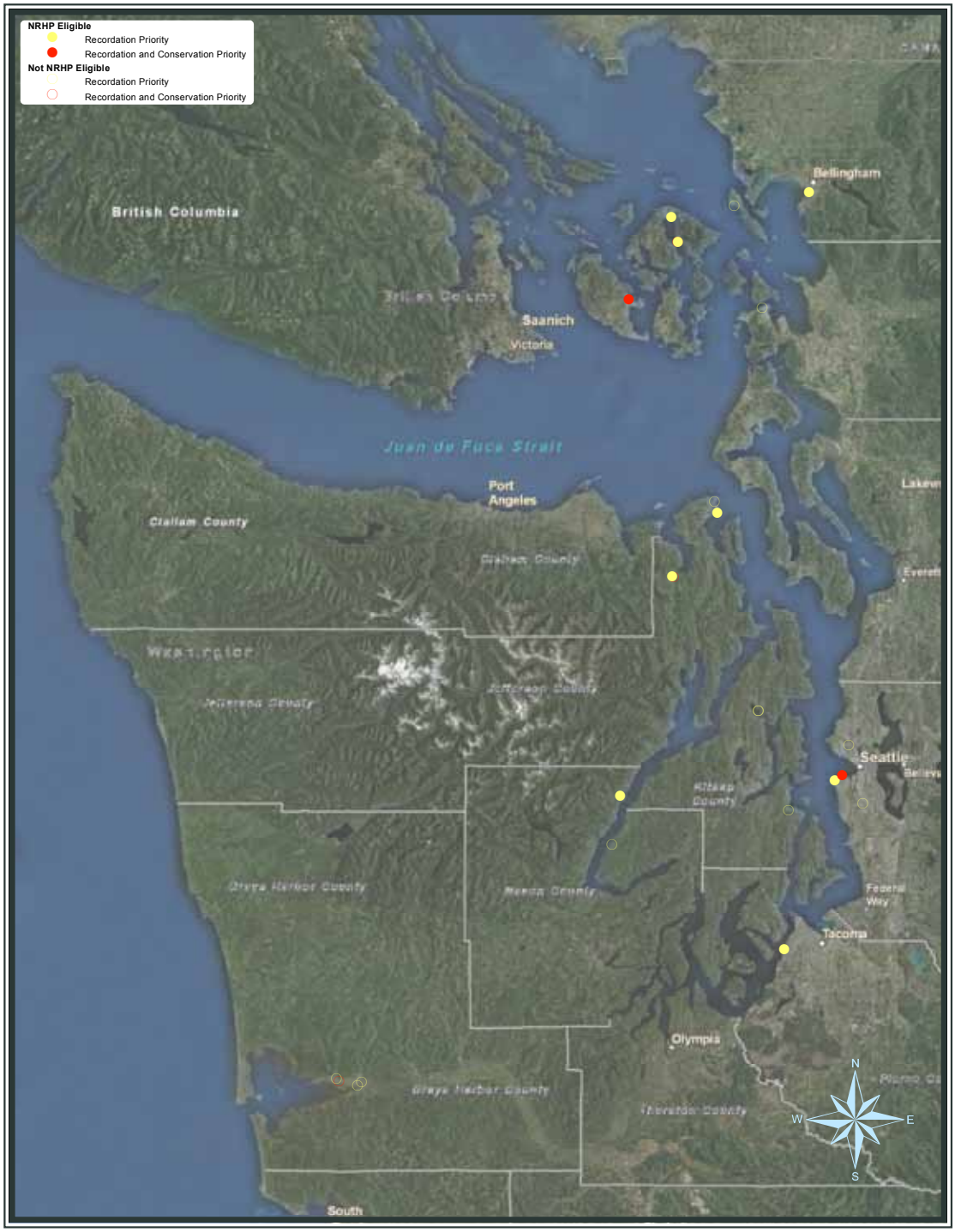
Field form used for the physical needs assessment in the 2011 Maritime Resource Survey.

rine waterways plays a critical role in overall historic integrity of the survey area and associated economic benefits of heritage tourism and perpetuating and understanding historic uses. Refer to **"community Role" on page 115** for background on categories used to measure community role and data collected during field work. Gig Harbor's Historic Working Waterfront provides in the case studies section provides an excellent example of local efforts to combine policy with strengthening the community role of maritime history and uses.

Interpretive needs address the need to communicate the story of maritime history to the public as well as stewards of aquatic lands and historic properties. Raising awareness for the legacy of maritime history and its connection with the natural environment is essential to promoting ongoing cooperative stewardship efforts between preservation and natural environment issues. Often the concerns on both sides are not only mutually supportive, but encourage public waterfront access and use. Gig Harbor's work on the Skansie Net Shed in the case studies section provides an excellent example of this cooperation and the strong public interpretive role such a site can have within the community. Refer to **"Interpretive" on page 129** for background on this issue and data collected from field work.

STABILIZATION





Map 3.1: Stabilization Needs

This map shows the locations of properties identified within the survey area having stabilization needs. Refer to **"Table 3.8: Stabilization Needs (Decade of Construction)"**

The stabilization section highlights short-term priority needs that should be addressed prior to loss of the resource(s). We looked at the following criteria: Recordation priorities; and, Object level conservation needs. See **"Table 3.8: Stabilization Needs (Decade of Construction)" on page 112** *for a count of identified properties.*

Recordation priorities identified in the field exhibited unique attributes stemming from function or design that are in an advanced state of deterioration or subject to intense land use pressure for their removal.

Recognizing unique functions and/or architectural features drew upon surveyor team experience and archival background research undertaken prior to field work. The same surveyors traveled throughout the project area. This allowed them to quickly identify unique items relative to other properties in the survey area.

The majority of maritime related properties inventoried exhibited some level of deterioration. For a property to have risen to the level of pronounced deterioration there had to be imminent threat to the use or features that made the property unique. Surveyors made a professional judgment in the field. All surveyors working in the field have extensive experience preparing historic structures reports and building condition assessments.

Development pressures existed at most of the urban maritime locations. For the purpose of stabilization needs, a structure had to be not only vacant or under-utilized, but in a setting where a return to its original or a more active use would be difficult. Adjacent uses also had to be substantially different from the original resource use. An example would be a salmon cannery backed up against a bluff with high-end residences built up around it.

Identified properties should be recorded at least at the DAHP Level II documentation level to record additional history and provide a more comprehensive photographic documentation series. Their loss would erase an important marker in design, function, and building technology. They provide an important record for comparison and understanding other or similar resources and their development.

Object level conservation needs were identified by surveyors for remarkable properties needing stabilization and specialized conservation measures to retain them. These were properties having a high level of significance with particularly serious condition issues. They typically represent small works having a unique and important story within the overall context of Washington's maritime history. They are properties that are easily lost and likely will be expensive to stabilize, despite their small stature, due to their delicate state. These properties should be targets for grants and other preservation incentives to encourage their repair.

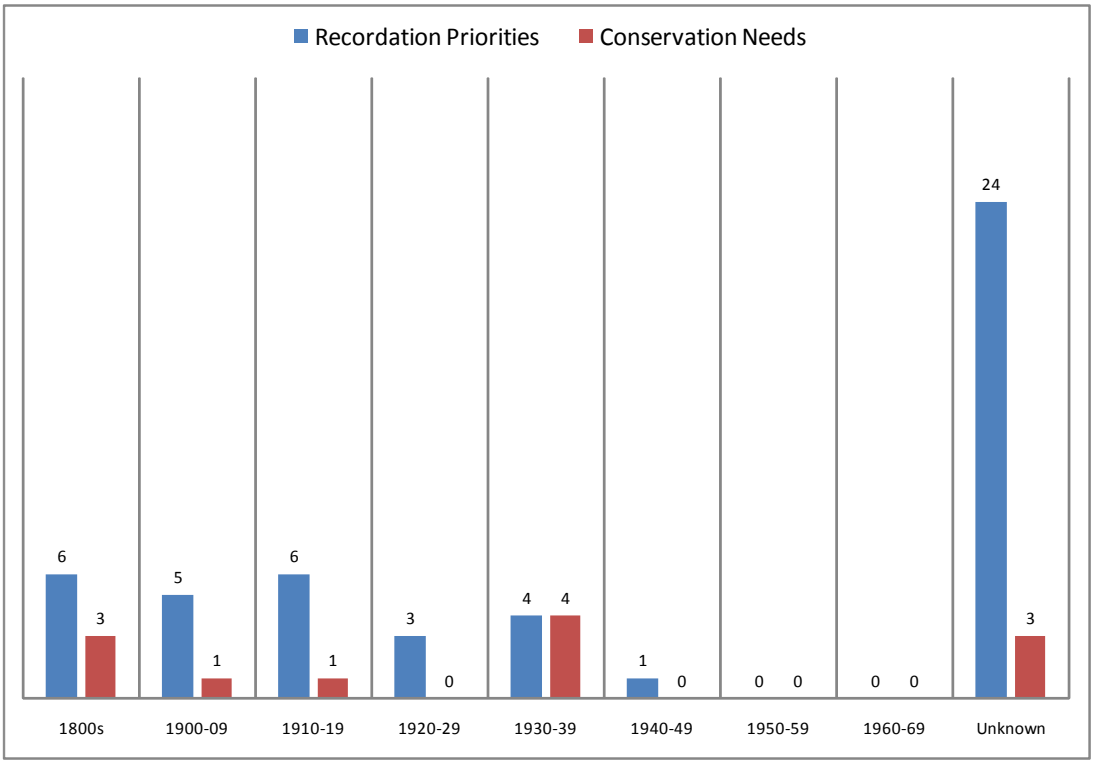
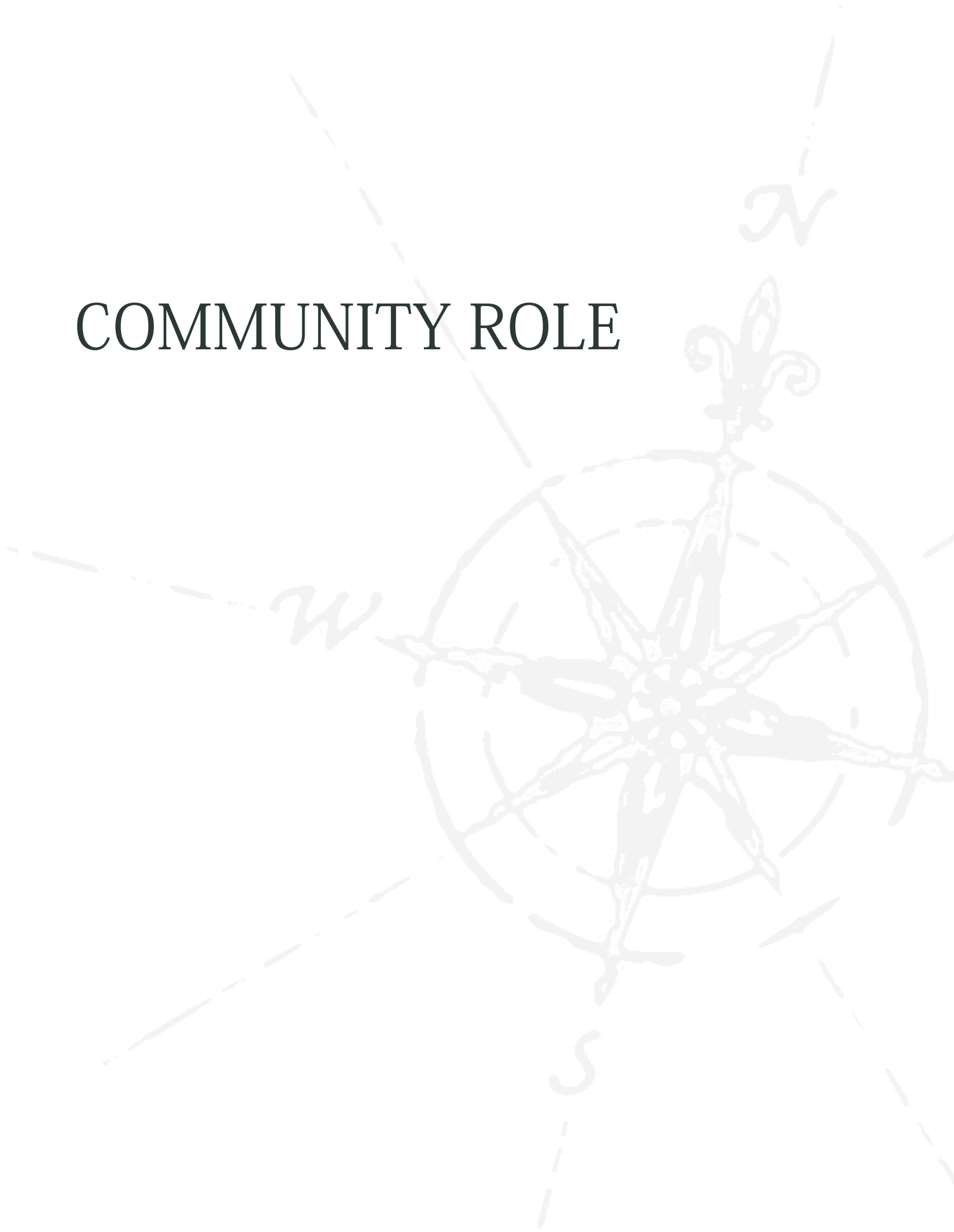
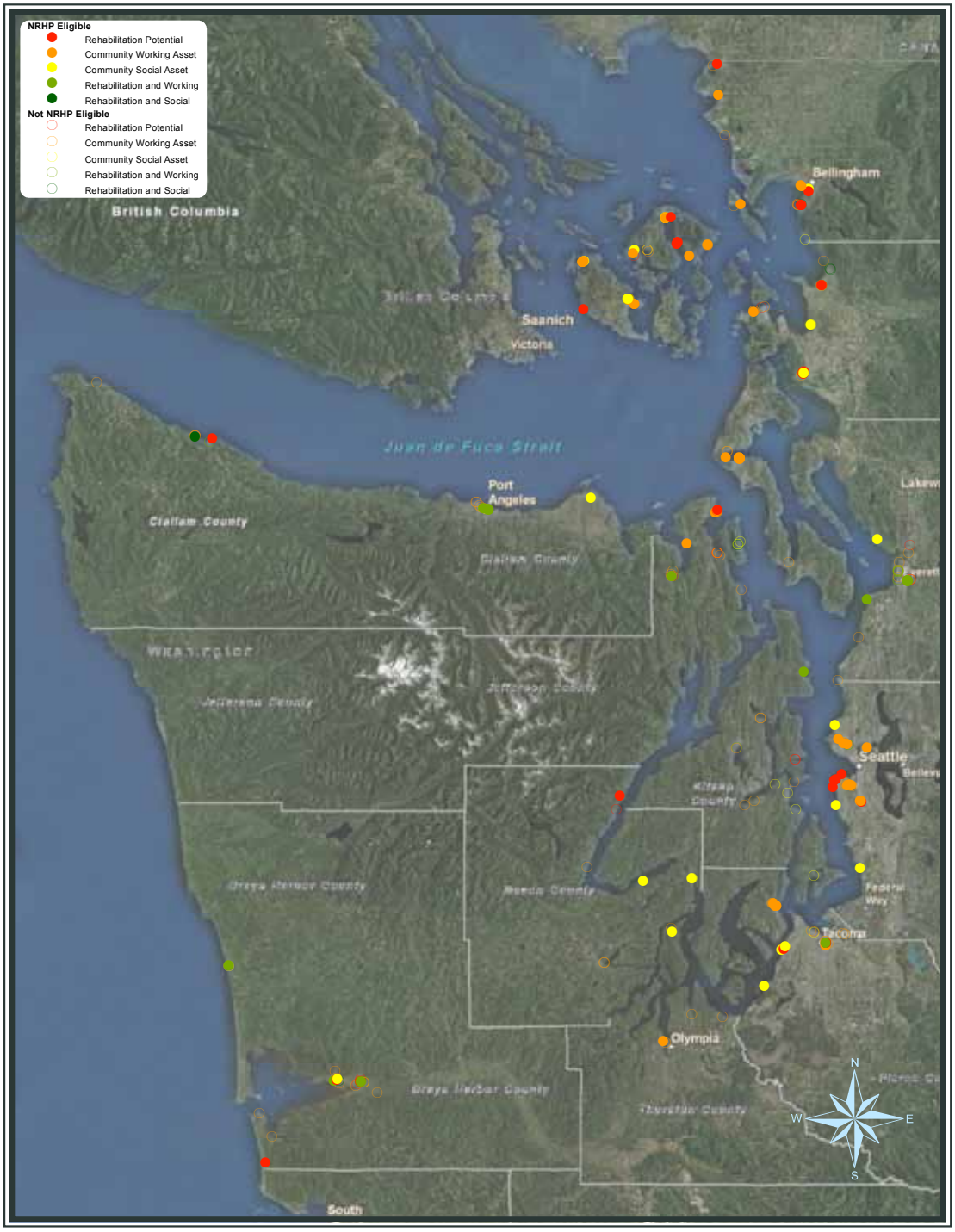


Table 3.8: Stabilization Needs (Decade of Construction)

This table illustrates the number of buildings by decade having stabilization needs.

COMMUNITY ROLE





Map 3.2: Community Role

This map shows the location of properties identified with Community Role needs and/or roles.

Addressing the community role of maritime related historic properties is intended to support State Historic Preservation plan Goal III Strengthen the Role of Historic Preservation in Local Planning and Community Revitalization. Assessing the role and value of maritime properties within each community extends beyond standard building conservation issues. Our approach sought to tie in with the economic and social benefits these properties provide, an aspect many of these small maritime communities have long recognized and cultivated. The intent is to continue to build upon these local efforts as a means to keep active maritime uses and building stock.

We looked at the following criteria:

> Rehabilitation and adaptive reuse potential (high) due to original function, design or site conditions;
>
> Community working asset such as ongoing small local industry;
>
> Community social asset such as a meeting hall or public fishing pier; and,
>
> Shoreline Management Act issue potential due to construction over or immediately adjacent water.

Surveyors identified **rehabilitation and adaptive reuse candidates** with a high potential due to original function, design or site conditions. All surveyors had previous experience preparing **Federal Investment Tax Credit** (ITC) applications and **Washington State Special Valuation** applications. Knowing how these projects unfold and how new and adaptive uses impact buildings we sought to identify buildings having a capacity to accommodate adaptive uses with the least potential alterations. Our identification focused on underutilized properties where their continued current trajectory would potentially result in loss due to development pressure and/or condition issues. Refer to **"Map 3.2: Community Role" on page 116** for locations and **"Table 3.9: Community Role(s) (Decade of Construction)" on page 119** for quantities.

These properties represent a significant investment potential for communities. Predominate private ownership of these potentially income producing properties enables the use of ITC, Special Valuation program and grants. Local repairs and rehabilitation work often involves smaller projects for which local contractors can put up a bond. These projects typically utilize local, often hand crafted materials with less carbon effect and greater creation of well paying local jobs, as well as sustaining skill sets of local crafts persons.

These properties can also serve as incubators for small local industries and businesses. Owners are often able to ask a lower rent since the buildings may be

owned outright for long periods with less debt associated with property. Phasing of improvements and working with local code officials can also allow modest initial investment to establish tenants. As revenue increases improvements and additional code compliance issues can then be met, drawing in tenants with a higher rent capacity.

Surveyors identified **community working assets**. A community working asset is a commercial or industrial operation within the survey area having a maritime connection. The use may be water-dependent or water related. Examples include shipyards, sail makers, pulp mills and fish processing facilities. Refer to **"Map 3.2: Community Role" on page 116** for locations.

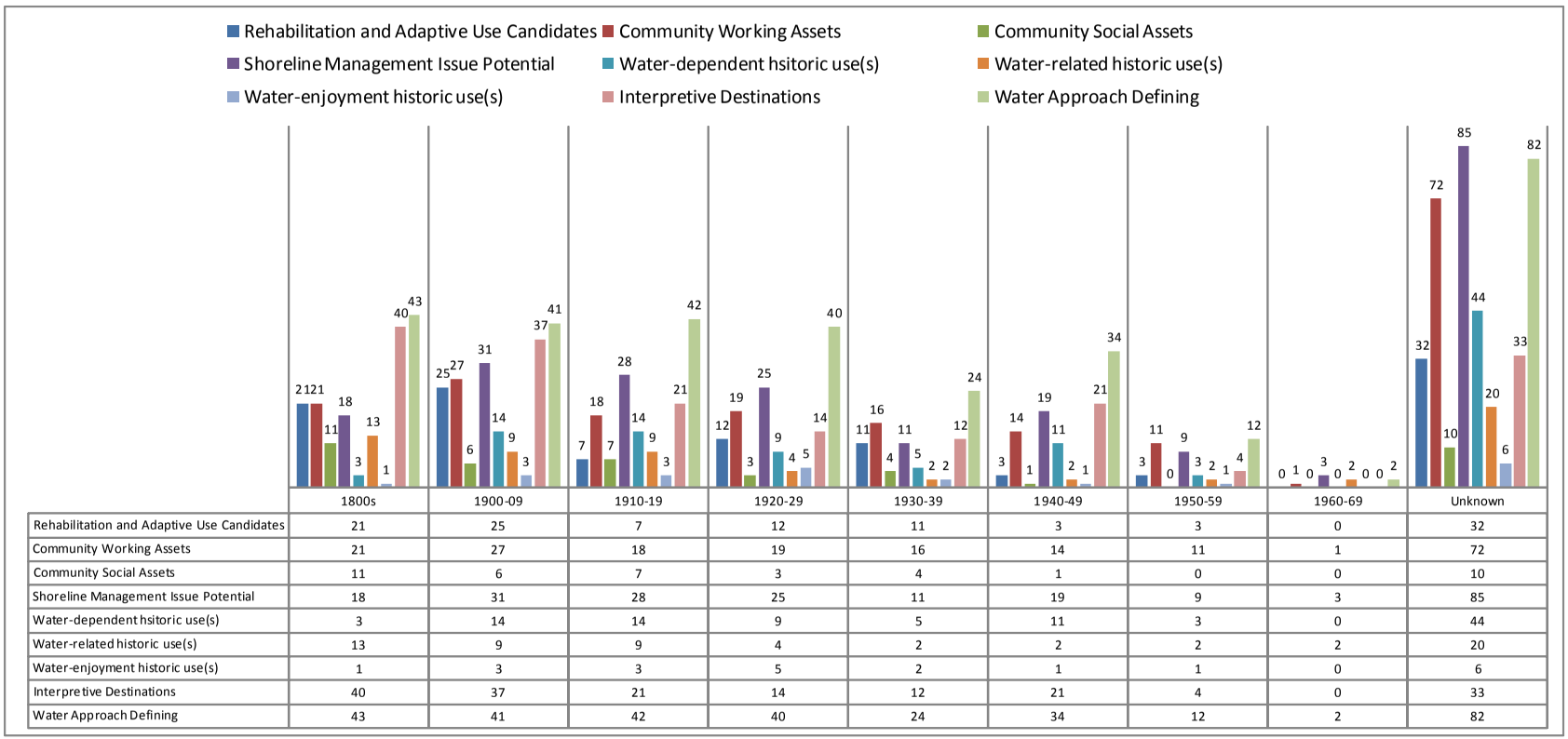
Field teams collected this data to measure the extent of ongoing maritime related operations in historic buildings near the marine shoreline. These qualities represent an important potential for preserving not only a historic building but also encouraging ongoing maritime related uses. Building conservation depends upon income producing use(s) to support ongoing maintenance.

This data also identifies areas of concentrated maritime related commercial and industrial functions to encourage this ongoing activity. Working waterfront focus areas of concentrated small business having a maritime related use perpetuate the working waterfront character of communities. Their concentration encourages their role as a growth center for related activities. Their concentration and need for water access should counter land use conversion to residential and office uses. Refer to **"Map 3.3: Working Waterfront Areas" on page 120 .**

The closer a current use is to a building's historic use, the less extensive changes are in order to accommodate the use. This results both in a more intact building and less owner investment to accommodate a use. Focus areas provide a stock of buildings that continue to support maritime related uses, allowing these same buildings to cycle through different uses as businesses open and close.

These properties are particularly important in that they are private businesses that individually and collectively contribute to the character and economic health of their respective communities. They also sustain community links with their maritime history.

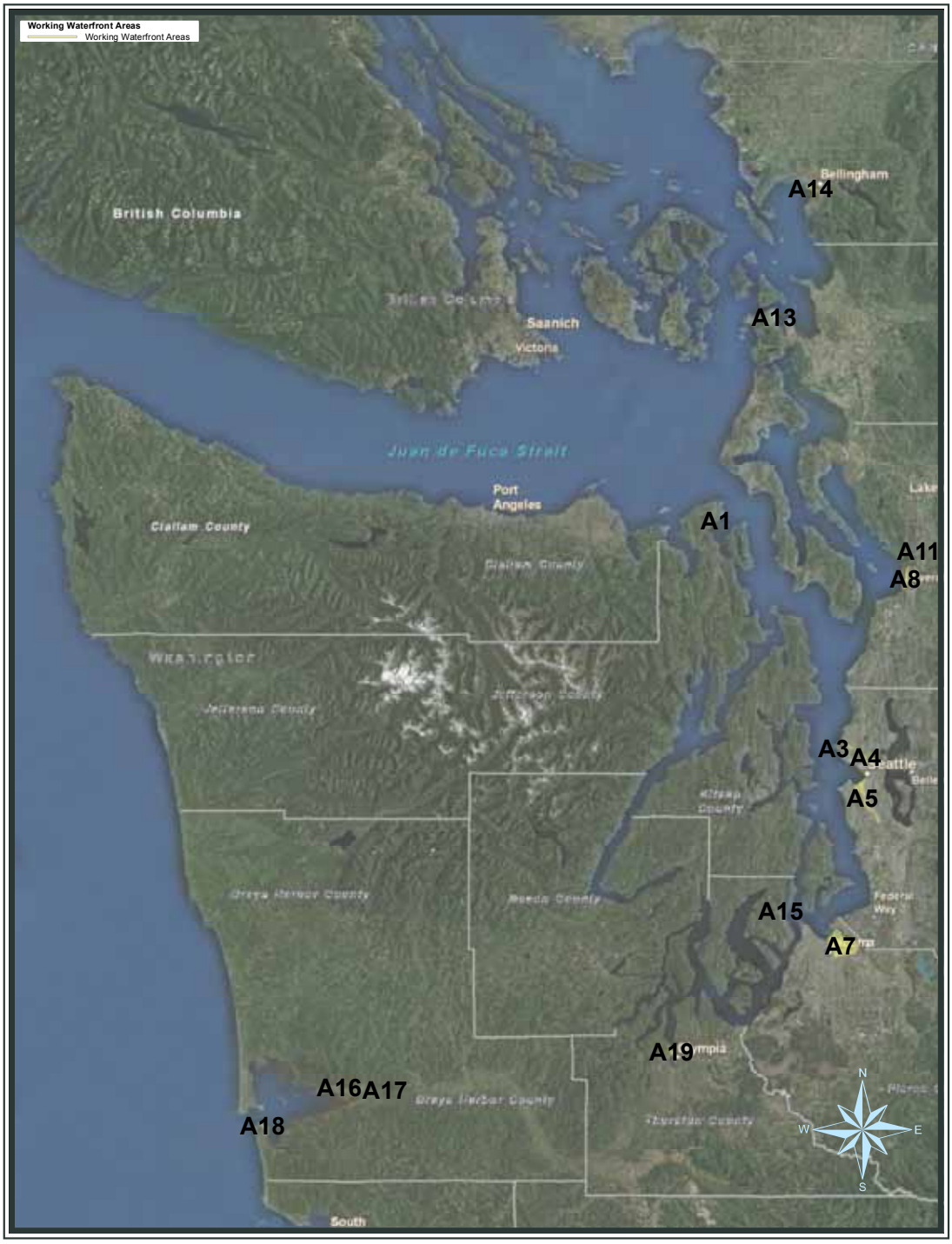
Land tax rates assessed as if in highest use, e.g. condos and marinas, can have a profound effect upon maritime industrial properties and areas when redevelopment pressures are high. As in Gig Harbor, where viability and interest in condo development is high, it can quickly displace working waterfront elements. This displacement has an effect on the visual character of the waterfront. As maritime industries move to other locations away from the traditional areas of practice they spread shoreline impacts. This displacement can also remove these industries altogether as they become no longer economically viable in competition with high end development.



	1800s	1900-09	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69	Unknown
Rehabilitation and Adaptive Use Candidates	21	25	7	12	11	3	3	0	32
Community Working Assets	21	27	18	19	16	14	11	1	72
Community Social Assets	11	6	7	3	4	1	0	0	10
Shoreline Management Issue Potential	18	31	28	25	11	19	9	3	85
Water-dependent hsitoric use(s)	3	14	14	9	5	11	3	0	44
Water-related historic use(s)	13	9	9	4	2	2	2	2	20
Water-enjoyment historic use(s)	1	3	3	5	2	1	1	0	6
Interpretive Destinations	40	37	21	14	12	21	4	0	33
Water Approach Defining	43	41	42	40	24	34	12	2	82

Table 3.9: Community Role(s) (Decade of Construction)

This table provides an overview by decade for surveyed properties of their physical needs.



Map 3.3: Working Waterfront Areas

This map illustrates locations of working waterfronts identified during field work.

Map 3.4: Working Waterfront Details

The maps on the following two pages show detail views of the areas identified in **"Map 3.3: Working Waterfront Areas"**. The yellow shading shows the general vicinity of the working waterfront area. Identification of these areas is not exhaustive. Instead the identified areas are meant to illustrate the variety, significance, and broad distribution of working waterfronts throughout the survey area.

Port Townsend vicinity (A1, A2).

Seattle vicinity (A3 to A6).

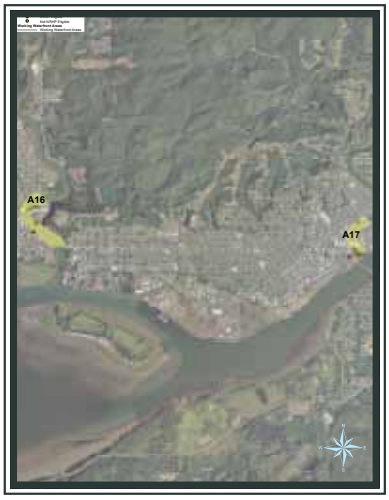
Tacoma vicinity (A7).

Everett vicinity (A9 to A10).

Anacortes vicinity (A12 to A13).

Bellingham vicinity (A14).

Gig Harbor vicinity (A15).



Hoquiam-Aberdeen vicinity (A16 to A17).

Westport vicinity (A18).

Olympia vicinity (A19).

Surveyors identified **community social assets** such as meeting halls and public fishing piers. A community social asset is a building or structure within the survey area having both a maritime connection and a role as a community gathering place. The use may be water-dependent, water-related or water-enjoyment based. Examples include public fishing piers, granges, parks, and meeting halls. Refer to **"Map 3.2: Community Role" on page 116** for locations.

Field teams collected this data to measure the extent of ongoing maritime related social activities that have a dedicated facility. These properties provide an important stabilizing presence for the community in terms of meeting halls and gathering spaces. Properties such as fishing piers provide an important means for the community to interact with the marine water, e.g. bay, harbor, inlet. These piers become especially important in areas where private development otherwise restricts public access to the shoreline.

Building conservation depends upon income producing use(s) to support ongoing maintenance. Often these are facilities that reside in non-profit, foundation or municipal and county government ownership, all of which have limited funds. Their public role however makes them excellent candidates for grants and other funding sources addressing planning and brick and mortar maintenance and preservation needs.

Surveyors identified **Shoreline Management Act (SMA) issue potential** due to over-water or immediately adjacent construction. Shoreline Management Act issues are surveyed properties residing over-water or immediately adjacent to the shoreline. We focused on the most immediate and clear issue areas and did not extend the sampling to a full 200-foot width.[1] The state's **Shoreline Management Act** was passed by the state Legislature in 1971 and adopted by voters in 1972 with the stated mission "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines." Refer to **"Table 3.8: Stabilization Needs (Decade of Construction)" on page 112** and **"Map 3.5: Shoreline Management Issues" on page 125**.

The state's marine shorelines represent an important convergence of natural and historic resource management. The intent of the following information is to provide a baseline set of the most critical data to aid planning and policy work related to natural and historic resources. The project downloaded current Department of Natural Resource's GIS data on Over Water Structures (Marine) on State Aquatic Lands to aid in property identification.[2] Our focus remained on potentially historic over-water structures and buildings.

[1] In the event additional properties within the full 200-foot width are needed, these could be obtained through DAHP's online **WISAARD** mapping portal.

[2] Washington State Department of Natural Resources, "Available GIS Data," accessed January 2011, http://fortress.wa.gov/dnr/app1/dataweb/dmmatrix.html.

Materials represent an immensely important component of this issue, both for marine ecology and historic preservation. From the ecology perspective, the goal is reducing or eliminating impacts to wildlife, in particular those covered under the Endangered Species Act of 1973. From the preservation standpoint, preserving historic overwater buildings and maintaining their integrity is the goal. From the property owner perspective, these materials must have a high durability, function in all seasons, and have a long lifecycle to justify replacement costs. The City of Gig Harbor's Historic Preservation Office and the Washington State Department of Natural Resources have been making tremendous progress in reconciling these often diverging goals. Their work provides a regional model.

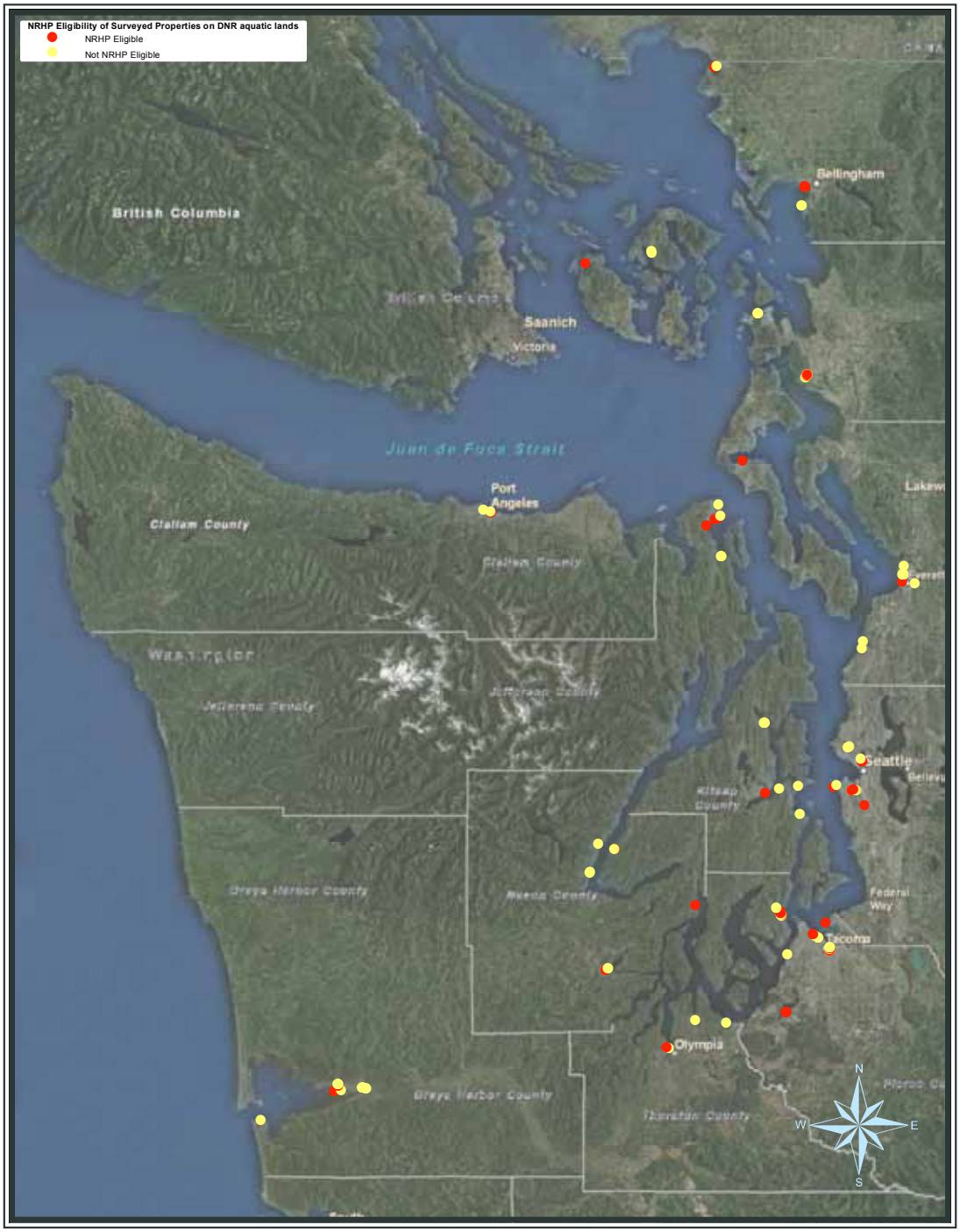
Concerns related to materials stem from both design (impacts to wildlife through shading) and composition (e.g. leaching of treated woods and metal coatings). Salvaged old growth timbers are emerging as a potential option. They are not treated, have a high durability, and are historically appropriate. A salvage program used by Washington State's Heritage Barns may provide model for maritime properties. The barn donor program salvages old growth timbers from barns that have collapsed or must be taken down. There is an extensive set of criteria and process relating to the deconstruction of these barns. Ultimately the materials are intended for use in Heritage Barns remaining in active agricultural uses. The intent has been to make barn maintenance and restoration both affordable and historically compatible for barn owners. This supports retention of these visually striking agricultural properties. The same holds true for over-water maritime buildings in ongoing marine related functions.

Historic use provides an important decision-making tool for cities and counties preparing Shoreline Master Programs for Shoreline Management Act compliance. The SMA states that "uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the states' shorelines..." Within the category of preferred uses, the SMA policy directs toward reserving the shoreline for water-dependent, related and enjoyment uses. To bring preservation and the SMA together we categorized historic use(s) of overwater historic properties according to the three preferred SMA uses listed above. The intent is to begin identifying these uses, their frequency, and the level of waterfront public access and interpretive benefit they provide.

1. Water-dependent historic uses include such examples as boat yards, fish and shellfish processing and cannery sites, ferry terminals, and net sheds.

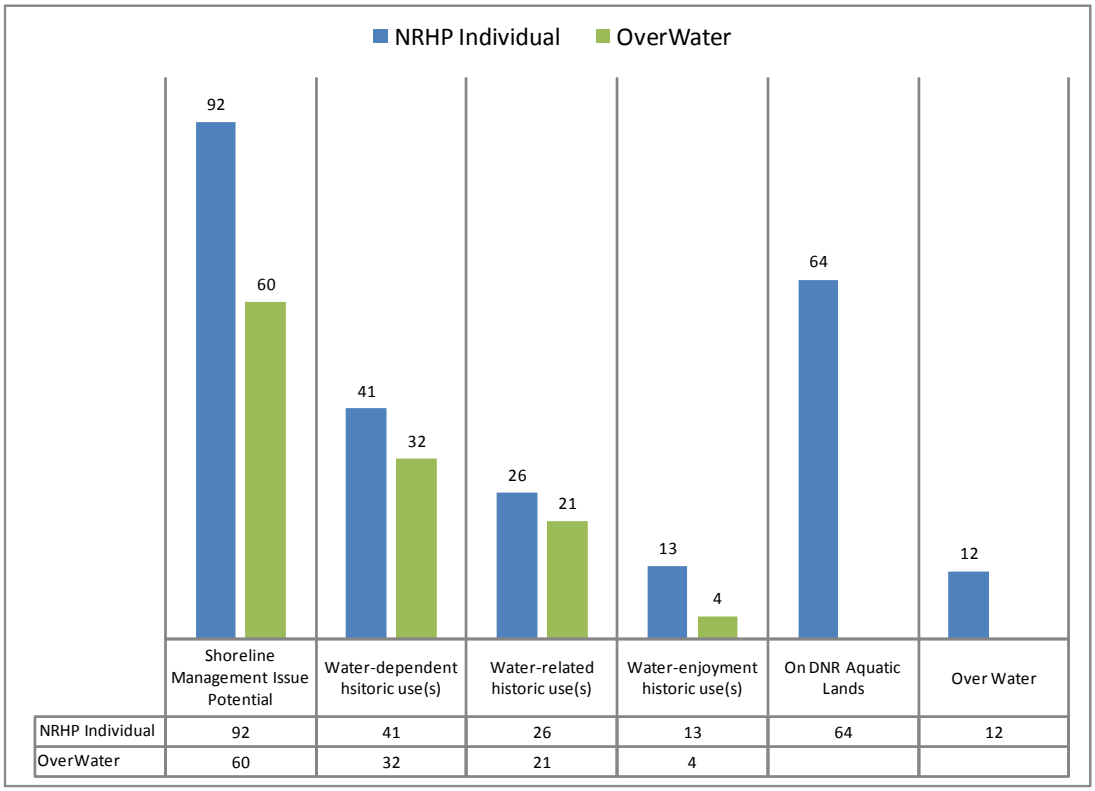
2. Water-related historic uses include chandleries and commercial buildings.

3. Water-enjoyment historic uses include fishing piers, boat launches, and boat houses for boat rentals and repair.10



Map 3.5: Shoreline Management Issues

This map illustrates locations of properties identified during field work as having potential shoreline management issues.

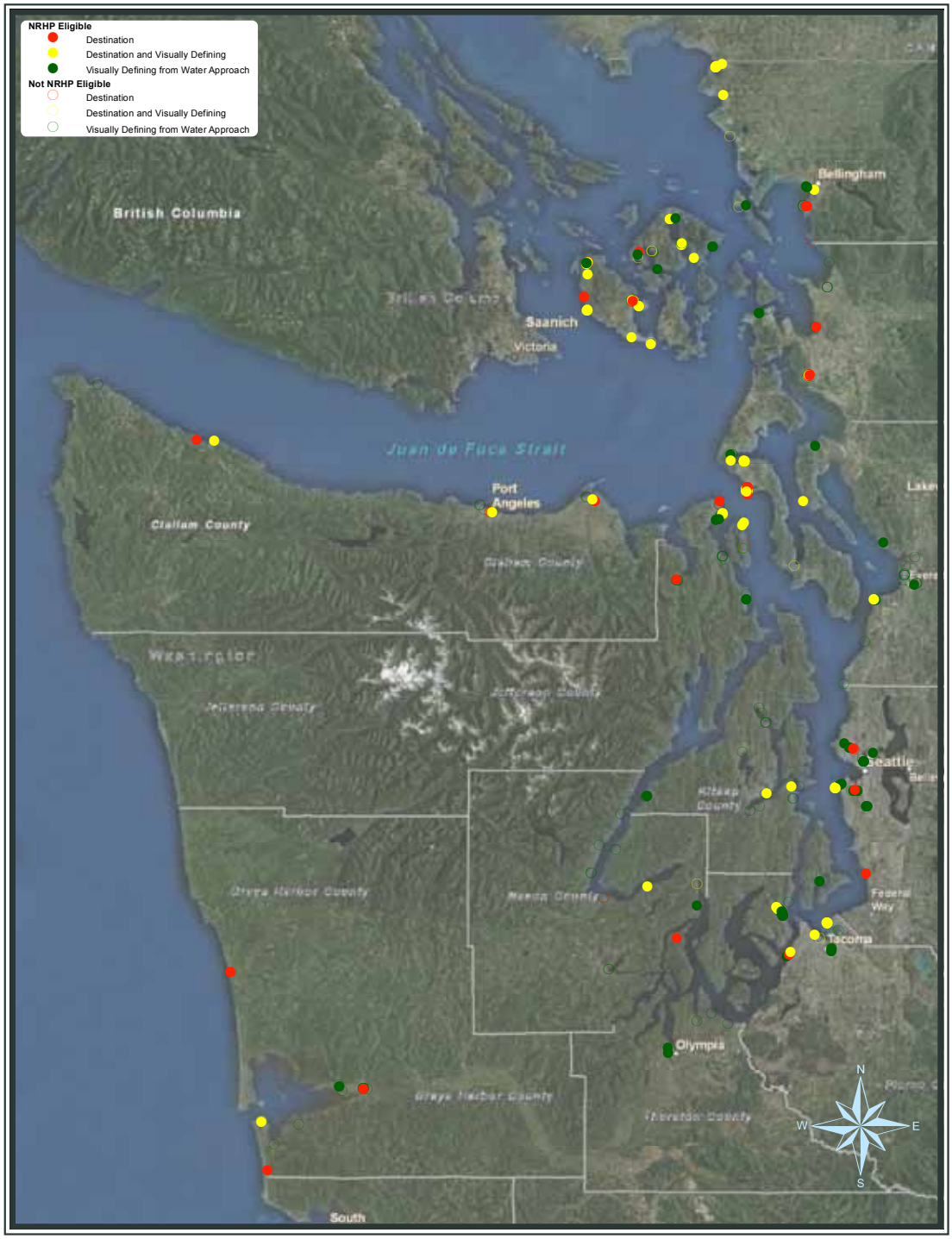


	Shoreline Management Issue Potential	Water-dependent hsitoric use(s)	Water-related historic use(s)	Water-enjoyment historic use(s)	On DNR Aquatic Lands	Over Water
NRHP Individual	92	41	26	13	64	12
OverWater	60	32	21	4		

Table 3.10: Shoreline Management

Whether a property is eligible to the NRHP and/or is over water are important planning criteria relative to Shoreline Management Act compliance. This table illustrates the quantities of properties whose proximity to marine water, historic use, and NRHP eligible could have significance impacts on how they are dealt with under the Shoreline Management Act.

INTERPRETIVE



Map 3.6: Interpretive Potential

This map illustrates locations of properties identified during field work exhibiting an important interpretive role due to their level of public access and unique features and/or their visual contribution to the water approach of a maritime community.

Addressing interpretive needs of maritime related historic properties is intended to support State Historic Preservation plan Goal IV Increase Efforts to Promote Heritage Tourism. Telling the story of Washington's maritime history serves multiple purposes. Educating citizens and visitors raises awareness for the vulnerability of these properties and the strength of connection between the quality of the natural environment and the health of our maritime industries. The variety of waterways within the survey area against the backdrop of both the natural environment and historic communities provide a compelling tourist destination. As with historic preservation, authenticity and integrity remain essential to a meaningful experience.

To this end we looked at the following criteria:

> Destination due to unique function(s), high integrity, design and non-intrusive public viewing or access capacity; and,
>
> Visually unique and defining for water approach to the community.

National Register Bulletin on interpretation **Telling the Stories: Planning Effective Interpretive Programs for Properties Listed in the National Register of Historic Places** was consulted in developing these criteria. Refer to **"Map 3.2: Community Role" on page 116** for locations and **"Table 3.9: Community Role(s) (Decade of Construction)" on page 119** for quantities.

Surveyors identified **historic properties providing destinations** due to integrity, function and location which are particularly well suited to telling the story of this region's maritime history. They are often properties in a commercial operation that directly engages the public, such as bed and breakfasts, restaurants, or other public to semi-public sites. All of the survey work for this project was accomplished from the public right-of-way. This provided the perfect test for visibility levels and whether a site had a capacity for non-intrusive public viewing or access. Many did not.

There is a strong need for story telling capacity relative to maritime history. Not all properties are equally suited to this capacity, especially private residences or industrial functions. The intent is to help focus activities toward those properties that not only have the capacity, but can benefit from the visibility, such as historic maritime related inns and retail businesses. This is not a comprehensive list and applies only to those properties surveyed. There are many properties previously surveyed that did not need to be updated that could fall under this category.

Surveyors identified **historic properties that are visually unique and defining** for water approach to community. The water approach to a community that developed

around maritime activities is vastly different than the land approach to the same community. Building orientation, functional organization, the stepped relation between waterfront commercial and residential bluffs, visibility of church and municipal building spires, and wharf and pier locations all have a greater meaning when viewed from the water. Port Townsend's Post Office, Customs and Courthouse provides a wonderful example. Commanding a prominent location on the top edge of the bluff overlooking the harbor, one is immediately aware when approaching from the water the significance of the customs house function. This is a view that most visitors to these communities remain totally unaware of. Shoreline development in these maritime communities focuses nearly exclusively on the view outward from the shoreline. Development concentrates along a narrow sliver of shoreline independent of upland and water-based views. This can significantly reduce waterfront access, diminish historic maritime community identify, and exert economic impacts on historic upland commercial and residential properties.

The intent of this section is to begin quantifying these visually character-defining community features. Managing change and ongoing development can benefit from considering these communities from the water perspective.

POLICY

A complex web of federal, state, and local laws challenge historic vessels, waterfront structures and shoreline development. Protecting heritage is only one of a set of values at play in this web, and has been hampered by a lack of information on the nature, patterns, quantity, and quality of those sites. With the maritime resource survey, a clearer picture of this collection of resources is available. The urgency is now to elevate awareness and recognition in order to and manage those resources within a larger planning context.

Most existing maritime-related historic sites are the remnants of commercial activity—fishing, logging, trade, or shipbuilding—that may not be viable today. These historic resources must find their place in a new world where water quality, endangered species protection, and habitat restoration are critically important. The vestiges of our maritime past may at times be considered at odds with environmental values, or with plans for revitalizing long-neglected waterfronts for economic development purposes. In reality, however, heritage and environmental goals can both be achieved by working with existing planning tools, providing information and training to local communities, state and federal agencies, and by engaging in discussions around specific issues, such as protecting archaeological sites, designating acceptable replacement materials, maintaining historic integrity of structures, and utilizing local historic preservation ordinances to identify key assets.

Two planning processes underway provide opportunities to move cultural resource protection into broader conversations. Local shoreline planning is now occurring in over 260 communities around Washington as the state's Shoreline Management Program is updated. The earliest structures of many communities are associated with historic maritime activity, and their ongoing or adaptive reuse is a major concern for local governments. Model strategies to manage these kinds of issues within the requirements of the shoreline plans are urgently needed.

The Department of Natural Resources is currently engaged in developing an Aquatics Habitat Conservation Plan (HCP) for the state. The plan, which requires the concurrence of federal agencies, will provide new guidelines for protecting habitat for endangered species. Historic structures, as well as archaeological sites (including historic shipwrecks and other submerged resources) are located on DNR aquatic lands. The HCP should take cultural resources into consideration when developing recommendations that might affect the ability to protect, maintain, or redevelop these resources.

These planning processes come at a great time for maritime heritage. Armed with the information from this survey, state and local governments in the survey area are

better equipped to make important decisions about incorporating the protection of the past with that of the future.

Aquatics Habitat Conservation Plan

Issues

- DNR six years into planning for a statewide HCP
  - Several technical reports, but no CR report
  - Several historic sites identified through Maritime Resource Survey – how to use/incorporate?
  - No evidence of tribal contact re: archaeological/cultural sites
  - Cultural Resource Protection and Management Plan (CRPMP) completed in 2003 and incorporated into Forest Practices HCP in 2005
- HCP will be subject to Section 106 Review
  - Goal: Incidental take permit from USFWS and NOAA
  - NEPA work/review scheduled for 2011
  - Will EO #05-05 play a role?
- RCW 79.105.210 includes provision regarding a preference for "water-dependent" uses hampers potential adaptive re-use of historic structures. Water-dependent (those requiring waterfront) uses are higher priority, while non-water dependent uses considered lower priority.
  - Activities historically dependent on waterfront, but which could not be located away from waterfront are considered water-oriented uses and are given equal priority to non-water dependent uses.
  - Over-water structures (single element) are considered non water-dependent
  - Over-water structures (complex) are considered water-dependent
  - Bridges considered non water-dependent
- DNR lease agreements do not typically address cultural resources concerns, although by law they have authority to impose lease conditions that conform to the State Constitution and applicable land management statutes. They may also deny uses either to protect identified natural values, commerce and navigation, and the greater public interest. Currently 4,000 individual leases (WA sold approximately 61% of tidelands and 30% of shorelands prior to 1971). DNR does not regulate construction of over-water structures but can prescribe land-use practices and building specifications. Such standards can augment regulatory

thresholds for site-specific habitat management criteria. DNR leases may include a Plan of Operations and Maintenance which may specify requirements related to maintenance and repair, operation and management practices, and materials. Leases are granted only after lesee has received all federal, state, and local permits. Could DNR leases reinforce local landmark designation or provide for review of National Register (NR) or NR-eligible properties, or add an inadvertent discovery clause for leases where archaeological resources are likely?

DNR Habitat Conservation Plan for Aquatic Lands

The Washington State Department of Natural Resources (DNR) is coming to the conclusion of a seven-year effort to develop a Habitat Conservation Plan (HCP) for the estimated 2.6 million acres of aquatic lands it owns and manages throughout the state. Refer to **"Map 3.7: DNR Aquatic Lands" on page 145** for a map illustrating maritime related properties identified as part of this survey on DNR aquatic lands.

Article XVII of the Washington State Constitution asserts state ownership of the beds and shores of "navigable" waters. The Washington Territory was largely surveyed between 1851 and 1881 by the General Land Office (GLO). This survey remains the basis of the determination of what is navigable. This has resulted in several legal battles over the years, with the courts acting as final arbiter for designating the boundaries of navigable waters. Section 79.105.210(4) of the Revised Code of Washington (RCW) gives DNR the authority to lease state-owned aquatic lands, subject to compliance with state land management statutes. In general, the aquatic lands owned and managed by DNR are those below the ordinary high water mark (OHWM). This excludes tidelands (much of which are privately owned), but encompasses shorelands and shellfish bedlands.

The HCP is a long-range (50 year) management plan that commits DNR to improving aquatic habitat for federally-designated endangered or threatened species. The HCP is a science and landscape-based strategy that seeks to balance the needs of communities with the needs of the affected species. It is a contract between the landowner (DNR) and the federal agencies responsible for endangered species protection – the National Oceanographic and Atmospheric Association (NOAA), and the US Fish and Wildlife Service (USFW). Upon approval of the HCP by these federal agencies, an Incidental Take Permit is issued under Section 10a(1)B of the Endangered Species Act. DNR has already developed an HCP for **forest lands**, which was approved several years ago.

Relationship to Cultural Resources

Over the past six years, DNR has developed several scientific papers on species and habitat that form the basis of policy recommendations within the plan. An initial analysis of "Potential Effects and Expected Outcomes" has been drafted, which lays out the early thinking on recommendations. To this point—early 2011—the planning is, however, virtually silent about cultural resources on or submerged in state-owned aquatic lands. For the most part, cultural resources on these lands are likely to be archaeological sites and over-water structures, including wharves and piers, pilings, and buildings. The HCP could affect the long-range protection of significant cultural resources. In some instances, HCP policies could help protect archaeological sites and submerged resources, such as shipwrecks. Long-term protection of historic over-water structures could, however, be negatively affected by restrictions on materials used in rehabilitation efforts, or on adapting structures to non-water dependant uses. These and other cultural resources issues should be addressed directly in the HCP process.

The HCP could be strengthened by a collaborative and collegial approach to protecting both habitat and heritage interests. The Maritime Resource Survey provides important baseline information to begin that collaboration. Fully integrating planning for cultural resource preservation and protection into the HCP could provide a framework for identifying these resources, mechanisms to alert DNR and local governments to their presence, and strategies to incorporate protection measures in future lease agreements. DNR could look to the Cultural Resources element of the HCP developed for forest lands for initial guidance. Addressing the issues now will speed NOAA and USFWS approval, as these federal agencies are required to consider the effects of the HCP on cultural resources through NEPA and Section 106 of the National Historic Preservation Act prior to executing the Incidental Take Permit that implements the HCP.

Section 106, National Historic Preservation Act of 1966

Section 106 of the **National Historic Preservation Act of 1966**, as amended through 2006, 16 U.S.C. 470, requires all federal agencies take into account the effects of planned undertakings on historic properties and afford an opportunity for the federal Advisory Council on Historic Preservation to comment on those undertakings. The intent of the Section 106 process is to balance the needs of federal agencies and the projects they initiate, sponsor, or license with the protection of significant historic properties. Agreements that avoid, minimize, or mitigate adverse effects are the usual outcomes of Section 106 review. Federal regulations provide a detailed process for federal agencies to determine whether historic properties are affected by proposed actions, and for initiating consultation with the principal players in an

activity - including state and local governments, the State Historic Preservation Officer (SHPO), Tribes, and other interested and affected parties.

Not all archaeological sites, artifacts, or older structures are eligible for the National Register of Historic Places. This standard must be met for Section 106 review to apply. Surveys are generally required to determine what National Register-eligible properties might exist. Research and documentation is sent to SHPO to make initial determinations, and if resources are determined eligible, the process beings.

If cultural resources that are listed or eligible to be listed on the National Register of Historic Places occur in a project, the agency undertaking is evaluated to determine whether the resource is adversely affected. If the federal agency determines an adverse effect, and SHPO agrees, consultation begins with that office, the federal agency involved, the federal Advisory Council on Historic Preservation, any affected Tribes, local governments, and other affected parties to reach an agreement that avoids or mitigates the adverse effect. A memorandum of agreement (MOA) is executed with all parties memorializing that agreement.

Satisfying Section 106 requirements does not alleviate federal agencies from fulfilling NEPA or compliance responsibilities. Nor does it remove requirements for SEPA review from state and local governments. NEPA and Section 106 processes are often closely aligned, however, and a Section 106 MOA may be referenced in NEPA documents as evidence that cultural resource concerns were identified and addressed. The DNR timeline for the HCP indicates that the NEPA process (and by extension the SEPA process) is to be completed in 2011. NOAA and USFWS will expect that process to include a full discussion of the implications for cultural resources given plan approval.

Shoreline Master Programs

Issues

- HCP's are creatures of the federal government. SMP's are state-mandated. Over 260 local governments must plan for their shorelines by 2014.
- Local governments have wide latitude in their SMP's. DOE is only a reviewer for compliance with federal/state laws. It is not a planning agency in itself.
    - RCW 90.58(2)(g) requires a cultural resource element in SMPs. However, the emphasis in **WAC 173-26-221 (1)(c)** is on archaeological sites. Historic sites are not discussed.
    - Does DOE review look carefully at the required CR element when reviewing plans?
    - Are SMPs subject to **EO #05-05**?

- Over-water structures may be retained, and is their dispensation for being a local landmark (refer to the City of Port Townsend's **SMP**)?

- Lack of coordination between DOE/DAHP in training/review of SMPs
  - Access to DAHP's **WISAARD** database?
  - Lack of maritime survey data?
  - Lack of relationship with tribes regarding archaeological sites?
  - Lack of training opportunities between DAHP/DOE for local governments.
- DOE focus on environment/habitat protection in SMPs
  - Priority for water-dependent uses also exists in SMPs. Water-related and water-enjoyment uses, while allowed, have lower priority.
  - Adaptive re-use and allowed materials/integrity potential issues
  - Public access a high priority (effect on archaeological sites, but helpful to historic over-water structures)

Shoreline Management Programs

The Washington State Department of Ecology (DOE) is responsible for reviewing and approving Shoreline Management Programs (SMPs) for more than 260 local governments throughout the state. These programs are the result of the Shoreline Management Act of 1971 (RCW 90.58), which declared the protection of the fragile shorelines of the state a high priority. For the purposes of the Act, shorelines generally refer to rivers, larger lakes, and marine waterfronts along with their associated shorelands, wetlands, and floodplains. The Act has three distinct purposes:

- Encouraging reasonable and orderly development of shorelines, with an emphasis on water-dependent and related uses that control pollution and prevent damage to the natural environment.
- Protecting the natural character of Washington shorelines, the land, vegetation, wildlife, and shoreline environment.
- Promoting public access and providing opportunities to enjoy views and recreational activities in shoreline areas.

SMPs are prepared and adopted by local governments, and reflect local goals for their waterfronts and shorelines. They consist of policies, regulations and permits that seek to balance environmental protection with development and the broader interests of all the citizens of the state. Currently, many local governments are in the process of updating SMPs, or have recently completed their program planning. DOE provides grants and guidance to communities, and reviews all programs for compliance with state laws. Upon acceptance by DOE, SMPs are generally incorporated

into local comprehensive plans. All SMPs are expected to be updated and completed by 2014.

Relationship to Cultural Resource Protection

SMPs are required to address several elements, including economic development, public access, recreation and circulation. RCW 90.58(2)(g) also requires, "An historic, cultural, scientific, and educational element for the protection and restoration of buildings, sites, and areas having historic, cultural, scientific, or educational values." Guidance on satisfying this element is provided by DOE in **WAC 173-26-221(1), Archeological and Historic Resources.** The guiding principle of this WAC is, "to prevent the destruction of or damage to any site having historic, cultural, scientific or educational value as identified by the appropriate authorities." SMPs are required to include policies and regulations to protect cultural resources, and may reference historic inventories for planning purposes.

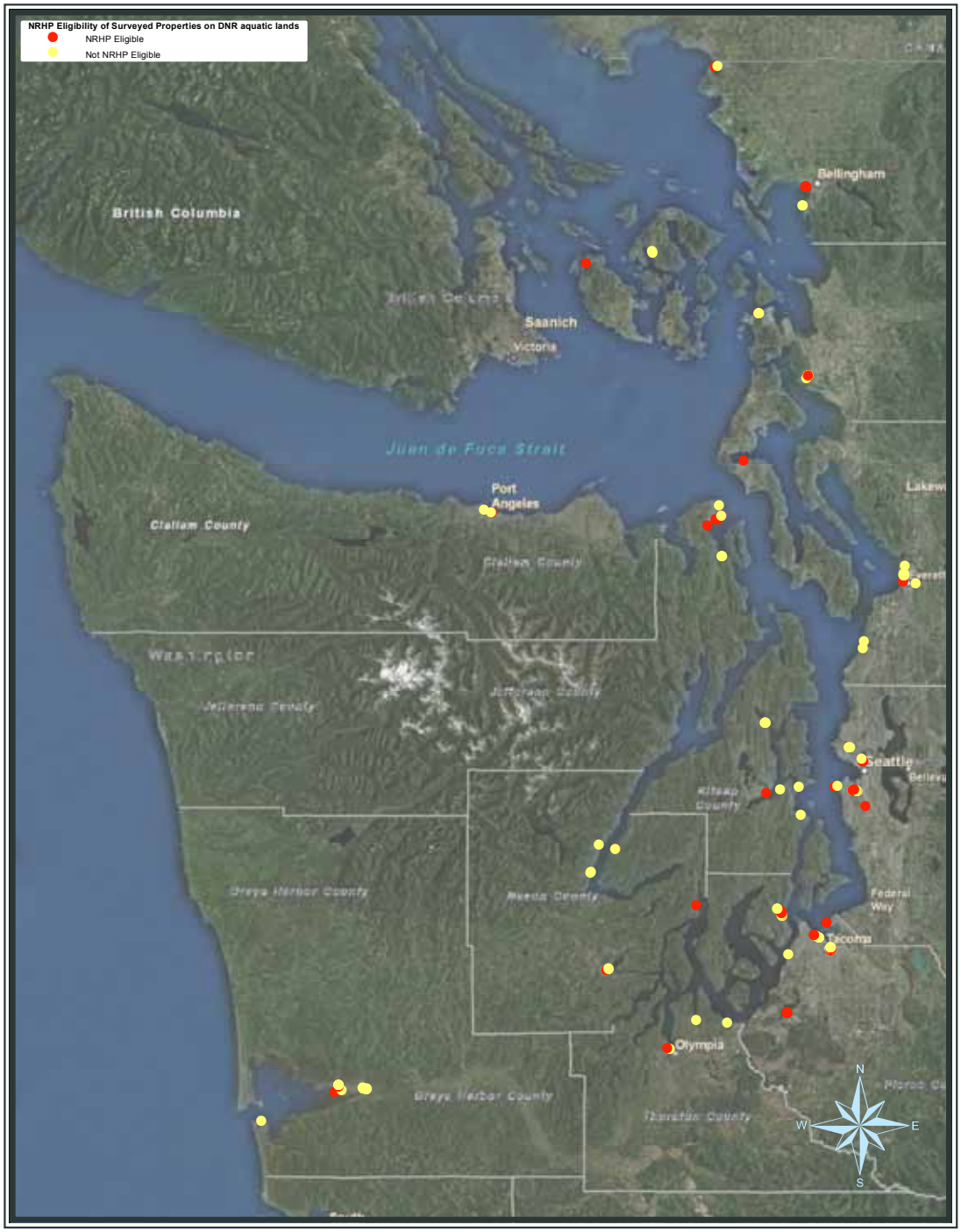
SMPs represent opportunities for collaboration and integrated planning between local cultural resource and environmental proponents. Numerous Native American villages and burials are known to exist along state shorelines. More are likely to be inadvertently uncovered in the future. The Act charges all local governments issuing permits in areas known to contain archaeological resources with the responsibility to require a site review by a professional archaeologist in consultation with area Tribes prior to permit issuance. Other state laws, including **RCW 27.44, Indian Graves and Records, and 27.53, Archaeological Sites and Records**, regulate discovery and disposition of archaeological sites, and should be referenced in all SMPs. In general, protecting archaeological sites in place is preferable to excavation, and in many instances, site protection may be entirely consistent with environmental protection activities.

As the earliest Washington communities are located on major waterways, some of the state's oldest built cultural resources exist along the waterfront in communities like Port Townsend, Coupeville, and Gig Harbor. While shorelines were used primarily for industrial purposes in early years, several communities are now rediscovering their long-neglected historic waterfronts and transforming them into tourism and economic development assets. SMPs can bolster those efforts by articulating goals and policies that strengthen the historic character of these areas, and devising strategies to meet the twin objectives of cultural resource and environmental protection.

The Maritime Resource Survey will be an important database for identifying historic waterfront resources in communities that are developing SMPs, but have yet to undertake their own cultural resource surveys. SHPO's **State Inventory of Cultural Resources,** accessible through the public map portal **WISAARD**, is another tool available to local governments in a GIS format. Communities undertaking SMPs

could greatly benefit from specific training or guidelines related to policies and regulations integrating cultural resource and environmental protection. DOE and SHPO might, for example, collaborate on general guidelines regarding acceptable materials for rehabilitation of over-water structures, permitted adaptive reuses of historic structures that may no longer have viable water-dependent uses, and standard, suitable methods for archaeological site protection.

The statewide SMP planning activity now underway is an opportunity to bolster protections for the state's oldest and most fragile cultural resources, strengthen community character and economic development activities, and direct new development in sympathetic ways to control pollution and reinforce environmental values.



Map 3.7: DNR Aquatic Lands

This map illustrates locations of properties identified during field work as potentially eligible for the NRHP and that reside on DNR aquatic lands.

Context Themes

Themes employed in this context statement stem from the Washington State Maritime Heritage Area Feasibility Study (Study) completed in 2010. Their continuation strives to build upon the Study's foundation while expanding the structure and content to provide a framework for National Register of Historic Places recommendations and informing community based heritage tourism and preservation efforts.

They are not intended as a comprehensive investigation of the state's maritime history. The breadth and depth of this subject matter is beyond a single report or book. This framework affords an opportunity for each community developing their individual histories to tie these stories into a larger story to facilitate comparison between communities and regions. This helps local resources to be understood in a broader context, appreciating both related examples and the rarity of what an individual community may have.

Subthemes highlight elements key to each theme. As we progress through the narrative of our region's maritime heritage, connecting stories with place occupies a central role. Experiencing history by standing at current and former maritime-related sites or retracing the paths of early explorers underscores the uniqueness of our regional history. Subtheme text is structured to help readers connect both intellectually and physically with the sites by their incorporation into the Community Maps. Historic photographs and early charts provide a remarkable visual library. Materials accessed for this report are publicly available through our state's cherished libraries, museums, and historical societies listed in the reference section.

Context covered in the following ten themes extends along Washington's marine shoreline from Grays Harbor along the Pacific Coast up and in along the Strait of Juan de Fuca, down into the Puget Sound and north up to the Canadian border. For clarity this report utilizes the terms Salish Sea and Puget Sound as defined below to address the inland marine waterways. All references to the Salish Sea within this report refer only to those portions of the Sea within the Study area.

Salish Sea: collective marine waters of Puget Sound, the Strait of Juan de Fuca and the Strait of Georgia as established by the United States Board on Geographic Names in 2009. Prior to 2009 the term Puget Sound was regularly used to refer to this collective body.

Puget Sound: marine waters south of Admiralty Inlet (transition line between Point Wilson on the Olympic Peninsula and Point Partridge on Whidbey Island), Deception Pass (transition line between West Point on Whidbey Island and Deception Island and Rosario Head on Fidalgo Island), and the south end of the Swinomish Channel (connecting Skagit and Padilla bays). Historically the term Puget Sound was used to refer to the collective body known since 2009 as the Salish Sea.

The following general definitions provide reference for the subsequent context.

Inlets: consist of a large arm of water extending into a land mass. These arms extend off a larger body of water.

Narrows: refers to a constricted passage often plagued with turbulent currents.

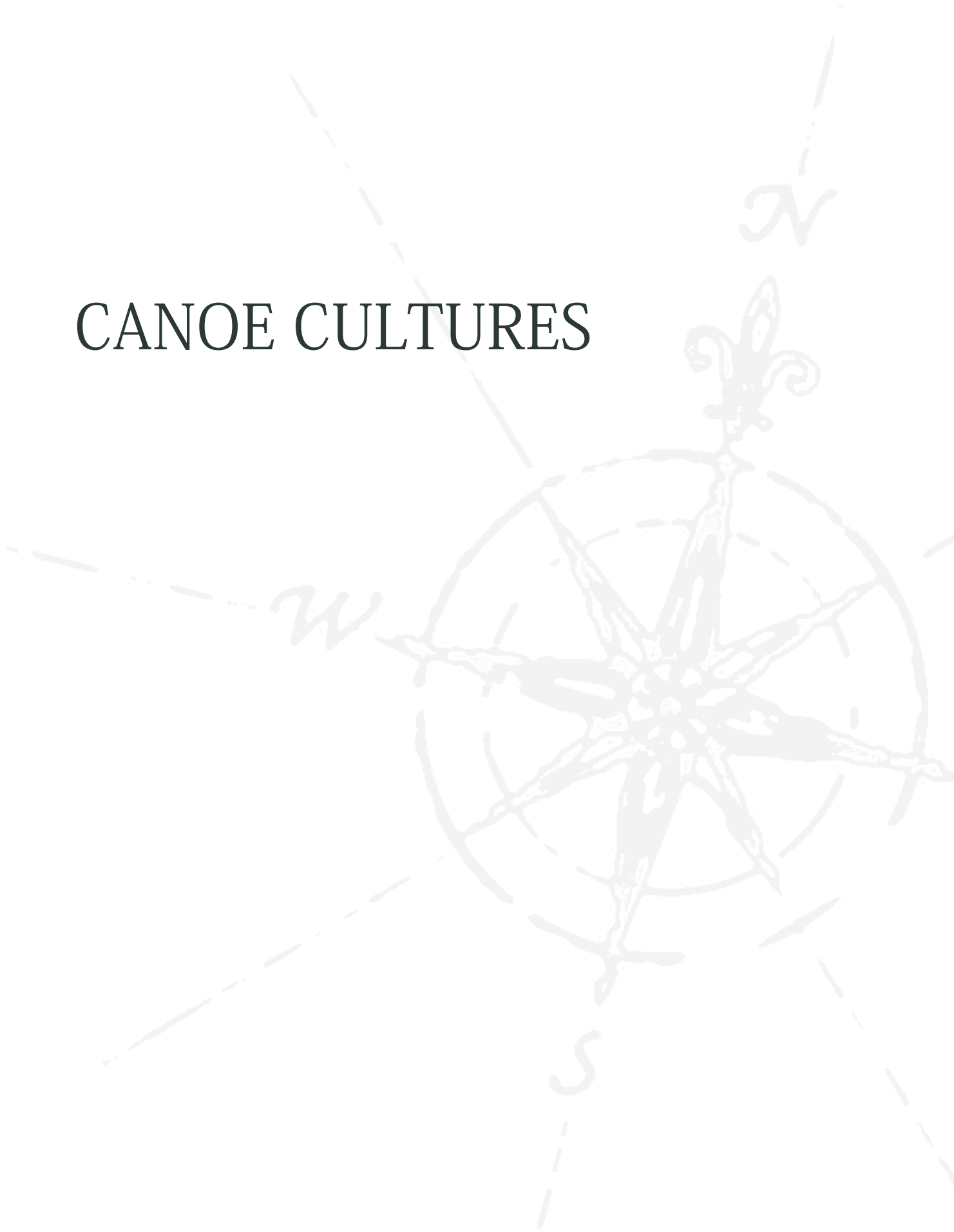
Passages: comprise the narrow waterways, open at both ends, between two land masses. They can be highly traveled corridors.

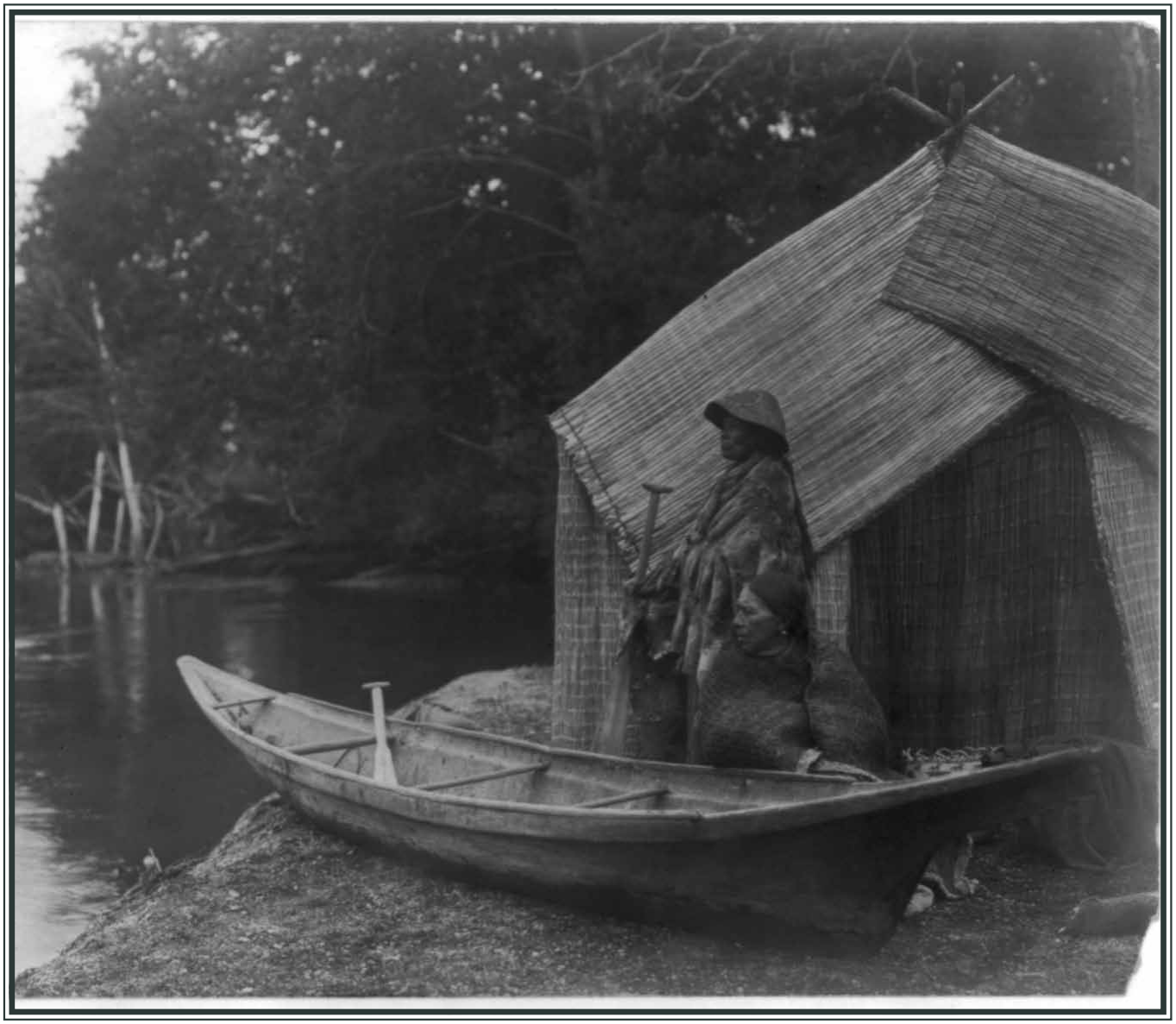
Reach: consists of an extended length of water without any course changes or bends. Ships under sail could move along the full length without changing tack.

Sea: an inland body of salt water.

Strait: a type of large passage

CANOE CULTURES



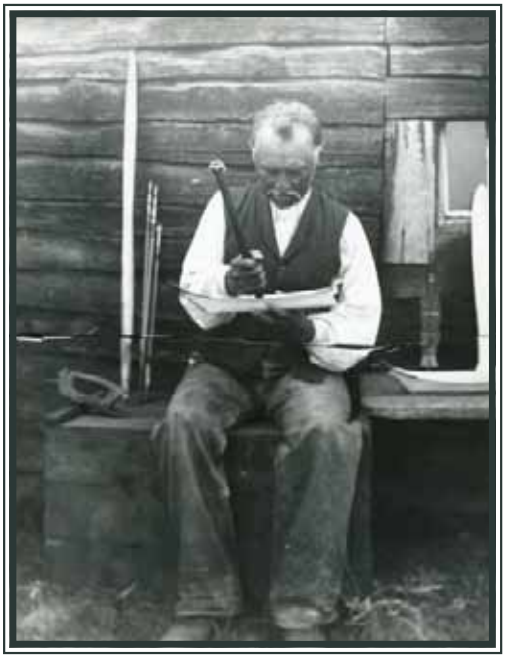


Circa 1913 image of a Skokomish Fishing Camp, taken by Edward S. Curtis. Image courtesy of the Library of Congress.

Long before there were roads or railways, Washington's Native American tribes connected across Washington's saltwater expanses in canoes of various sizes and shapes to visit extended family, to trade with other groups, to fish and to hunt. This saltwater canoe culture is unique to the Pacific Northwest, but canoe landing sites have few, if any, extant historic structures or buildings, making this earliest maritime heritage for Washington some of the most difficult to document. The most intact examples of traditional cedar canoes are either in private ownership or in museums. However, the close historic relationship between Washington's tribes and the saltwater is still reflected in the location of current tribal communities, including the Tulalip Reservation at Tulalip Bay, the Makah at Neah Bay, and many others.

The Coast Salish, which includes many tribes and nations, often referred to the water in their names for people and places. The Sound itself was called "Whulge," or "big saltwater," in the Lushootseed tongue.[1] Virginia Sharff and Carolyn Brucken attest in *Home Lands: How Women Made the West* that the various native peoples of the Northwest Coast "created a dense landscape of villages stretched along shores and watersheds and connected through kinship, trade, ceremonial gatherings, and the villagers' ability to travel with the tides and currents."[2] Various sizes and types of canoes served diverse functions, including transportation, trade material, fishing, whaling, and burial rites.

Canoe culture was nearly lost with the advent of the 20th century, which brought drastic changes in the regional landscape and transportation in particular. Few traditional canoes had been made or used for 50 years or more when, in the late 20th century, a revival of annual tribal canoe journeys reinvigorated some of the historic canoe construction and saltwater travel traditions.



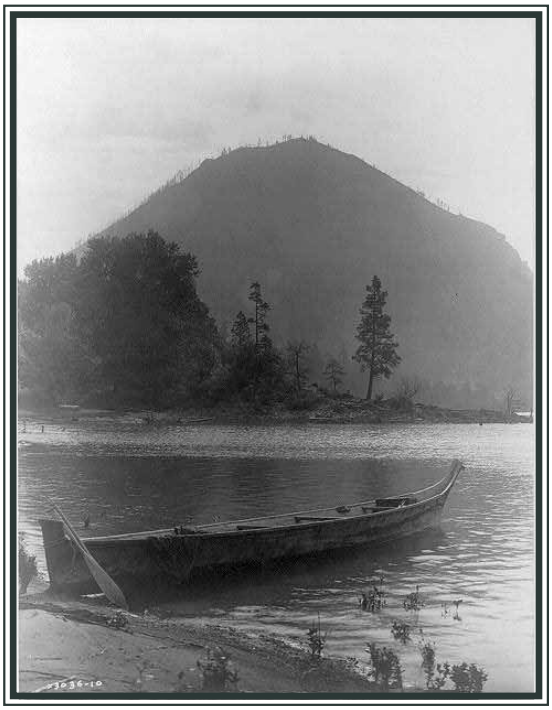
Circa 1900 image of a Makah man (Anthony Wispoo) carving a miniature canoe, taken by James G. McCurdy. Image Courtesy of the Washington State Library Digital Collection and the North Olympic Library in Port Angeles.

[1] Virginia Sharff and Carolyn Brucken, *Home Lands: How Women Made the West* (Berkeley: University of California Press, 2010), 97.

[2] Sharff and Brucken, *Home Lands,* 94.

Cultural Significance and Decorative Traditions

For several thousand years, the native people of the Northwest Coast relied heavily on natural resources from the ocean, rivers, and the land.[3] The craft of making dugout canoes from cedar logs is a prime example of this, representing a merging of land with water. Although canoes were the primary means of transportation for native peoples and later for the European fur traders and voyagers, they also had special roles in a tribe's cultural life, shown in the decorations on canoes and sometimes paddles. Canoes were also important objects of intertribal trade. In societies where rank was partially defined by birth and partially by accumulated wealth, canoes were property potentially acquired instead through skill and personal effort.[4]



Circa 1910 image of a typical Northwest (Nootka) canoe style, taken by Edward S. Curtis. Image courtesy of the Library of Congress.

North American canoes in general have achieved widespread recognition as symbols of spiritualism, freedom, and the blending of art with function, and Northwest Coast dugout canoes in particular embody beauty and performance. Logs were worked and sculpted to be fast and stable on the sea, able to withstand waves and wind. Cedar woodworking was a sacred art, expressed not just in canoes but also totem poles, paddles, and masks. Among the Salish people of Washington, men and women both used and decorated paddles with painted spiritual references.[5]

Canoes also played a central role in some burial traditions. The most common burial method was to lay the deceased in a canoe, which was elevated from the ground on a platform. Sometimes, a second canoe was inverted and placed over the top of the first. The Quinault used old canoes for burials, whereas functional canoes of the deceased passed ownership to relatives. Other possessions of the deceased were normally destroyed to facilitate passage to and use in the afterlife.[6]

Examples of traditional canoes and paddles, some of them replicas, may be seen at various tribal cultural centers, including the Duwamish Longhouse in West Seattle and the Makah Cultural and Research Museum on Neah Bay. There are also native canoes on display at some maritime heritage centers, such as the Center for Wooden Boats on Lake Union.

---

[3] Julie K. Stein, *Exploring Coast Salish Prehistory: The Archaeology of San Juan Island* (Seattle: University of Washington Press, 2000), 104.

[4] Pliny Earle Goddard, *Indians of the Northwest Coast* (New York: Cooper Square Publishers, 1972), 92-93.

[5] Jim Poling, Sr., *The Canoe: An Illustrated History* (Woodstock, VT: The Countryman Press, 2000), 9, 15, 18.

[6] Ronald L. Olson, "The Quinault Indians," in *The Quinault Indians and Adze, Canoe and House Types of the Northwest Coast* (Seattle: University of Washington Press, 1967), 111-112.

Types of Canoes

The Northwest Coast native peoples used canoes for fishing along rivers, hunting ocean mammals, visiting relatives, and moving between seasonal encampments, not to mention day-to-day transportation. For these various functions, craftsmen, as well as everyday canoe users, made a variety of canoe types, ranging from shallow to deep, short to long, and stable to nimble.[7] The physical features of a canoe could indicate not only its use but often its origin.

A canoe's form and design could sometimes reveal its origin. For example, Nootka and Salish canoes had vertical sterns and projecting bows, while canoes from further north had raised, projecting bows and sterns.[8]

According to Sharff and Brucken, "Salish men and women crisscrossed the waterways in canoes they designed and built to navigate both the swells of the open ocean and the sometimes raucous rivers. Families built small, efficient cedar canoes to use in their hunting and gathering. Skilled artisans constructed the larger saltwater canoes that could hold a hundred people." There were also canoes specifically designed for women and the function of seasonally relocating their households.[9]

1900 image of a Makah couple returning from fishing at Neah Bay, taken by Anders B. Wilse. Note the folded down sail. Negative #NA730. Image courtesy of the University of Washington, Digital Collections.

Hunting canoes, built for one or two men, were short (17 feet long or less) whereas larger canoes were over six feet wide, three feet deep and ranged from 40 to 60 feet long. They could carry heavy cargo (up to 2 metric tons).[10]

Various groups used the "shovel-nose" type of canoe, including the Quinault, Snohomish, Skykomish, Snoqualmie, and many more. These fast river canoes, with relatively flat bottoms, mostly replaced the sharp bow variety because of improved steadiness for gill net fishing.[11]

---

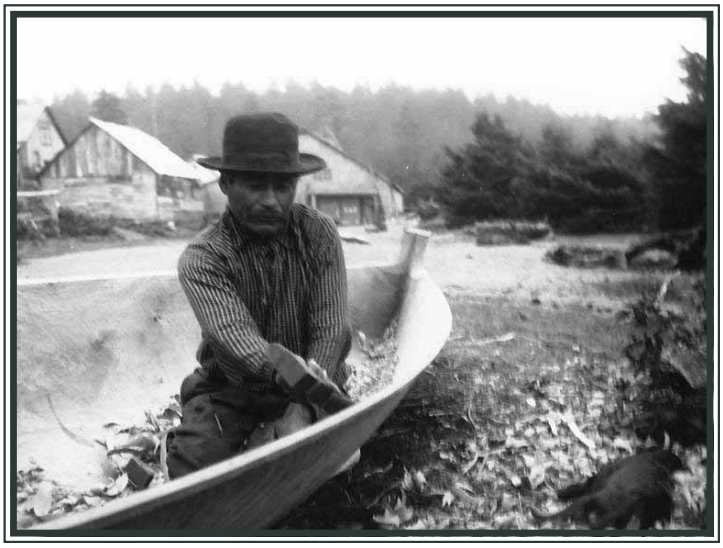
[7] Although the dugout canoe appears to have been the predominant type along the Washington coast, there is evidence of an alternate type, the pointed bark canoe, being used in the Northwest by the Salish-Chinookan peoples. Otis T. Mason, "Pointed Bark Canoes of the Kutenai and Amur," in *Report of the U. S. National Museum,* by Richard Rathburn (Washington, DC: U. S. National Museum, 1899).

[8] Goddard, *Indians of the Northwest Coast.*

[9] Sharff and Brucken, 94-95.

[10] Poling, *The Canoe,* 15.

[11] Olson, "The Quinault Indians," 67.



1905 image of Quileute canoe maker Talicas Eastman on Quileute Reservation, taken by Edmond S. Meany. Negative #NA1266. Image courtesy of the University of Washington, Digital Collections.

It is unclear how many canoe types the native people of Washington used before European contact. There were clear divisions into two types—ocean and river—but it's possible to divide them even farther: ocean/whaling; sealing/small ocean canoe; river; small river/duck hunting canoe; sea otter hunting canoe; and possibly a racing version. All of these types appear to have been based on a similar model but with modifications, mostly in size, to suit their intended function. Differences in the stern (projecting or vertical), the shape of the bottom (flat or rounded) and the sidewalls are some of the tweaks that differentiated canoe uses.[12] Ocean canoes had extra sturdy bows and high, built up sidewalls for carrying whaling gear and eight crewmembers through large waves. Sealing canoes required less gear and fewer crew.[13] River canoes were sturdier, with thick bottoms which would hold up to dragging over river bottoms through shallow stretches. These canoes held fewer people, as hunting and fishing along rivers did not require large groups and speed was more important than stability.[14]

Canoe Construction

The elements of canoe construction—materials, tools, techniques, and the craftsmen themselves—all help tell the story of canoe culture in the Pacific Northwest, particularly along Washington's shores. Historically, many tribe members learned how to make canoes, but there were also expert craftsmen whose canoes were in demand, usually for their quality, beauty and specialized use. Traditional tools included wood, stone or bone implements (maul, wedge, chisels, etc.), later replaced by steel versions. Adzes and chisels, along with fire, helped hollow out the massive cedar logs which would transport people and goods around the waterways of the Northwest Coast.

Red cedar was the most common wood for Northwest canoe construction. Easy to work with, having a soft, usually straight, grain, cedar is durable, resistant to decay, and holds up well to prolonged water exposure. But it is easily split, making canoes vulnerable to damage from large rocks or too much sun exposure. Canoe bows and

[12] Olson, 67-68.
[13] Olson, 67.
[14] Olson, 68.

sterns, being end-grain pieces, tended to rot over time and required more frequent repairs than the body. With good care and maintenance, canoes lasted about 10 years in active use.[15]

Due to the frequent and primary use of canoes for getting around, many families built their own. Almost all Quinault men learned how to make canoes, though some became experts with sought-after skills. The type of canoe being built sometimes determined the maker as well. Small canoes were easy to build compared to the larger canoes, which traversed open water for whaling, trading or simply transporting large numbers of people. The Nootka people of Vancouver Island were the master craftsmen of the largest open-water canoes and provided most of this type to the native people of Washington. Nootka canoes changed hands through trade among various tribes, eventually reaching the Oregon coast. Other tribes also crafted ocean canoes.

In general, the process of dugout canoe manufacture was similar among the Northwest tribes. A cedar log was cut or burned to the appropriate length and split, with each half making one canoe. According to Olson, bow and stern pieces were fashioned separately and attached later. The butt end of a log, having a higher density, was always used for the canoe bow. Fires built along the flat surface burned out most of the unwanted wood mass, except at either end where the fire might damage the narrower hull. Alternately, canoe makers would remove excess wood through notching and splitting. Canoe makers shaped the exterior and interior evenly, with hull walls of equal thickness on either side to avoid listing. Both ocean and river canoes featured bottoms which were thicker than the sidewalls, in order to steady the craft. Adzes were used to shape the final form.[16] Next, the wood needed to be softened so that the hull could be spread and thwarts (crossbars) inserted. To accomplish this, a canoe was partially filled with water and hot rocks to steam the wood. For larger canoes, boat depth could be built up with added gunwales.[17]

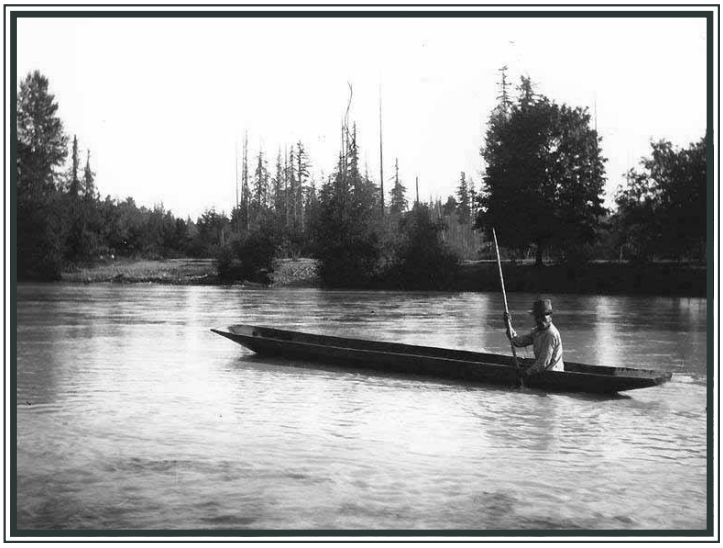
The most common type of canoe paddle traditionally used along Washington's coast features a slender profile, with short handle (carved separately), long blade

CANOE CULTURE RESOURCES

Examples of different types and sizes of traditional canoes, some of them replicas, can be found at various tribal cultural centers: the Squaxin Island Museum Library and Research Center in Shelton, the Duwamish Longhouse in West Seattle and the Makah Cultural and Research Museum on Neah Bay.

More information on canoe culture may be found at tribal cultural centers, including the Suquamish Museum and Cultural Center and the Hibulb Cultural Center (to open in 2011). There are also native canoes on display at some maritime heritage centers, such as the Center for Wooden Boats on Lake Union. Please contact or visit these centers for more in-depth background on the range of canoe types built and used throughout Washington's coastal waterways.

[15] Olson, 70.
[16] Olson, 69.
[17] Olson, 70.



1905 image of Nisqually Sam P'yelo paddling a dugout canoe, taken by Edmond Meany. Negative #NA1225. Image courtesy of the University of Washington, Digital Collections.

and rounded tip. Crews, however, used slightly longer paddles with a tapered point for ocean travel. The ocean paddle is considered by some to be a newer form ("northern paddle") than the first and may have been adopted from the northern tribes, along with ocean canoes. The Quinault, used a third paddle type that had a wide bottom and double-pointed tip. It accompanied the "shovel-nose" canoe, which the Humptulips and other migrant tribes (Lower Chehalis or Chinook) may have introduced to the Quinault reservation by the late 1800s. Quinault craftsmen preferred yew, ash, and soft maple for making paddles. A carver made paddles approximately the length of a man's arm span, with stern paddles slightly broader and longer than bow paddles.[18] In some instances, people used poles instead of paddles to propel canoes, such as along river rapids or shallow ocean shores. Young hemlock wood, in lengths of 10 to 14 feet became canoe poles after being seasoned, the handles tapered, and the tips charred to harden them.[19]

It is not clear if sails were used before European contact on native canoes. The practice employed by the Quinault and other tribes of sewing thin boards together for wooden sails, or using cedar mats, is often cited as evidence for pre-existence. However, these sails are not what we think of today, nor were they used as modern-day boaters do. The wooden or cedar mat sails were propped or attached to short masts at right angles to the boat, and only caught a wind from the stern.[20] Other pieces of canoe equipment included bailers (design varied by tribe but usually wooden) and buoys. These buoys were mostly found on ocean-going canoes. Animal bladders or sealskins attached to the canoe sides helped steady the vessel and kept sidewalls elevated in rough waters.[21]

The **Duwamish Longhouse** in West Seattle and the **Makah Cultural and Research Museum** on Neah Bay both have exhibits on traditional canoe construction. There are also native canoes on display at some maritime heritage centers, such as the **Center for Wooden Boats** on Lake Union. More information on canoe culture may be found at tribal cultural centers, including the **Squaxin Island Museum Library and Research Center**, the **Suquamish Museum and Cultural Center**, and the **Hib-**

[18] Olson, 71.
[19] Olson.
[20] Olson, 72.
[21] Poling, 18.

ulb Cultural Center (to open in 2011). Today, there are still canoe and paddle carvers keeping these skills alive for tribes in Washington.

Canoe-Based Fishing and Whaling

Techniques may have varied by tribe as well as gender and time period, but the native people of Washington and the Northwest in general all depended on canoes for at least some of their fishing, and they in turn depended on salmon for sustenance, lore, and trade with other groups. Many groups harvested mussels, clams, oysters, and other kinds of fish besides salmon, both for subsistence and intertribal trade. Besides harvesting fish and shellfish, canoes also allowed many tribes to hunt waterfowl and small marine mammals. Whaling, however, required special canoes and is fairly unique to the Makah among Washington tribes.

Ocean-going canoes for whaling tribes usually carried crews of eight people but had to be able to carry much more than that in weight. They had to be sturdy and stable enough to withstand large waves but nimble enough to avoid thrashing whale tails. Narrow hull designs allowed the canoes to be fast enough to catch a whale. A harpooner sat at the bow, with skilled paddlers keeping the canoe alongside the prey. One historical account of Native American whalers relates that the canoes traveled about 50 miles (16 leagues) in a day.[22]

1913 image of Quinault fishermen and canoe, taken by Edward S. Curtis. Image courtesy of the Library of Congress.

The position of whale harpooner was sometimes inherited in the male lineage and translated to fairly high social status. Within some groups, a harpooner's social behavior and diet were closely regulated. Preparations for whaling season involved ceremonial restrictions for the harpooner, including living apart from the village in a special place, surrounded by significant items and praying for success.[23] These preparations helped ensure the success of the hunt, which involved many inherent dangers.

The use of ocean-going canoes for trade, transportation and subsistence is illustrated by the Makah tribe of Cape Flattery. Historically,

> *The Makah were primarily a seafaring people who spent their lives either on the water or close to the shore, seldom venturing more than a few miles inland. Most*

[22] Poling, 17.
[23] Goddard, 59.

of their subsistence came from the sea, where they fished for salmon, halibut, and other fish, and hunted for whale and seal. The excess over what they needed for consumption within the village was traded to other tribes in return for many of the raw materials and some of the finished articles used in the daily and ceremonial life of the village.[24] —Elizabeth Colson in The Makah Indians, A Study of an Indian Tribe in Modern American Society

According to Colson, the Makahs' geographic location and mastery of open-water travel made them "the middlemen in an extensive coastwise trade which ran from the Columbia River north to Nootka Sound, and they also had extensive trade contacts with the peoples of Puget Sound."[25] Makah whaling traditions set the tribe apart, with their elaborate hunting techniques and the central role whaling played in their culture. Makah whalers had material riches as well as prestige and strong guardian spirit(s)/supernatural powers. Historically, few tribe members became successful whale harpooners, whereas every man fished for halibut, which was an important economic and food source but less prestigious than whaling.[26]

Tribal Journeys

Canoes dominated in Washington for a long time; however, other types of boats (rowboats, power boats, etc.) eventually replaced them. With European and non-native American settlement came an ever-increasing road network, oriented towards wagons and, later, cars. By the 1930s, cedar canoes became a rarity in the Salish Sea, and had almost completely disappeared from use by the 1980s. After years of struggling to have treaty rights honored, Washington tribes began a comeback, both legally and culturally.

One of the signs of this cultural revitalization came in 1989, when tribal leaders organized the "Paddle to Seattle." This modern-day event honored the ancient but long-abandoned practice of one tribe hosting a celebration, to which tribes from all over the region traveled via canoes. The rebirth of an age-old maritime tradition began relatively small, when nine canoes paddled from Suquamish to Seattle as part of the Washington centennial celebration. For some tribes, the 1989 journey meant having to construct a canoe for the first time in almost a century. That paddle journey has become an annual event, now known as Tribal Journeys. In 2009, the 20-year anniversary of the "Paddle to Seattle," participation had grown from nine to approximately 100 canoes from around the Northwest, including Oregon, Washington, British Columbia, and Alaska. Each year, the destination and host tribe change. Some paddlers begin the journey weeks ahead of the final gathering, stopping along

[24] Elizabeth Colson, *The Makah Indians: A Study of an Indian Tribe in Modern American Society* (Minneapolis: University of Minnesota Press, 1953), 4-5.

[25] Colson, *The Makah Indians,* 5-6.

[26] Colson, 5.

the way for various visits and events. The trip retraces historic trading routes for tribes of the Northwest Coast, some of them hundreds of miles long.

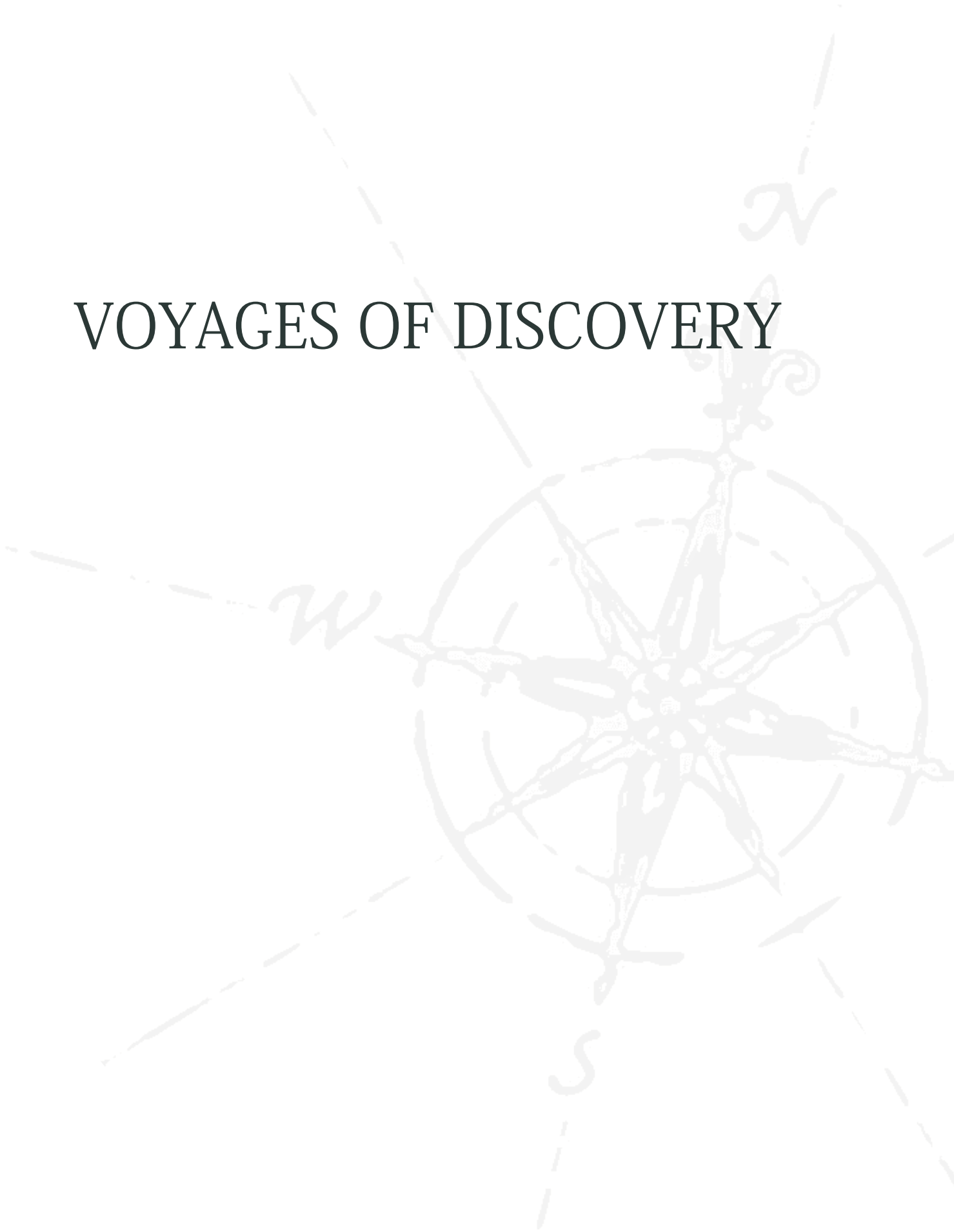
Undated image of a canoe with cargo near Port Townsend. Image courtesy of the North Olympic Library, Port Angeles.

Along the way, celebrants explore other aspects of Native American heritage in this region. Every year, ceremonies include a potlatch (gift-giving festival) and formal coming ashore process. The histories of various sites along the coast are also interpreted. Mukilteo (Muckl-te-oh, or "good camping ground") served for many years as a gathering site for Native American meetings and trade activities. Today, the Mukilteo Lighthouse Park (historically also known as Point Elliott) has served as a waypoint for canoes to gather during the annual Tribal Journeys. It is also the site of the 1855 Treaty of Point Elliott meeting, which brought 82 Native American leaders from around Puget Sound to sign away most of their land in exchange for relatively small reservations and fishing/hunting rights in perpetuity. The use of sites such as Mukilteo for modern Tribal Journey activities highlights the historic significance of Native American history up and down the Northwest Coast.

The annual Tribal Journeys paddle event normally occurs in the summer or early fall, and hosting responsibilities rotate among the regional tribes. For more information, please visit **tribaljourneys.wordpress.com/** Canoes from various tribal centers, including the Duwamish Longhouse and the Squaxin Island Museum Library and Research Center, travel with Tribal Journeys each year.

Native Americans, the first and long-time inhabitants of the Northwest Coast, mastered the art of canoe making. Northwest canoe cultures all but disappeared until the late 20th century, but the Tribal Journeys event has revived interest in tribal heritage, particularly in skills surrounding native canoe construction techniques. Now, canoes are again built and paddled from far off locations, retracing ancient trade routes and reconnecting native populations through the Northwest waterscape.

VOYAGES OF DISCOVERY



PACIFIC NORTHWEST EXPLORATION TIMELINE

ca. 1579 English navigator Sir Francis Drake sailed up the west coast of North America, reportedly reaching 48° North (today known as the Strait of Juan de Fuca).

1592 Fabled voyage of Juan de Fuca, Greek pilot for a Spanish ship, who supposedly found the entrance to the strait later named for him.

1725 Bering's first expedition (sailing didn't begin until 1728); maps by Petr Chaplin; they did not see North America this time.

1741 Bering and Chirikov's expedition (Bering's second), claimed Alaska for Russia.

1774 Juan Perez commanded the *Santiago* up and along the Northwest coast to Nootka Sound and was the first Spaniard, and first European south of 55° North, recorded as sailing in this area.

1775 Bruno de Hezeta, Bodega y Quadra, and pilot Juan Perez landed on the Olympic Peninsula near Point Grenville. Hezeta's voyage mapped the coastline approximately between current day Grenville Bay and Cape Elizabeth. First European to see the mouth of the Columbia River.

1778 Cook's third expedition mapped the west coast of North America, from California north to the Bering Strait. Bypassed the Strait of Juan de Fuca. Named Cape Flattery.

1787 Charles Barkley found Strait of Juan de Fuca.

1788 John Meares explored part-way along the Strait of Juan de Fuca

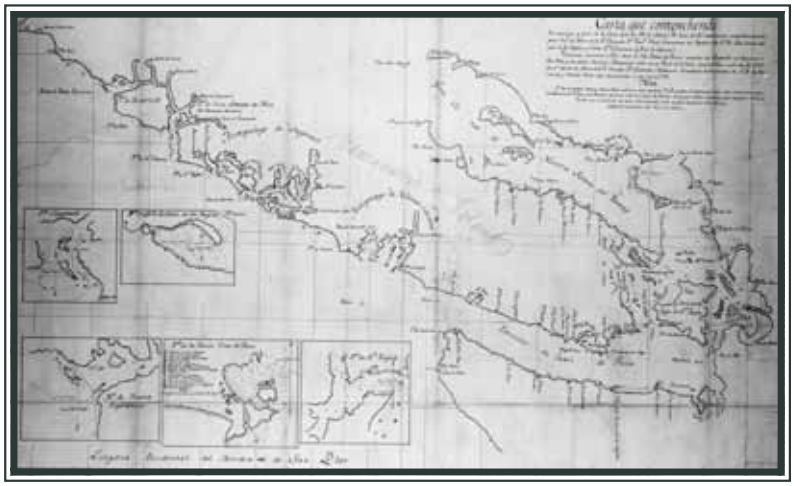
1792 George Vancouver's expedition charted the Strait of Juan de Fuca, Admiralty Inlet, Puget Sound, and beyond. Robert Gray entered the mouth of the Columbia River.

1841 U. S. Exploring Expedition (also known as the Wilkes Expedition) reached the Pacific Northwest coast. Conducted land and water surveys.

The northern Pacific Ocean, including Washington's coastal areas, remained a mysterious, unknown region to the outside world until the mid to late 18th century. This unexplored frontier drew famous navigators from around the world. Early maps of this region either show no information or hypothetical geography based on rumors and legends. Myth gradually hardened into fact during the Second Great Age of Discovery with the voyages of Vitus Bering, James Cook, Juan Perez, Juan Francisco de la Bodega y Quadra, and George Vancouver, among others. These European explorers encountered a landscape defined by waterways, rich in culture and natural resources. Ignoring the established Native American presence, these newcomers rushed to claim the Pacific coast for Russia, England, and Spain. The international race for territorial and commercial trade dominance in this region heated up in the 18th century, but efforts at accurate mapmaking and resolving boundary disputes continued into the 19th century.

Evidence from these voyages of discovery is sometimes fleeting. Historic markers and memorials are still scattered along the shoreline, historic logs and charts memorialize times and places, and geographic place names imprinted by those early explorers still remain.

Maritime exploration was an inherently dangerous pursuit and a serious undertaking. In addition to the risks of sailing into unknown waters and becoming lost to foul weather or running aground, most of these voyages lasted several years. Rationing fresh water and food supplies, caring for crewmembers that fell ill or were injured, and repairing the ship as needed were just a few of the expected challenges for the voyagers, and their chronicles of exciting discoveries are laced with true grit, hardship, and tragedy.



This chart, produced in 1790-1791 by the voyage of Spanish explores Eliza and Malaspina, shows the gradual expansion of geographical knowledge of this region. Note that the Strait of Juan de Fuca ends, whereas it should lead into Puget Sound. Hood Canal is also missing from this chart. Image courtesy of the Washington State Library.

Early Exploration

Early maritime exploration around the world was driven by several factors, including territorial expansion, the search for useful trade routes, and geographic mapping. By the start of the 17th century, most explorers had focused on tropical or semi-tropical regions because of the European market for products such as precious metals and spices.[1] A few voyagers had ventured north, but their expeditions took them to the eastern portion of North America. The continent's west coast, rich in marine and terrestrial resources, remained largely unknown.[2]

This Spanish chart from circa 1792 more accurately illustrates the waterways connecting this region. As opposed to the 1790-1791 Eliza and Malaspina chart, this slightly later chart includes Hood Canal and Puget Sound. Image courtesy of the Washington State Library.

The earliest stories of voyages to the Pacific Northwest are shrouded in uncertainty and lore. Sir Francis Drake, sailing for England and completing the second ever circumnavigation of the globe, is rumored to have sailed up the west coast of North America to 48° north, apparently not noticing that he was in what is now known as the Strait of Juan de Fuca sometime around 1579. How far north he actually reached is debatable. Juan de Fuca, a legendary and possibly fictional navigator, supposedly discovered the strait later named for him in about 1592. Accounts of de Fuca's explorations in this region also tell of an inland sea, which he named Sea of the West.[3] This body could have been the present-day Salish Sea, or the accounts could have been fabrications. Actual geographic knowledge of our region did not come until nearly two hundred years later, when explorers of the Second Great Age followed these stories.

The start of the 17th century ushered in the Second Great Age of Discovery,[4] with the Pacific Northwest and the Pacific Ocean representing the next frontier in the global rush to map new territory. Explorers competed to claim the best locations for trade ports, fishing, whaling, and other commercial endeavors. Scientific inquiry was also a motivation for exploration in the Second Age.

As part of the growing interest in the North American fur trade, the British Hudson's Bay Company (HBC) organized in 1670.[5] Still in business today, the HBC set up trading posts across Canada with particular

[1] Derek Pethick, *First Approaches to the Northwest Coast* (Seattle: University of Washington Press, 1979), 8-9.

[2] Vasco Nunez de Balboa crossed the Isthmus of Panama in 1513 and, upon reaching the Pacific coast, claimed the Pacific (and all land which its waters touched) for Spain. This event is only significant to Pacific Northwest history in that Balboa's claim was cited during the 1790 Nootka Crisis as proof that the "entire western coast of both North and South America belonged to Spain." Pethick, *First Approaches to the Northwest Coast*, 6.

[3] Derek Hayes, *Historical Atlas of the Pacific Northwest* (Seattle: Sasquatch Books, 1999), 11-16.

[4] William H. Goetzmann, *New Lands, New Men: America and the Second Great Age of Discovery* (New York: Viking, 1986).

[5] Pethick, *First Approaches to the Northwest Coast,* 15.

focus in the Pacific Northwest. The Russian fur trade similarly spurred the eastward expansion of that empire, coupled with a quest for geographical knowledge of the North Pacific.

The Danish voyager Vitus Bering, in the service of the Russian Navy, set out in response to Peter the Great's inquiry in 1725 regarding whether or not the northeast coast of Asia was connected to North America.[6] Bering's First Kamchatka Expedition (1725–1730), the first significant scientific maritime investigation for Russia, resulted in his claim of a strait between Asia and America.[7] Bering's Second Kamchatka Expedition (1733–1742) resulted in Russia's claim to Alaska but suffered a disastrous return voyage, losing a ship, and falling to widespread disease, starvation, and finally the death of most of the crew and Bering himself.[8] These pioneering voyages opened Alaska and the Aleutian Islands to the Russian fur trade, which boomed by 1770.[9] This spurred the Spanish government to send its own exploration missions up the west coast, past Washington and further north, to evaluate the strength of the Russian presence and plan countermoves. Around the same time, Britain sent the experienced global explorer Captain Cook to the Pacific Northwest.

Historic photo of the Lone Tree at Damons Point, Grays Harbor. Capt. Gray used the tree as a landmark to guide him into his namesake harbor circa 1792. Image courtesy Washington State Library.

Despite the commercial growth of the Russian fur trade to the north, the Washington coast, and particularly the Strait of Juan de Fuca and Salish Sea, continued to lack geographic representation in maps. Possibly the earliest map of the Pacific Northwest dates to 1593, but it showed rumored, fictional features with few exceptions. It wasn't until the 18th and 19th centuries, with advances in navigational tools and an increased role for scientific inquiry, that voyages began to produce ever more accurate and detailed documentation.

European Competition

In the mid to late 18th century, there was a headlong international race to explore and claim the Northwest coast that kicked off from questions about the uncharted geography of the region, rumors of a water route between the Northern Pacific and the Atlantic Ocean (the fabled but non-existent Northwest Passage), and the search for pelts to feed the fur trade. Exploration westward by Britain and the United States,

6 Sam McKinney, *Sailing With Vancouver* (Victoria, British Columbia, Canada: TouchWood Editions, 2004), 3.

7 Evgenii G. Kushnarev, *Bering's Search for the Strait*, ed. E. A. P. Crownhart-Vaughan (Portland, OR: Oregon Historical Society Press, 1990).

8 Pethick, 21.

9 Goetzmann, *New Lands, New Men,* 103.

VANCOUVER EXPEDITION PLACE NAMES

Numerous geographic features in the Pacific Northwest, including Washington, were imprinted with names of the officers and crew of the *Discovery* and *Chatham*, as well as friends and colleagues serving elsewhere in the British Navy:

Whidbey Island, the largest island off Washington's coast, northwest of Seattle — named for Joseph Whidbey, Sailing Master on the *Discovery*.

Puget Sound, a network of inlets, bays and waterways connected to the Pacific Ocean — named for Peter Puget, lieutenant on the *Discovery*. Originally, Vancouver labeled only the waters south of the Tacoma Narrows as "Puget's Sound," but the name now applies to a larger region.

Vashon Island, between Tacoma and Seattle — named for Captain Vashon of the British Navy, who Lt. Puget had served under previously.

Hood Canal — named for Lord Hood.

north from Mexico and California by Spain, and eastward by Russia, all converged in the Pacific Northwest.[10]

The Russian presence in the Northwest consisted primarily of commercial ventures in the 18th century, but also included quickly established trading settlements in Alaska. Those settlements increased the urgency for land claims and trade supremacy further south among other nations and independent merchants, a competition that was dominated by Britain, Spain, and later, the United States.

Many explorers over the span of centuries lost lives and fortunes in the quest to find the fabled Northwest Passage. Although it's unclear where origins of the passage's rumors began, some seeds appear to have rooted in the early exploration of the Pacific Coast, with stories of the Strait of Anian, a passage which supposedly linked the Pacific and Atlantic oceans.[11] In 1566, Bolognini Zaltieri produced a map depicting the Strait of Anian in Venice, but it was speculative, drawn from an interpretation of Marco Polo's travel accounts.[12] Neither the Northwest Passage nor the Strait exist.

The British government responded to renewed speculation about the fabled Northwest Passage by bringing the famous Captain James Cook out of retirement and sending him on his third and final global expedition. His second exploration of the Pacific (1772–1775), is noted as the "most extensive and perhaps most important, particularly in terms of marine navigation and terrestrial mapmaking,"[13] according to maritime historian William Goetzmann. The celebrated navigator once again set sail for parts unknown, this time making it to North America's west coast, including the Pacific Northwest, (1776–1780; Cook himself was killed in Hawaii in 1779).

[10] Pethick, 14.
[11] Goetzmann, 47.
[12] Hayes, *Historical Atlas of the Pacific Northwest,* 10.
[13] Goetzmann, 44.

Though Cook's final voyage failed to discover the non-existent Northwest Passage, it succeeded in expanding Western Europe's geographic awareness of the Pacific Ocean—particularly the bounty of fur-bearing animals in the northwest region of North America. Sea otters were especially sought after for China's booming pelt market.[14] Cook's voyage didn't result in much cartographical detail for present-day Washington, but it was notable as being the first multi-year maritime outing to use a new type of clock, which kept such accurate time at sea that navigators could pinpoint their longitude with a high degree of accuracy. This advancement allowed subsequent navigators to take better measurements and readings.

In the 1770s, Spain also refocused attention on this suddenly contentious region after decades of focusing on southern climes. The country had claimed all of the Pacific Ocean and bordering shores for Spain, but had no established settlements north of present-day California. In 1774, Juan Perez was sent north from Mexico by order of the Spanish crown. Commanding the *Santiago*, Perez sailed far offshore in his attempt to reach Alaska and spy on Russian advances, resulting in minimal charting of the Washington coast. The trip did make Perez the first known European to have sailed past the Washington coast, discounting the tall 16th century tales of Drake and de Fuca. Cook's expedition did not reach the Pacific Northwest until five years after Perez, in 1779.

Detail of north coast of Orcas Island with overlay of 1840s Wilkes map and the current shoreline. These two fake islands, Gordon Island and Adolphus Island, shown within the blue box were created by a disgruntled crewman to undermine Wilkes' command.

In 1775, a follow-up expedition led by Hezeta and Bodega y Quadra, with Perez as pilot, landed in present-day Washington State near the mouth of the Quinault River on the Olympic Peninsula and officially claimed the land for their nation. Hoping to claim territory in anticipation of finding the fabled Northwest Passage, as well as to control ports for the established Pacific shipping routes from Manila and compete with Russia,[15] the Spaniards continued to venture further north until 1779, extending the Spanish empire from Mexico to Alaska.[16] In 1788, Spanish authorities sent Esteban Martinez and Lopez de Haro to Alaska, to determine what their competition was doing on the far northern shores of the Pacific. The explorers found that Russia

[14] Heinrich Zimmerman, *The Third Voyage of Captain Cook* (Fairfield, WA: Ye Galleon Press, 1988), 15.
[15] Pethick, 135-136.
[16] Pethick, 135.

Interpretive panel on Bellingham Bay celebrates the 1792 visit of Vancouver's Expedition and naming of the bay for a British naval officer. Image courtesy of Artifacts Consulting, Inc., 2011.

had established control of the far northern coast and as far south as 52° North via various settlements, with the intent of sending reinforcements for more. This prompted Martinez to hurriedly make a claim at Nootka.[17]

By 1789, North America's west coast saw visitors from a variety of nations, including the United States, Britain, Russia, Spain and Portugal.[18] Britain's Charles Barkley had found the Strait of Juan de Fuca in 1787; the following year, fellow countryman John Meares' crew explored just partway along the Strait. By 1790, independent merchants from the Far East had also been visiting the northwest coast. According to Pethick, the "waters from Puget Sound [Salish Sea] to Johnstone Strait were still uncharted." In the summer of 1790, the Spanish began the task and Vancouver completed it, with considerable accuracy.[19]

By this time, Russia had firmly established outposts in Alaska, Spain had done the same in California, and both nations were stretching towards the Washington and Oregon coasts. Britain and the U.S. had already used the region for trade but did not have a strong, established presence.[20] The Spanish (via Martinez) held a fort at Nootka and tried to protect their territorial claims to the Pacific coast by capturing British and American ships, resulting in a tense political situation with Britain and Spain that put them on the verge of armed conflict. The 1790 Nootka Convention vaguely settled the squabble, setting forth a treaty that clarified the rights of Spanish and British interests along the Pacific coast. It allowed both nations to sail and fish in the Pacific, as well as trade with Native Americans on land.[21]

Alferez Quimper landed at Neah Bay in 1790 and claimed the land for Spain, despite the Makah people already living there. Two years later, Spain attempted to enforce that claim by establishing a settlement named Fort Nunez Gaona. This represents the first European settlement in present-day Washington, and the community was comprised of Spaniards, Mexicans and Peruvians. Buildings (now long gone) once included an infirmary, warehouses, bakery, church, and dwellings. Settlers raised livestock and crops to sustain themselves, documented local flora and fauna, recorded aspects of Makah culture, and did some mapping. The settlement relocated within the year to Vancouver Island, part of present-day British Columbia.[22]

---

17 Pethick, 136-137.

18 Pethick, 161.

19 Pethick, 167.

20 Pethick, 168.

21 Pethick, 165.

22 "Fact Sheet," Fort Nunez Gaona-Diah Veterans Park, Office of Lt. Governor Brad Owens, http://ltgov.wa.gov/PressCoverage/newsreleases/Fort%20Nunez%20GaonaFACTSHEET.pdf.

Vancouver's Expedition

Although Captain James Cook is one of the most recognized names in maritime exploration history, it was one of the midshipmen from his second and third voyages, George Vancouver, who would later lead his own expedition to chart the Pacific Northwest coast and fill in the gaps left by Cook.[23] Many of the place names still used along Washington's shores originate from the Vancouver survey. Vancouver was also tasked to negotiate treaty terms with Spain over contested territory. One of his greatest contributions to maritime history, however, was his confirmation that the Northwest Passage does not exist.

Captain Cook's second expedition was George Vancouver's first, at the age of 14. He sailed once more with Cook before the British Navy assigned Vancouver to other voyages, giving him experience with surveying and charting. After promoting him to commodore, they put him in charge of a new expedition to the Pacific in 1791, commanding the *HMS Discovery* and with William Broughton, who commanded the *HMS Chatham*. The voyage sailed from England for the Hawaiian Islands then north to Cape Flattery, the Strait of Juan de Fuca, Puget Sound, the Strait of Georgia, and Queen Charlotte Strait.[24] The *Discovery* and *Chatham* sent out launches with reconnaissance crews to navigate the complex network of inlets and islands along the way. While Vancouver had extensive navigational and survey experience, some inaccuracies slipped into the new charts, such as mistaking the mouth of the Columbia River for a small bay.

VOYAGES OF DISCOVERY EXAMPLES

You can find more information on these exploratory voyages in local museums, historic markers, written accounts, voyager biographies, and historic maritime charts. The short-lived Spanish settlement at Fort Nunez Gaona is marked by a recently constructed memorial park at Neah Bay and plaques at Sunrise Beach, in the Gig Harbor vicinity, honor various expeditions. Some museums with exhibits and/or research collections related to these voyages of discovery include:

- Whatcom Museum, Bellingham
- Washington State History Museum & Historical Society, Tacoma
- Harbor History Museum, Gig Harbor
- Jefferson County Historical Society Museum, Port Townsend
- Museum at the Carnegie & Clallam County Historical Society, Port Angeles
- Westport Maritime Museum, Westport

Despite political overtures with Spain, Vancouver's expedition, and the similarly timed arrival of Alexander Mackenzie in present-day British Columbia via Canada's interior in 1793, reflected Britain's eagerness to advance its own territorial claims.[25]

[23] McKinney, *Sailing With Vancouver,* 4.
[24] McKinney, 2, 4-5.
[25] Zimmerman, *The Third Voyage of Captain Cook,* 8.

The maritime surveying and exploration of the Vancouver expedition may be experienced through museums, historic markers, written accounts, biographies of the voyagers, and historic maritime charts produced from the voyage. Plaques at Sunrise Beach, in the Gig Harbor area, honor various expeditions, and a historic marker on Bellingham Bay honors the Vancouver expedition in particular.

U.S. Territorial Expansion

The final maritime expedition of note in Washington's history is the U.S. Exploring Expedition (1838–1842) led by Charles Wilkes, which built on the mapping done by George Vancouver and crew. Early in the expedition, other parts of the globe were charted. But the U.S. Exploring Expedition, also known as the Wilkes Expedition, created the first extensive maps and charts of the (then) Oregon Territory, extending from the River's mouth through the Strait of Juan de Fuca, Salish Sea, and south along the coast to California.

Part of the U. S. Exploration Expedition exhibit at the Harbor History Museum, Gig Harbor. Image courtesy of Artifacts Consulting, Inc., 2011.

Two of the ships (*Vincennes*, *Porpoise*) reached the Northwest coast in May of 1841, with the remaining two due to follow later (*Peacock*, *Flying Fish*). When the first ships arrived at Cape Disappointment, Wilkes didn't dare explore the Columbia River for fear of the difficult navigation and the large size of the ships. The *Vincennes* and *Porpoise* continued on to the Strait of Juan de Fuca, anchoring at Port Discovery. After a brief rest and resupply at the HBC's Fort Nisqually, the *Porpoise's* crew set out to map the eastern arm of the Salish Sea (Admiralty Inlet) while the *Vincennes* sent boats to survey Hood Canal and on to the mouth of the River.[26] From Fort Nisqually, land survey teams also explored east across the Cascade Mountains and south to the HBC's Fort Vancouver, on the Columbia River.[27] Over the summer of 1841, the expedition continued to send parties by boat and by land to survey rivers, lakes, and coastline. Some of the areas charted include Cape Disappointment, Grays Harbor, Neah Bay, Port Orchard, New Dungeness Bay, Whidbey Island, Protection Island, the San Juan Islands, and the Canal de Arro (alt, de Haro).[28] The maritime expedition eventually continued around the globe through Singapore, to Capetown, and back to the U.S. in 1842.

[26] Herman J. Viola and Carolyn Margolis, *Magnificent Voyagers: The U.S. Exploring Expedition, 1838-1842* (Washington, D.C.: Smithsonian Institution Press, 1985), 160.

[27] Viola & Margolis, *Magnificent Voyagers,* 160-162.

[28] David B. Tyler, *The Wilkes Expedition* (Philadelphia: The American Philosophical Society, 1968), 232-233, 254-259.

As a result of the Wilkes Expedition, the government published charts of the harbors and rivers along the West Coast, from the Strait of Juan de Fuca to San Francisco. However, the charts had at least two errors: two fictitious islands, Gordon and Adolphus, had been drawn in north of present-day Orcas (then named Hulls) Island by a discontented officer, presumably an act of insubordination towards Wilkes, who valued precision in mapmaking.[29] Other stories of the journey are also reflected in the charts. Vendovi Island, off the Washington coast, was named for a Fijian prisoner Wilkes had taken.

Wilkes' reports on the region for the U.S. government were intended to help decide the boundary question with Britain, though previous treaties had established joint use of the territory. He recommended immediate action by the U.S. to take control of the territory and prevent British expansion. Nothing happened until the mid-19th century, when the American presence grew and made the 49th parallel the new U.S. border, forcing the Hudson Bay Company northward.

WILKES EXPEDITION PLACE NAMES

Dana Passage, at the south end of Puget Sound—named for James Dwight Dana, part of the scientific corps.

Agate Passage, at the north end of Bainbridge Island—named for Alfred Agate, expedition artist.

Drayton Passage and Drayton Harbor—both named for Joseph Drayton, one of principal expedition artists.

Eld Inlet (aka Mud Bay) in south Puget Sound (also Eld Island in Grays Harbor, although this name is no longer used on charts)—named for Henry Eld, passed midshipman.

Vendovi Island, southwest of Bellingham—named for a Fijian prisoner taken onboard by Charles Wilkes.

[29] Viola & Margolis, 179.

TRADE & COMMERCE

Circa 1930s aerial view of Port Gamble. Port Gamble, listed as a National Historic Landmark, is one of the earliest and longest operating mill sites along water in the nation. Upland housing and commercial developments remain largely intact with views out over the former mill yards along the shoreline. Image courtesy of the Port Gamble Museum.

Commercial development within the Salish Sea and along the Pacific Coast depended upon exports with trade-based economies growing as the region's population and infrastructure improved. The period from the 1850s to 1880s saw the primitive beginnings of sustained Euro-American settlement along the shores of the Sea and nascent commercial activity. It closed with the arrival of transcontinental railroad connection to the Salish Sea and the territory becoming a state in 1889.

The rapid growth and technological improvements in the decades starting with the 1890s and continuing through WWI brought significant changes to maritime resources for local and intercoastal shipping, processing, resource extraction and recreation. The ascendance of automobile travel, the trucking industry and railroads from 1919 through WWII had profound impacts on maritime operations. The 1950s through 1970s ushered in the rise of superports handling containerized cargo, expansion of industrial and processing facilities along the Salish Sea, the unprecedented growth of recreation activities, and a growing environmental awareness.

These activities exerted a profound influence on the shoreline character. Logging pulled trees back from the water's edge and agricultural, commercial, extraction and industrial operations filled their void, developing along the shoreline to take advantage of transportation along the waterways.

Our shores retain a wide sampling of properties related to trade and commerce functions, including operating boat yards, former mill sites, and former fort buildings. Many remain in their original or closely related function while others have transitioned to public roles through municipal and nonprofit entities. Interpretation of these elements provides a key mechanism for understanding the development and changes of our shorelines over time.

FORT STEILACOOM

Fort Steilacoom, although developed well back from the shoreline, remains significant as one of the most intact of Washington's pre-territorial United States fortifications. The majority of the officer's quarters remain on the site and are open to the public.

Trading and Early Agriculture

Washington's marine waterways provide a unique ongoing legacy of Native American trading routes. Native Americans expertly navigated the strong currents and tidal fluctuations of Washington's marine waterways and established reliable routes as their principal means of circulation within the Salish Sea. The trade routes of subsequent European and Euro-American cultures built upon this precedent. Washington's marine waterways still retain much of their essential alignment, tidal currents, depths and interconnections from the last several centuries.

Circa 1960 aerial view of Fort Nisqually. Marking one of the earliest European settlements on the Salish Sea, **Fort Nisqually** is interpreted today as a living history museum. Image courtesy of Washington State Digital Archives.

The rise and decline of the fur trade marked a tumultuous first chapter in European and Euro-American exploration of Washington's Pacific Coast and Salish Sea. Native Americans and European and Euro-American traders found common ground in the region's fur harvesting bounty. The rich trade contact culminated with the establishment of the British Hudson Bay Company's trading facilities in the early 1800s.

Fort Nisqually, established ca. 1833 along the Puget Sound above the Nisqually River delta, started as a fort but became one of the region's significant trade and commerce centers. The fort's trading opportunities attracted a diverse demographic including Native Americans, Scots, French-Canadians, West Indians, English, and Euro-American settlers. These new arrivals to the region soon began to produce a variety of agricultural products in addition to exporting furs. The fort's proximity to the Sound, as well as the overland route south to the Columbia River and early overland immigration routes, gave it a worldwide influence, with exports reaching England, Hawaii, Europe and Asia as well as closer to home destinations along the Pacific Coast. Fort Nisqually was closed as a trading post in 1869 and is operated today as a living history museum, providing one of the best examples in telling this story in Washington's history.

By the 1840s, as the region's fur-bearing mammals and related fur trade declined, Euro-American agricultural activities began their ascent in economic importance. The Puget Sound Agricultural Company (PSAC) a subsidiary of the Hudson Bay Company, created ca. 1839 to 1840, relocated settlers from Canada's Red River Valley to the shores of the Puget Sound. The endeavor wasn't particularly successful; with a portion of both the harvest and profits returning to the PSAC to lease the land, few sustained lasting agricultural activities. The attempt did, however, serve to raise awareness to the potential for settlement and the underlying land-ownership stake of both the British and US governments.

The Treaty of 1846, establishing land south of the 49th parallel as held by the U.S., led quickly to early Euro-American overland settlement. By the early 1850s the first groups arrived in the Tumwater area on the Puget Sound, building the beginnings of a population base to support expanded regional trade and commerce. As the Euro-American population grew, so did the need for military presence, in part to counter competing claims for the region. Fort Steilacoom (est. 1849) and Fort Bellingham (est. 1856) were two early forts along the Salish Sea.

The Revenue Service and Early Military Presence

Thwarting smuggling and providing assistance to the growing maritime-based trade along the Salish Sea motivated the Revenue Service to create the Puget Sound Collection District in 1851. Created in 1790 by then Secretary of the Treasury Alexander Hamilton, the Revenue Service (Service) served as early maritime law enforcement. In 1915 the Service merged with the U.S. Life-Saving Service to form the U.S. Coast Guard.

Originally the Washington Territory's customs house office was located in Olympia, this marked the first port of entry for the Salish Sea.[1] The office moved to Port Townsend in 1853, then the largest port on the sea to take advantage of proximity to vessels entering the Sea from the Pacific Ocean.

The **Port Townsend Post Office, Customs and Court House** Building stands prominently on the bluff overlooking the harbor. Views from Union Wharf back illustrate the commanding presence of this building. Image courtesy of the Jefferson County Historical Society.

The series of coves, inlets and rivers as well as nearby British territory made the region ideal for smugglers. The loss of revenue soon prompted the Service to assign the *Jefferson Davis* to the sea in 1854. This assignment marked the first U.S. Coast Guard association to be stationed in the region. The cutter's captain received his orders from the Collector of Customs. The Collector also held responsibility for documenting vessels, taking in revenue, administering marine hospitals, inspecting steam boats, and supervising lighthouses.

During the 1850s the *Jefferson Davis* in addition to its revenue assignments and helping mariners in distress also served as a troop carrier during the 1854-55 War and dispatch messenger during the Pig War.

Briefly in 1862 the Customs Collector Victor Smith succeeded in transferring the port of entry to Port Angeles. Smith, however, drowned in a shipwreck in 1865 and the port of entry quickly reverted back to Port Townsend.[2] By 1894 the Port Townsend Customs House provided sailing orders for the revenue cutters from its commanding location atop the bluff overlooking the harbor.

[1] Writers' Program of the Work Project Administration in the State of Washington, *Washington: A Guide to the Evergreen State* (Portland: Binford & Mort, 1941, revised 1950), 203.

[2] Charles Pierce LeWarne, *Utopies on Puget Sound 1885-1915* (Seattle, WA: University of Washington Press, 1975), 22.

Building for Commerce

The Euro-American appetite for natural resources expanded significantly along the Salish Sea and Pacific Coast from the 1850s to 1920s. Timber, maritime agriculture, and quarried and mined materials and industry formed the core of this wealth. Export and trade based communities developed according to their role within the Salish Sea and Pacific Coast. This period marked the beginning of dramatic changes to the land-water interface, and many export-based communities would achieve their zenith by the end of this period.

Early efforts at exporting natural resources focused on getting raw materials to and loaded on ships that would sail to markets along the Pacific Coast. As technology progressed and the population along the Salish Sea grew to support local markets with its consumption of processed goods, the level of waterborne commerce increased.

1960s to 1990s view of the Roche Harbor Resort on San Juan Island. Roche Harbor, best known for the Tacoma and Roche Harbor Lime Company facility, provided extensive quantities of building and agricultural lime. **Roche Harbor** is listed to both the Washington Heritage Register and National Register of Historic Places. The Hotel de Haro provides a key interpretive experience to this site. Image courtesy of the State Library Photograph Collection, 1851-1990, **Washington State Archives, Digital Archives**.

Timber dominated as the region's export for nearly seven decades, from the early 1850s through WWI, profoundly shaping both the inland and marine waterway character and spurring the proliferation of many mill camps and towns along sheltered harbors. Once formidable stands of massive old growth timbers that towered over marine waterways receded from the water's edge as settlers and loggers harvested the most accessible stands. Clearing the land started a cycle of regeneration, subsequent logging, and transition to alternative shoreline uses, which collectively shaped this slender transition between water and land.

The first few decades saw the transition from settlers cutting down and floating raw timbers out to ships for loading, to the near simultaneous start of a few small sawmills along the water's edge. These early mill-related settlements included Tumwater, Seattle, and Bellingham, as well as massive operations such as Port Gamble, Ludlow, and Blakely that created and supported their own towns. These early processing sites became part of the larger regional and intercoastal commerce network.

By the 1920s paper and pulp mills as extensions of the timber industry introduced new sights and smells to the region's marine waterways. Shelton best illustrated this symbiotic relationship: the lumber mill sold wood scraps to the power plant for fuel, which in turn powered the pulp mill. The pulp mill purchased wood remnants

from the lumber mill for processing into paper. The environmental impact of this new industry quickly became a pressing topic among fin and shellfish harvesters.

2011 view of the Reid Boiler Works in Fairhaven. The boiler works in Fairhaven illustrate early industrial development in proximity to both water and railway connections. Image courtesy of the Port Gamble Museum.

Local and national demand for fins and shellfish expanded with each decade, as did advancements in shipping and refrigeration. The various means of shellfish cultivation and fish harvesting contributed to the visual character of the maritime environment. Net sheds, canneries and processing centers, such as the cannery near Anacortes, developed along the shorelines.

The exportation of quarried and mined materials, such as lime, building stone, and coal sustained many small waterfront and inland communities. Companies sourced many of these inland, relying upon access to marine waterway transportation to move them to markets. Often these materials were worked in proximity to the water for ease of transport: the stone yards in Tacoma cut and finished much of the Alaska Tokeen marble used in the State Capitol buildings; lime quarries at Roche Harbor on San Juan Island provided extensive lime for construction and agricultural purposes to regional and international markets. Buildings constructed with stone quarried from the Chuckanut Quarry near Fairhaven proliferated along the Salish Sea and still stand today.

Agricultural products for local consumption and intercoastal export became increasingly important commodities. Starting as communities buying and selling crops to each other, the industry expanded to include loading crops on ships to be sold along the Salish Sea and Pacific Coast. Trade networks between communities along the Sea grew as steamer service between locations increased in response to market and population growth. Expanding northern connections to Alaska contributed to the region's role as a gateway to Alaska. Small community wharves became points of sending and receiving goods.

Industrial development—boat yards, boiler works, and foundries for castings and metal work—was concentrated along the marine waterways, affording companies easy access to raw materials and shipping logistics.

Trading encompassed a much smaller range of communities within the Sound. While all communities participated in trade to varying degrees, a few did so with greater success due to their natural conditions and with comparatively less reliance on exports.

2011 view of the **Rozema Boat Works**. Rozema's Boat Works, established in 1955 at Bay View, provides a wonderful example of a family owned, working ship yard. As the business expanded additional facilities were added to the original building. The company builds a variety of vessel types including tugs, oil recovery and research, barges and recreational vessels. Image courtesy of Artifacts Consulting, Inc., 2011.

Several ports strove to secure a position as regional trade centers during the first decades following the 1850s as the role of Fort Nisqually faded and new settlements grew up along the Salish Sea, Olympia, Steilacoom, Port Townsend, Bellingham, Tacoma, and Seattle, as well as Everett by the mid to late 1860s. Geography was the biggest factor in Seattle and Tacoma edging the other cities out, however. Olympia's tideflats made it difficult for increasingly larger ships to enter; passenger ferries had to arrive on a high tide and wait for the next high tide to depart. Additionally the city sat at the far south end of the Puget Sound, making for longer trips to northern destinations on the Salish Sea. Steilacoom, while benefiting from a more northern location relative to Olympia, lacked the sheltered bay, water depth and transcontinental railroad connection of its immediate neighbor Tacoma. Port Townsend had excellent connection to the Pacific Ocean and a safe harbor, but was distant from ports along the Puget Sound and eventual railway connections. Bellingham's excellent proximity to Alaska and the north Salish Sea put it too far from the south Puget Sound ports.

Deep water harbors, a central location with ease of access to the Pacific Ocean, early transcontinental railroad links, and north and south sound areas contributed to the dominance of Tacoma and Seattle as trading ports. By the mid to late 1860s Seattle boasted regular sailings serving Bainbridge Island ports, sent supply ships north to Alaska, and by the 1870s maintained flexible sailing schedules that served ports throughout the Puget Sound.

Likewise, Tacoma served local fishing, farming, and timber communities that emerged along the Kitsap Peninsula and nearby islands by the 1880s. Both Tacoma and Seattle's ships were well positioned to quickly depart either north or south along the Sound to pick up or deliver goods between Seattle and other ports.[3]

Local and Intercoastal Shipping

Local and intercoastal shipping enjoyed a period of growth and importance during the 1850s to 1920s due to free use of the marine waterways, coupled with population growth and the rise of exports and trade among communities.

[3] Daniel Jack Chasan, *The Water Link: A History of Puget Sound as a Resource* (Seattle, WA: University of Washington Press, 1981),12.

Trade and commerce flourished with the bustling movement of goods and people along the Puget Sound and Pacific Coast waterways. These bodies of water linked communities on the sound allowing the trade of goods and services, as well as bringing a much needed influx of capital into the region through exports. During later years communities along the Puget Sound became important provisioning points for trade north along the Pacific Coast with Alaska.

The region's commercial capacity grew as transportation links became more extensive. By the early 1900s steamboat service reached most locations on the Puget Sound. Locals could move goods, such as fresh fish, quickly to larger urban markets such as Tacoma and Seattle. Conversely, the urban populations expanded outward, with summer dwellings and small beach communities sprouting up along the water's edge throughout the Puget Sound.[4] The constant need for construction materials, provisions and eventually, infrastructure, all contributed to the outgrowth of local industries.

The addition of regular routes between communities often started as the enterprise of a local individual or collective effort to purchase a boat to transport goods. Established transportation companies based their lines on patterns of circulation amongst communities.

1921 view of Seattle's Harbor Patrol Boats and Dock, known as the Washington Street Landing. Image courtesy of the Seattle Municipal Archives Photograph Collection. The cast iron remnants of the Washington Street Public Boat Landing Facility provide an excellent example of former passenger receiving facilities. Built in 1920 the site is listed to the National Register as the **Washington Street Public Boat Landing Facility**.

Ships laden with cargo had been departing Seattle's ports for Alaska since the late 1860s. By the late 1890s this link contributed to Seattle's unique role of being the only port in which processed goods comprised a larger portion of cargo than raw materials. In 1897, when the steamship *Portland* sailed into Elliott Bay loaded with gold from Alaska's Yukon River district, Seattle was well prepared to become the northernmost provisioning and departure point for prospectors headed north to seek their fortunes. In the first six months alone, more than 70 ships departed from Seattle for Alaska.

The regular flow of goods and personnel northward to Alaska continued through the 1900s. By 1905, Seattle companies controlled more than 90 percent of shipping interests to Alaska. When the nation entered WWII, naval air stations and bases in Washington provided operational and logistical support to stations in Alaska. The Alaska Marine Highway, created in 1948, provided a regular link between Bellingham and destinations north, including Alaska.

[4] Chasan, *The Water Link*, 41.

Undated historic view of the Cadillac Hotel. Image Courtesy of the University of Washington Libraries, Special Collections Division. Located in the historic Cadillac Hotel, the Seattle unit of the **Klondike Gold Rush National Historical Park** provides interpretation of Seattle's role in outfitting prospectors and the associated growth and development stimulated by this gold rush.

By the late 1910s railroads and automobiles became increasingly important to community connections and the movement of goods and people. The principal priority in choosing market locations shifted from proximity to the Pacific Ocean to proximity to a railroad terminal as markets moved to the inland United States and shipping terminals became the central points of exchange, with expanding facilities and larger container ships. Many export ports adapted their facilities to load goods into railroad cars, which were then loaded onto barges and floated to ports linked to the transcontinental railway lines.

Railroads and the Automobile

Both trains and automobiles exerted a profound influence upon the character of our state's marine shorelines. Railroads often paralleled the shoreline at the water's edge, while bridges spanned waterways. The complexity of these networks is best illustrated by Everett's multitude of railroads and automobile bridges spanning multiple waterways.

As populations grew and settlements expanded inland, the network of roadways increased. The westward push of transcontinental railways fanned land speculation along the Salish Sea. It was not until after WWI, however, that the collective effect of railroad and automobile development would come to bear so significantly upon trade and commerce along the state's maritime waterways.

Starting with the arrival of the first transcontinental connection, the Northern Pacific Railroad's Prairie Line to Tacoma in 1873, the decades leading up to WWI were punctuated by the completion of three additional transcontinental railroad connections. The Northern Pacific Railroad eliminated the need for ships arriving from Asia to sail south around South America to reach the East Coast. During the 1890s, settlement of North and South Dakota fueled production in mills along the Puget Sound, which provided the rapidly growing population with an important supply of timber that could be moved overland along the new railway. Despite this first train connection, sailing ships along the region's marine waterways continued to hold an important role in moving timber to railroad depots and along to destinations along the Pacific Coast and abroad.

The next railroad to arrive to Seattle was the Great Northern Railway in 1893. In 1909 the Chicago, Milwaukee & Saint Paul Railway reached the Puget Sound, fol-

1909 view from the Murray Morgan bridge looking out along the Foss Waterway. Image courtesy of the Library of Congress. Built in 1901, the Balfour Dock provides a remarkably intact example of waterside storage facilities creating a link between railway and oceangoing ships. Both wharves and rails remain intact, along with the building's heavy timber structure, creating a cavernous interior. The **Working Waterfront Maritime Museum**, located in the Balfour Dock building, provides educational and interpretive information on early maritime history in Tacoma. The **Balfour Dock Building** is listed in the National Register.

lowed by a branch line that came up from Portland in 1910 via the Oregon-Washington Railroad and Navigation Company of the Union Pacific Railroad system.

The railroads developed expansive systems of docks and terminals along Seattle and Tacoma's tide flats. This development contributed to the expansion of storage and distribution warehouses as well as manufacturing interests. They concentrated along shoreline industrial areas, most often on timber pilings and fill over former tide flats.[5] Exporting ports (such as lumber mills) gradually incorporated railroads and systems for loading cars and barging them to larger terminals.

The expansion of interurban railroads as well as the improvement of roads for truck and automobile travel decimated ship travel within the Salish Sea. This expansion also contributed to a series of new visual features along the shoreline of roads, bridges, and railroad trestles.[6]

With the expansion of the state highway system and the development of the Interstate Highway system after WWII, companies had a free, high quality system for moving goods around the region that could use cheap fuel and needed only a single truck driver. Bridge construction linking islands and improving peninsular connections to the mainland expanded residential populations and cemented the automobile's role as the preferred means of travel.

Passenger ferries, undercut by automobile use, decreased sailing frequencies and routes. This led to further automobile dependency. Traditional town centers shifted

[5] Harbor Master, *Tacoma Harbor Annual Report*, Annual Report (Tacoma, WA: Port of Tacoma, 1927).

[6] James H. Hitchman, *The Port of Bellingham: 1020-1970* (Occasional Paper #1, Western Washington State College, Bellingham: Center for Pacific Northwest Studies, 1972), 61.

Circa 1960 view of the Tacoma Narrows Bridge. Final opening of the extant Tacoma Narrows Bridge greatly facilitated automobile travel to the peninsula, nearly eliminating the need for passenger ferries. The **Tacoma Narrows Bridge** is listed in the Washington Heritage Register. Image courtesy of the Washington State Digital Archives.

away from the waterfront and historic main streets to suburban centers not accessible by marine waterways.

It had taken nearly 100 years, but travel by land had finally become easier and less expensive than travel by the water for the majority of the region's inhabitants and commercial operations. These changes also led to cuts in services, such as the post office and communications systems (such as early telegraph lines). During the early stages of road development, without regular ferry service, some communities were cut off until road development finally reached them. One great example is Port Gamble. In the 1870s, the company town could receive via telegraph baseball scores from San Francisco, but cuts in postal, express and telegraph services by 1919 changed that convenience, and the townsfolk had to wait for intermittent overland mail delivery to receive those scores.[7]

With the ease of overland transportation and movement of goods, industry emerged as a dominant force within the state during and following WWII with the growth of Boeing, wartime ship construction and repair, and refinery development.[8] By 1943, shipbuilding generated contracts totaling $700 million for the Puget Sound Naval Yard and 16 other private yards, in contrast with just $6.5 million four years earlier.[9] By 1963, the mantel of local industry recognition extended to include sports fishing. The sport achieved status as a major state industry with 250,000 to 500,000 fish caught annually from the Salish Sea.[10]

Contemporary Ports and International Trade

Contemporary port authorities and commissions emerged in the 1910s–1920s as a development and operational mechanism to increase efficiency and coordination among for what had previously been a diverse set of private interests. During the first several decades of the region's development, the entire sea functioned as a port of entry for vessels from the Pacific Ocean. As the scale and speed of vessels increased, and the need for land-based connections grew urgent, activities gradually condensed into the region's superports that handle the bulk of international trade.

[7] Chasan, 56-59.
[8] Chasan, 112-113.
[9] Chasan, 85.
[10] Chasan, 115.

The State Legislature formed Seattle's Port Commission in 1911 to address the city's concerns about a monopoly of a railroad on the waterfront and corresponding rates for the transportation of passengers and goods. Growing trade relations with Japan and work on the Panama Canal contributed to the enthusiasm for a centralized entity to work between private and government interests.[11] Shortly after its formation, the Port built what would become two of the world's largest piers for shipping and receiving goods to Alaska and East Asia.

At the close of WWI, the need to continue economic development to replace decreased wartime activity and bring order to the multitude of shipyards and facilities that grew up to support the war effort led to the formation of several port authorities. In 1918, the Port of Tacoma was created through referendum and immediately commenced development of 240 acres of tide flats extending into Commencement Bay. The Foss Waterway became an integral deep water access point. By the 1950s the port also worked to deepen and extend the Hylebos waterway. The Port of Everett was established in 1918 as well, and the Port of Bellingham followed in 1920.

The Port Gamble barge terminal remains an icon, marking the influence of railways upon mill sites. Cars were loaded onto barges for travel to transfer points where they continued their journey along rail lines. No longer were ships the primary means of transportation. The **Port Gamble Historic District** is an NHL. 2009 view of the Port Gamble Barge terminal. Image courtesy of Artifacts Consulting, Inc.

Changes in international shipping operations and managing labor relations soon became important issues for ports followed closely by the rapid growth of WWII. The economic slowdown of the 1950s led to a concentration of activities and the creation of superports, which specialized in the movement of containers. By the early 1970s ports struggled to balance business competition with mutual destruction. Throughout the period historic trade routes to East Asia and Russia with overland connections to the Midwest and East Coast continued to have strong roles in regional commerce development.[12]

The use of containers for shipping started with SeaLand in the mid 1950s, an East Coast company that moved supplies between New York and Puerto Rico. Though some West Coast companies briefly employed a similar system for moving goods north between Alaska and Seattle, but it hadn't caught on for widespread use. The scarcity of land and the need to stage materials both for loading onto ships and then onto trucks and rail cars pushed Seattle to pursue development of the containerization method instead of maintaining its existing freight handling facilities.

[11] Hitchman, *The Port of Bellingham.*

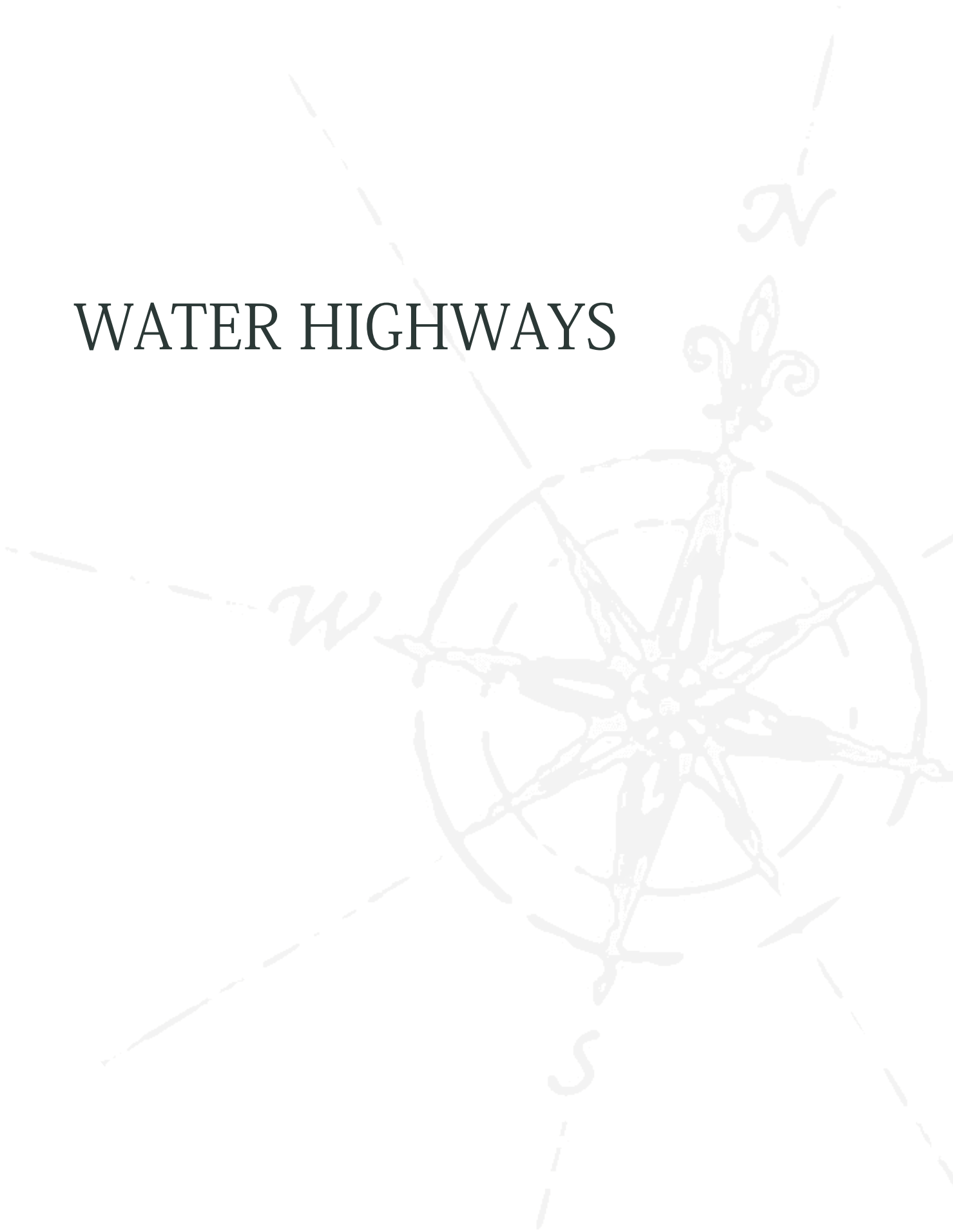
[12] Hitchman, 61.

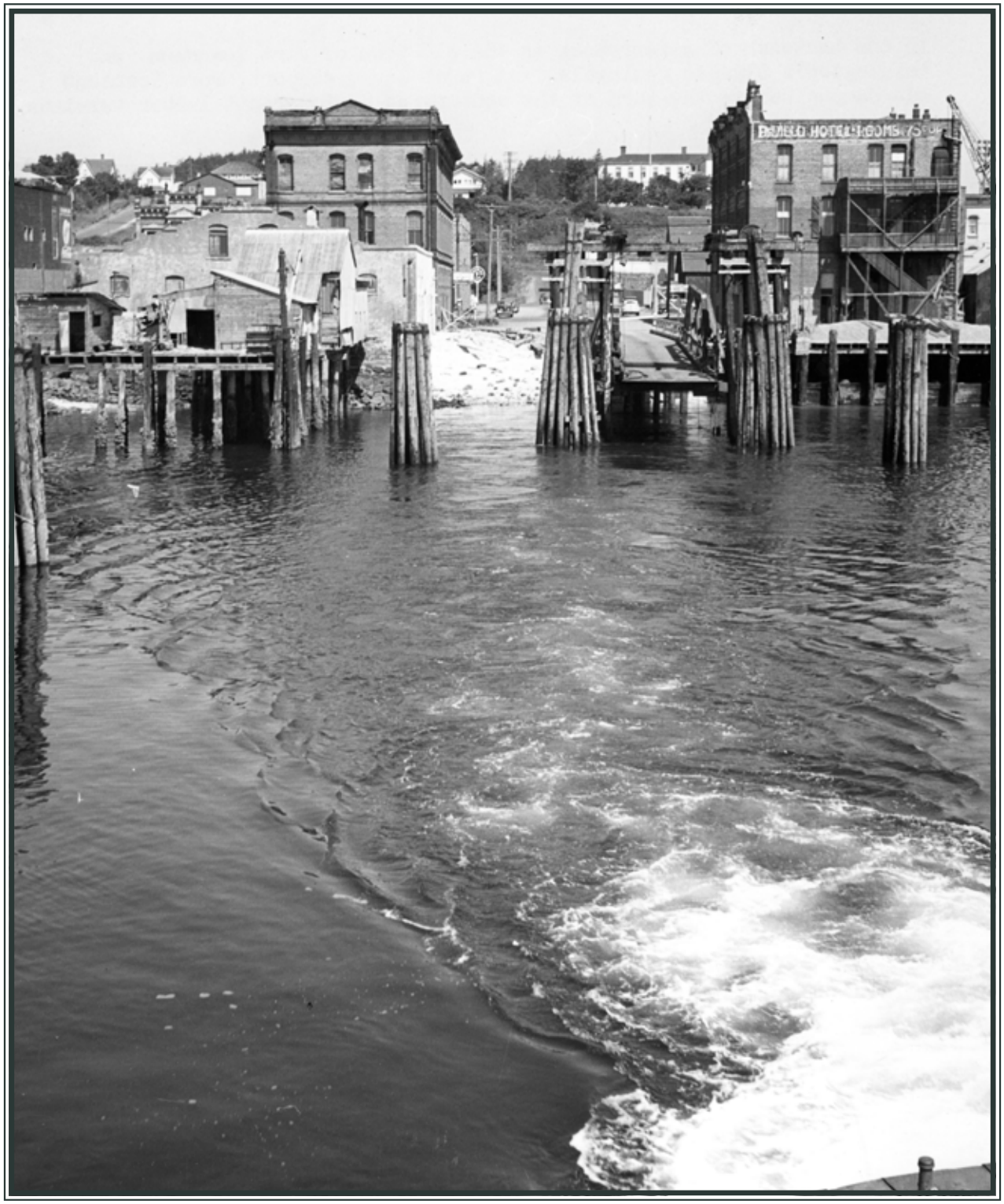
2010 view of the grain silos along Commencement Bay. The grain silos along Tacoma's waterfront continue to load oceangoing vessels. Located along the railway, they receive grain by rail car bound for international markets. Image courtesy of Artifacts Consulting, Inc.

As the use of containers and the development of specialized container ships grew to become the prevailing method of transport, the speed with which these ships could travel between ports and unload drove companies' decisions on which deep water port of entry to use. Seattle, having a developed system, became the port of entry for six major shipping lines serving Japan and the Pacific Northwest.[13] By 1977, "Seattle was second busiest container port in the nation behind only New York and the 6th busiest in the World and was unique in that it was able to handle this within its traditional harbor, unlike other cities who moved to satellite areas."[14]

[13] Chasan, 121-123.
[14] Chasan, 121-123.

WATER HIGHWAYS





Circa 1940 view from a ferry leaving the Port Townsend ferry terminal. Image courtesy of Washington State Archives. Built in 1947 by Olympic Ferries, Inc., the **Quincy Street Ferry Dock** served as the ferry terminal for the Port Townsend—Keystone route. Although no longer in use and deteriorating in condition, the Quincy Street Ferry Dock remains a visually defining component of the downtown Port Townsend waterfront. The dock is visible to the public from Quincy Street as well as from Union Wharf, a public fishing pier.

Prior to 1850, the canoe, flatboat, or sailing ship provided the only means of water travel in the Pacific Northwest. Technology advances in the mid-1800s introduced the steamboat to the region, which vastly expanded transportation opportunities for waterfront communities, businesses, and industries. Steamboat service provided relatively efficient routes for moving goods and people while also establishing a more routine mail delivery. This network of steamboats traveling through the Salish Sea became known as the Mosquito Fleet.

Water travel continued to transform and adapt through the 20th century, particularly with the region's increased reliance on the automobile. Construction of roads and bridges led to centralized ferry docks, abolishing the need for ferry service to individual maritime communities and resulting in the creation of the Washington State Ferry System, still in use today.

Water travel remains vital for both commercial and commuting use in Western Washington, with harbors, marinas, ferry terminals and vessels stationed throughout the region and still-bustling marine waterway traffic. In addition, the Salish Sea and Washington coast retain a considerable collection of historic transportation-related sites, structures, and vessels, largely through the efforts of non-profit foundations, museums, and historic societies. Interpretive panels marking former Mosquito Fleet ferry terminals and museum exhibits showcasing Washington's working waterfront heritage reveal the dramatic impact these aquatic highways have made on the region.

MAKAH CULTURAL & RESEARCH CENTER

Located in Neah Bay on the Makah Indian Reservation, the Makah Cultural & Research Center houses an extensive collection of photographs, textual records, and oral materials in addition to permanent exhibits with a longhouse and full-sized canoe replicas.

Canoe Routes to Ferry Routes

Canoes provided the earliest form of water navigation in the Pacific Northwest for both the Native American cultures and Euro-American settlers. These canoes, carved by hand from a single log, required the skills of a master carver, who could spend up to two months carefully carving a single canoe. Carvers most frequently used red cedar for their canoes, but also used yellow cedar, spruce, and even cottonwood.

Canoes served many purposes, from transporting people and hauling cargo to carrying warriors or hunters. The largest canoes could carry up to 100 warriors, while the smaller, more commonly used canoes held 20 to 30 people. Canoe designs reflected their uses—longer canoes, measuring about 40 feet in length, carried cargo

Steamship *Puget*, docked at Colman Dock in Seattle, ca. 1910. Image courtesy of Washington State Archives.

and smaller canoes worked best for hunting purposes. The Makah at Cape Flattery used canoes to hunt migrating gray whiles.[1]

When Euro-American settlers first arrived in the region, they relied heavily upon the expertise of Native American peoples and their canoes for travel along the Salish Sea. Canoes also served as the earliest mail carriers, distributing mail to settlements around Salish Sea from the first post office in Olympia.[2] The British Hudson Bay Company utilized canoes in their fur trade system, crafting their own from birch bark to be light and strong enough to move both men and goods throughout their trade network.[3]

Although canoes provided the majority of water transportation within the region prior to 1850, other types of boats also served along the Puget Sound's water highways. Sailing vessels, such as schooners, barks (also barque or barc), and brigs, took lumber from the Pacific Northwest to San Francisco and across the Pacific. The arrival of steamships dramatically expanded the water transportation network, which supported commercial development in the region and, in turn, attracted more settlers.[4]

The Mosquito Fleet and the Evolution of Ferry Travel

Although the first steam-powered vessel, the *S. S. Beaver*, arrived on the Pacific Coast in the 1830s, the region's era of steamboat travel really began with the arrival of the *Fairy*, an American steamer, in 1853.

The *Fairy* ushered in a new period of travel for residents along the Salish Sea, providing them with daily passenger and mail service (though chronic maintenance issues often led to delivery delays).[5] By 1857, the *Fairy* left Olympia for Steilacoom every Monday and Wednesday, returning on Tuesdays and Thursdays. On Fridays, the *Fairy* followed an Olympia-Alki-Seattle route; however, she often struggled to make that weekly run.[6]

---

[1] Carolyn Neal and Thomas Kilday Janus, *Puget Sound Ferries: From Canoe to Catamaran* (Sun Valley, CA: American Historical Press, 2001), 20-21.

[2] Neal and Janus, *Puget Sound Ferries*, 30.

[3] Murray Morgan, *Puget's Sound: A Narrative of Early Tacoma and the Southern Sound* (Seattle, WA: University of Washington Press, 1979), 69.

[4] Neal and Janus, 27.

[5] Gordon R. Newell, *Ships of the Inland Sea: The Story of the Puget Sound Steamboats* (Portland, OR: Binfords & Mort, 1960), 10.

[6] Neal and Janus, 28.

Other steamboats followed the *Fairy*'s arrival in the 1850s, providing support to booming commercial industries and an increasing population. In 1854 the steamboat *Major Tompkins*, or "Pumpkins" as locals often called her, provided weekly mail service to settlements along the Sound. Unfortunately, a squall cut *Major Tompkins*' career short, crashing the steamer on the rocks near Esquimalt on Vancouver Island.

By the end of the decade, life on the Salish Sea heavily depended upon steamers for passenger travel and transport of goods. The *Eliza Anderson* arrived in Seattle in 1858, operating between Olympia and Victoria for the next 12 years as well as carrying a mail contract. Although the *Olympia* replaced her in 1877, the *Eliza Anderson* continued as a spare boat until 1882. Between 1886 and 1890, she was part of the Washington Steamboat Company fleet owned by Daniel B. Jackson of Port Gamble. In 1897 the *Eliza Anderson* ended her distinguished 30-year career on the Salish Sea, when she sank in Alaska.[7]

Circa 1960 image of the *Virginia V*. Constructed by Anderson & Company of Maplewood, Washington, for the West Pass Transportation Company in 1921, the *Virginia V* steamship provided ferry service from Seattle to Tacoma until 1938. This former member of the Mosquito Fleet, known as "Virginia Vee" by locals also transported girls from Seattle to Camp Sealth on Vashon Island until 1970 and later served as an excursion vessel. The ***Virginia V*** is listed as an NHL. Following an extensive restoration project, the **Steamship Virginia V** provides public excursions and private charters aboard the vessel throughout Puget Sound. Image courtesy of Washington State Library.

As communities and industries continued to grow over the next few decades, the number of steamers on the Salish Sea multiplied. This loose collection of steamers came to be known as the Mosquito Fleet, supposedly because the vigorous boat activity in Elliott Bay resembled a "swarm of mosquitoes."[8] The fleet served as the foundation for the region's water transportation, providing even the smallest communities with ferry access and mail delivery. Mosquito Fleet steamers picked up passengers and cargo from any community that built a dock along the Sea. Those lacking a dock assembled floats from cedar logs and planks and anchored them out in deep water so passengers could row out and hail a passing steamer. Steamboat captains even accepted lists of supplies that more isolated residents needed from larger communities, delivering the items on the return trip.[9] This early form of ferry service contributed to the growth of small Salish Sea communities like Longbranch, Wauna and Lakebay.

[7] Jean Cammon Findlay and Robin Paterson, *Mosquito Fleet of South Puget Sound* (Charleston, SC: Arcadia Publishing, 2008), 13.

[8] Findlay and Paterson, *Mosquito Fleet of South Puget Sound*, 7.

[9] Neal and Janus, 41.

Despite the Mosquito Fleet moniker, no single company owned or operated the steamers of the Salish Sea, which most likely contributed to the sheer number of boats on the water. Owners and boat captains often developed their own small operations, adapting vessels for ferry use and traveling to a chosen customer base. Sometimes these small operations expanded with the entrepreneurial drive of their owners, such as the S. Willey Navigation Company. Owned by brothers Lafayette and George Willey, the company started with the small steamer *Hornet* in the early 1870s, and eventually expanded to include vessels such as the *Susie*, *Willie*, *Multonomah*, and the *City of Aberdeen*.[10]

The Black Ball Ferry Lines began to make three daily round trips between Anacortes and Orcas Island with the ferry *Crossfire* in June 1940. By 1946, the ferry service was making six round trips a day and continued to increase the number of trips to the island. The Washington State Ferry System continues to operate between Anacortes and Orcas Island and buildings constructed to cater to ferry travelers, such as the historic **Orcas Hotel** (listed in both the Washington Heritage Register and National Register of Historic Places) and the E.C. Russell ice house, are notable landmarks visible from the ferries as they approach the landing. Courtesy Artifacts Consulting, Inc., 2010.

Local industries, such as commercial fishing and lumber, also invested heavily in steamer transportation. Logging companies developed their operations along the water thanks to prime transportation access. Companies even purchased or built their own steam vessels to transport goods, such as the *Julia Barclay*, a 145-foot Douglas fir steamer crafted by Port Gamble mill workers.[11]

The Mosquito Fleet dominated the waters of the Salish Sea for nearly 60 years, connecting residents of rural waterfront communities with the commercial and industrial buzz of larger ports like Seattle, Tacoma and Olympia. However, as automobiles began to capture the heart of the nation, a dramatic shift occurred in marine transportation. Increased road and bridge construction provided new overland routes and led to the establishment of centralized marine docks.[12] Today, only remnants linger of the many Mosquito Fleet ferry docks, as communities and ferry boats abandoned them in favor of automobiles and efficient centralized ferry landings.

[10] Findlay and Paterson, 19.
[11] Neal and Janus, 31.
[12] Findlay and Paterson, 61.

The Black Ball Line and the Origins of the Washington State Ferry System

Several shifts occurred in the system of marine transportation on the Salish Sea during the early part of the 20th century. New road, highway and bridge construction accommodated increasingly popular automobiles and altered the region's landscape. Many residents still relied on ferry service, but now sought transport for both themselves and their vehicles, so ferry vessels had to be redesigned and retrofitted to accommodate the change.

In contrast to the Mosquito Fleet era, a single company emerged as the ferry system of the Salish Sea by the end of the 1930s. The Puget Sound Navigation Company's Black Ball fleet navigated the waters of the Sea until the State of Washington took over in 1951, and many of the ferry terminals and routes established during this period of maritime travel still operate today.

The Puget Sound Navigation Company began with Charles Enoch Peabody, a descendant of the Peabody family that operated the Black Ball Line, a trans-Atlantic shipping and trading company. He arrived in Port Townsend, Washington, in 1883 as a special agent for the Treasury Department and joined with George H. Lent, George Roberts, Melville, Nichols, and Walter Oakes to form the Alaska Steamship Company of Seattle in 1885. Their steamer, *Willapa*, flew the Black Ball flag of Peabody's family. Beginning in 1896, the Alaska Steamship Company expanded to accommodate the Alaskan Gold Rush and in 1897 established the subsidiary Puget Sound Navigation Company (PSN) to handle transportation within the Sea.[13]

Aerial view of Seattle ferry terminal and Colman Dock. Courtesy Washington State Archives.

In 1903 Joshua Green, of La Conner Trading and Transportation Company, merged his interests with the PSN and took over as president for the company with Charles Peabody serving as chairman of the board. The PSN prospered for more than 20 years under Green's leadership. In 1928 Charles Peabody's son, Captain Alexander Marshall Peabody, became the new company president.

Though the black ball flag went with the Alaska Steamship Company when a group called the Alaska Syndicate purchased the company in 1909, Alexander Peabody gained permission from Alaska Steamship to reclaim the logo when he took over. The company's traditional emblem—a black ball on a red field—thus replaced the

[13] Steven J. Russell, *Kalakala: Magnificent Vision Recaptured* (Seattle, WA: Puget Sound Press, 2002), 20.

flag used under Green's leadership, and Peabody renamed the fleet the Black Ball Line, repainting each vessel with the trademark colors red, white, and black. During Captain Peabody's leadership, the PSN continued to acquire independent ferry companies around the region. As a result, the Black Ball line soon dominated ferry service on the Salish Sea.

The PSN initially faced stiff competition in its rise to prominence from the Kitsap County Transportation Company (KCTC), which operated out of the North Kitsap area. Beginning in 1905, the KCTC had acquired or eliminated several competing businesses, including Moe Brothers, Hansen Transportation Company, the Liberty Bay Company and the Poulsbo Transportation Company. But by the 1930s both KCTC and PSN had established their own non-competing routes and the rivalry subsided. The Great Depression in the 1930s fostered union organization for ferry workers. Strikes in November 1935 hit KCTC hard and led the company to offer to sell-out to Black Ball, which accepted and weathered the strikes.

Following the acquisition of KCTC, Captain Peabody worked to revamp his company's ferry service, discontinuing routes and phasing out boat stops, including Eagledale and Port Blakely on Bainbridge Island. Once Black Ball became the primary ferry service operator on the Sea, Peabody worked to increase the number of vessels on high-traffic routes, such as Seattle to Bremerton, which saw an increase in commuters during the Puget Sound Navy Yard's defense build-up before WWII. Though ferry construction had stalled in the region during the Great Depression, a surplus of ferry vessels from San Francisco, coupled with the construction of a series of bridges across the Bay, filled much of the demand for vessels on the Sound. By 1942, Black Ball operated 15 different routes with 23 vessels and 452 sailings each day.[14]

Kalakala

The PSN adapted the steamer vessel *Whatcom* to use as an auto ferry in 1921, the first vessel in the Sea to undergo such a conversion. It cost $100,000, took 40 days

TUGS, TOWBOATS & SNAGBOATS

While larger scale transport vessels, such as ferries and container ships, are often the most readily associated with water transportation, many of them require the assistance of small yet powerful tugs and towboats. These vessels assist other craft, guiding barges or ships that have lost power or maneuvering vessels through narrow channels, crowded ports, or alongside a berth. Tugs and towboats include commercial assistance towboats, harbor tugs, seagoing tugs, ITBs (integrated tug and barge units), and river towboats.

Snagboats removed navigational hazards, like snags that can grow into log-jams and prevent passage, from the Sound's bays, harbors and tributary rivers. These boats usually featured a shallow draft with steam engines driven by a paddle wheel. Washington retains an excellent example of a steam-powered snagboat, the *W.T. Preston*, moored in Anacortes.

[14] Neal and Janus, 84.

and included removing the superstructure above the vessel's deck and widening the hull, bow, and stern.[15] The PSN renamed the vessel, which now could carry up to 60 automobiles, the *City of Bremerton*.

By the mid-1920s, shipyards were constructing new ferries specially designed as auto-ferries and powered by diesel rather than steam. The Skansie Brothers Shipyard in Gig Harbor soon arose as one of the first companies in the region to specialize in designing and building auto-ferries. The shipyard turned out the *Wollochet*, the *Defiance*, and the *Skansonia* between 1925 and 1930.[16] In 1926, the PSN came out with the largest ferry on Puget Sound, converting passenger steamer *Chippewa* into a car ferry. It could carry 90 1926-sized cars and 2,000 passengers.[17]

Puget Sound Navigation Company's *Kalakala* motoring through Rich Passage, ca. 1940. Courtesy Washington State Archives. Designed in the streamlined Art Deco style, the futuristic-looking *Kalakala* became the jewel of the Black Ball ferry line upon its launch in 1935. Despite the vessel's luxury it garnered nicknames, such as "Galloping Gertie," for the incessant vibration caused by its oversized engine. The *Kalakala* served as a ferry until 1967, when she was sold and moved to Alaska for use as a mobile crab-processing vessel and later a cannery. The *Kalakala* returned to Washington in 1998 and despite efforts to restore her is now moored in Commencement Bay in Tacoma in significant disrepair. The ***Kalakala*** is listed in both the Washington Heritage Register and National Register of Historic Places.

By 1933, Captain Peabody had overseen the construction or refurbishing of three additionally impressive ferries within his fleet—*Iroquis*, *Quilcene* and *Rosario*. As Peabody continued to grow and expand the company during the Depression era, he revisited the company's earlier dream to build a showpiece for his fleet. When the Oakland, California, based ferry *Peralta* burned in May 1933, Peabody saw the ruined vessel as the foundation for his new ferry, purchasing it five months after the fire for $6,500.[18]

Construction quickly began at the Lake Washington Shipyards and included never-before used techniques such as the electro-welding process.[19] The finished ship, curvaceous and silver, embodied the popular streamlining design principle of Art Deco. Named the *Kalakala*, it was launched in 1935.

A luxurious interior awaited the *Kalakala*'s passengers, starting with a comfortable observation room and walls adorned with paintings by Seattle artist S. A. Cookson. Passenger cabins featured synthetic leather upholstered settees, while a specially designed "Ladies Lounge" featured red velvet settees and separate restroom

[15] Neal and Janus, 62.
[16] Neal and Janus, 62.
[17] Steven J. Pickens, *Ferries of Puget Sound* (Charleston, SC: Arcadia Publishing, 2005), 14.
[18] Russell, *Kalakala*, 35.
[19] Russell, 36.

1974 image of the *W.T. Preston* steaming through the Montlake Cut in Seattle. Courtesy Washington State Archives. The Army Corps of Engineers utilized the *W. T. Preston*, a steel-hulled flat bottomed sternwheeler snagboat, to improve river and harbor navigation on Washington's Puget Sound. Built in 1939 at the Lake Union Drydock in Seattle, the *W. T. Preston* worked as a snagboat clearing marine passages until her retirement in October 1981. Moved to Anacortes in 1983, the ***W. T. Preston*** operates as a museum vessel open to the public from its dry-berth. The ***W.T. Preston*** is listed as an NHL as one of only two surviving snagboats left in the United States.

facilities. A double horseshoe lunch counter, trimmed in stainless steel, dominated the dining area. The *Kalakala* also featured state-of-the-art safety mechanisms, including the first ever automatic fire control sprinklers to be installed on a ferry.

There were some downsides to the *Kalakala*'s luxury and technological innovations, however. Most prominently, incessant vibration due to an oversized engine led to nicknames such as "Galloping Gertie," "Kelunkala," and "Klanka-a-lot."

As one of the largest ferryboats constructed at the time, the 276-foot *Kalakala* could carry up to 2,000 passengers and 110 cars. She continued in service even through the transition to state ownership and management, until October 1967, when the American Freezership Company purchased her for use as a mobile crab-processing vessel in Alaska's Aleutian Islands.[20]

Washington State Ferries

Captain Peabody and the Black Ball's control over Puget Sound ferries survived and thrived through the Great Depression and WWII, but the company's relationship with the public began to disintegrate following the end of the war and a significant decline in defense industry production, changing the volume of ferry traffic. Peabody responded by decreasing ferry service and applying to the State Department of Transportation for a 30 percent rate increase in late 1946, frustrating a public used to the rates and convenience they had during wartime. Although privately owned, the PSN operated under a franchise agreement with the State of Washington.[21]

Following a failed meeting between Peabody and Governor Mon C. Wallgren and their respective advisors on February 29, 1948, Peabody ordered all 16 Black Ball vessels tied up, stranding almost 115,000 commuters.[22] The next day, the Department of Transportation revoked the PSN's operating license, which opened the door for other private contractors to establish ferry service. Peabody resumed Black Ball service 10 days later, after reaching agreements with individual county govern-

[20] Russell, 100.
[21] Russell, 106.
[22] Russell, 115.

ments. However, these measures did not offer a permanent solution and on December 30, 1949, both sides reached an agreement that the State of Washington would purchase the equipment and operations of the Puget Sound Navigation Company. Washington State Ferries began service on the Puget Sound on June 1, 1951.

PROTECTING OUR SHORES & BUILDING THE FLEET

1917 view of the Puget Sound Naval Shipyard in Bremerton. Naval Station Bremerton includes the Puget Sound Naval Shipyard and Intermediate Maintenance Facility, the Strategic Weapons Facility for the Pacific and the Fleet and Industrial Supply Center. The massive shipyards serve as a regional icon. Courtesy of the Historic American Building Survey collection, Library of Congress.

Military history for the Pacific Northwest is rooted in territorial expansion, war time growth, and development. Our regional identity continues to be shaped by the military—the region is home to several major bases as well as local celebrations such as SeaFair.

The geography of the Salish Sea directly influenced locations of air stations, shipyards and fortifications within the region. As this military infrastructure grew, so did its role in shaping our coastline. The presence of Puget Sound Naval Shipyard's working facilities, as well as the sheer scale of Navy ships moored at its docks visually dominates Bremerton's waterfront. Travel the north portion of Whidbey Island past NAS Whidbey and you'll likely see naval aircraft flying training exercises overhead.

Today the integrity level of these maritime resources remains high. Many structures that are no longer in use have transitioned to interpretive roles as state parks. Those that are still in use typically have a museum that provides interpretation for visitors who could otherwise not come on base.

View of the **Puget Sound Naval Museum** in Bremerton. The Puget Sound Naval Museum in Bremerton provides a remarkable history of our region's naval heritage. Courtesy of Artifacts Consulting, Inc.

Strategic Importance of the North Pacific

The Pacific Coast presents the nation's westernmost continental defense. Miles of deep-water inlets and the sheltered shores of the Salish Sea afforded an ideal setting for naval bases, ship building, and repair and resupply operations. Logistical and operational support extended from here north to Alaska and outward across the North Pacific. Safety of the waterways for commerce and trade as well as national security had been a pressing issue since the first revenue cutter was assigned to the region in 1854. The strategic importance of the region grew with the role and contribution of Salish Sea naval facilities to successive wars.

Protected Ports

The construction and repair of navy vessels, especially during wartime, relies on the relative safety of the ports where they're docked. The Salish Sea provides some

NAVAL UNDERSEA MUSEUM AT POULSBO

Naval Undersea Museum at Poulsbo includes exhibits on Torpedo, Mine, Diving, and Submarine technology. The museum provides an opportunity to view changes in undersea naval technology since the Civil War.

of the nation's most protected ports, allowing massive aircraft carriers to come deep inland behind the Olympic Mountains. The ports also provided excellent access to labor, supplies, natural resources and manufactured parts because of their proximity to railways and urban and industrial centers.[1]

A shipbuilding and repair powerhouse, the southern portion of the Salish Sea was webbed with a network of protected shore installations through the war. The most prominent among these were the Puget Sound Naval Shipyard, Naval Base Kitsap, and Submarine Base Bangor. Tacoma, Seattle, Everett and Bellingham were some of the most important ports for wartime production and repairs.

By the early 1900s the region became an important port of call for the U.S. Navy. Several ships following the Spanish-American War, including the *USS Oregon*, the *USS Arizona*, and the Navy's first aircraft carrier *USS Langley* sailed into the Salish Sea for repairs. In 1908 the Great White Fleet, including 16 battleships and their support vessels, stopped at the Puget Sound Naval Yard for refueling on a tour from Virginia to San Francisco to the Philippines.

With German submarines in the Atlantic cutting off supplies during WWI, the Salish Sea became a critical strategic receiving and manufacturing center for the nation. These ports handled more goods from Asia than any other U.S. port, and more cargo than all but the Port of New York.[2] In 1928, following the war, the Puget Sound Naval Shipyard hosted the nation's newest aircraft carriers, the *USS Lexington* and *USS Saratoga*. The *Lexington* helped provide power to the City of Tacoma through Christmas the following year, after the city lost power due to drought.

Community Connections

Regional naval activities spurred growth and defined the character of many communities such as Port Townsend, Everett and Bremerton. Wartime naval ship building and repair activities provided crucial economic stimulus to the regions' ports, including Seattle, Tacoma, Everett, and Bellingham. Housing and related commercial infrastructure developed at these port cities to support both wartime production and peacetime residences for personnel stationed at the bases. After the war, many of these facilities transitioned to other uses and remained important community working assets.

---

[1] Cory Graff, Puget Sound Navy Museum, *Images of America: The Navy in Puget Sound* (San Francisco, CA: Arcadia Publishing, 2010), 7.

[2] Daniel Jack Chasan, *The Water Link: A History of Puget Sound as a Resource* (Seattle, WA: Washington Sea Grant Program, University of Washington, 1981), 50.

The public enthusiastically embraced war bonds as a way to support the local shipyards, buying them to sponsor ships during the war. That community pride helped anchor the region's shipbuilding reputation.

After WWII, the U.S. Navy began a nationwide event called Fleet Week, which continues today as an important means of public relations for the U.S. Navy. In the Puget Sound region, Fleet Week remains a point of pride and led in part to the creation of the Seafair Festival in 1950. Seafair events include boat races and community parades along with an aerial show performed by the Navy's Blue Angels over Lake Washington.

1960s view of a Seafair parade passing through Pioneer Square in Seattle. Seafair provides an opportunity for the public to view and interact with the Navy's air and marine services. Select ships moored at Seattle are open to the public. The Blue Angels aerial performance over Seattle has become an important tradition for many locals. Image courtesy of the State Library Photograph Collection, 1851-1990, **Washington State Archives, Digital Archives**.

Supply and Refitting

The region's role in provisioning both the fleet and U.S. Navy bases in Alaska reached a critical level during WWII; Japanese attacks along the Aleutian Islands drove the military to fortify its facilities along Alaska to deter a potential offensive from the north. Successful fighting in the Pacific Theater depended upon the quick turn-around of refitted, resupplied and repaired ships, so they could go back on the battle line. Northern bases relied on U.S. Navy operations along the Salish Sea to provide essential supplies and arms.

Facilities at Bangor, Seattle, Indian Island, Manchester, Forest Park and, in more recent years, Everett, led the supply and refitting efforts needed for the large crews that operated and fought from U.S. Navy vessels. Essentials included armament, fuel, food and other basics.

Naval Ammunition Depot Bangor

Prior to becoming a Trident-class submarine base, it operated as the U.S. Naval Magazine during the later part of WWII. Established in 1943, the Navy designed Marginal Pier to load ammunition from land-side storage facilities onto Navy transportation ships. Rail connections delivered the tons of ammunition needed to supply the Pacific Fleet's battleships, aircraft, and other ships to Bangor storage facilities.

SUBMARINE BASE BANGOR AT KEYPORT

Submarine Base Bangor at Keyport includes the Naval Undersea Warfare Center site of the nation's premiere torpedo test, evaluation and repair depot.

MARINE CORPS SECURITY FORCE BATTALION

Marine Corps Security Force Battalion, Bangor constitute the nation's largest Marine Corps Security Force Battalion and date from the Marine Barracks started in 1896 at Puget Sound Naval Shipyard.

U.S. Navy cargo ships would dock at Bangor to then load and carry these munitions out to battle groups and bases operating in the Pacific Ocean. The magazine supplied U.S. Navy forces through the end of WWII and into Korea and Vietnam, until these facilities were moved to Naval Magazine Indian Island.

Pacific Supply Depot at Smith Cove in Elliott Bay

Operated under the command of the 13th Naval District, this depot commenced in 1941.[3] The Navy appropriated city lands, including Piers 90 and 91, along with the immediate shoreline. By 1945 this grew to more than 53 acres of warehouse space, and the facility outfitted Navy ships through WWII and the Korean and Vietnam wars. In WWII alone the facility outfitted more than 500 ships. Nearby barracks and residences housed the several thousand workers stationed at the depot.[4] These piers have since returned to commercial fishing and cruise line use.

Naval Magazine Indian Island

Commissioned in 1941, the Naval Magazine Indian Island began service in WWII as a critical munitions storage and resupply facility. In addition, personnel at the site assembled mines and submarine nets. The facility occupies the entire island and munitions arrive from inland production sites. Following WWII the site's activity status was reduced in 1959 and then reactivated in 1979 in conjunction with the transfer of munitions storage from Bangor to Indian Island. The site remains one of five sites on the Pacific Coast serving U.S. Navy forces in the Pacific Ocean and the Persian Gulf.[5]

US Navy Fuel Depot Manchester

The U.S. Navy developed this site in 1939 to serve as U.S. Navy Fuel Depot Manchester. The first fuel, to supply the Pacific Fleet and shore units fighting in the Pacific Theater during WWII, arrived here for storage in 1941. During the Korean War the Navy constructed additional tanks, up to 38, for a collective storage capacity of 1.8 million barrels. This constituted the largest Department of Defense fuel storage

[3] Port of Seattle, Planning and Research Department, "Report on Alternative Uses for Terminal 91" (1980).

[4] Puget Sound Maritime Historical Society, *Maritime Seattle* (Chicago: Arcadia Publishing, 2002).

[5] United States Navy, "CNIC | Indian Island," accessed November 17, 2010, https://www.cnic.navy.mil/Indian_Island/AboutCNIC/index.htm.

facility in the continental U.S. The overall reservation size has been decreased, but the facility continues to serve as a fuel storage center supplying all Department of Defense as well as some NOAA and USCG vessels.[6]

Navy Support Complex Everett

Everett's more contemporary role as the home port for a U.S. Navy Battle Group provides an important example of changing naval strategy and defense. The home porting strategy emerged in the early 1980s to increase naval presence while maintaining the integrity of battle groups. Everett's piers accommodate an aircraft carrier and the associated surface ships forming this battle group. In conjunction with the Navy Support Complex, this operates as one of the Navy's most advanced facilities.

Naval Ammunition Depot Puget Sound

From 1909 through 1959 an extensive system of ordinance-handling piers, bunkers and magazines, railroad spurs, and a transfer pier all provided critical munitions handling. This facility not only stored and loaded, but also unloaded ammunition for ships entering the Puget Sound for repairs at the shipyard during WWII. It also provided for the demilitarization of ships following the close of WWII.[7] The station closed in 1959 and was converted to military housing in the 1970s. The site was renamed Jackson Park to honor Washington's state Senator Henry "Scoop" Jackson.

Naval Air Stations

Naval Air Stations forming part of the 13th Naval District provided important logistical and communications support, particularly with regular flights that served bases in Alaska to provide equipment and supplies.

Training

Training remains essential to the efficiency and cohesiveness of Navy operations, and facilities along the Salish Sea provided critical and diverse training for personnel. Training activities increased during WWI and reached a heightened urgency during WWII. Today, training activities remain an important and active component of this region.

Key training facilities include the U.S. Naval Reserve Armory in Seattle, Naval Air Stations, and Naval Base Kitsap. The following illustrate a select sampling of these naval training facilities located within the Salish Sea.

[6] United States Navy, "History of the Installation: Manchester Fuel Facility," accessed November 17, 2010, https://www.cnic.navy.mil/Indian_Island/AboutCNIC/index.htm.

[7] United States Navy, "History of the Installation: Manchester Fuel Facility."

1913 view of the Bremerton Navy Yard. Courtesy of the Library of Congress.

US Naval Reserve Armory

Built in 1940–42 as a Works Progress Administration project, this massive armory located at the south end of Lake Union served as a training facility. During WWII, thousands of U.S. Coast Guard, U.S. Marine and U.S. Navy reservists trained in the building's massive drill hall. This armory continues to serve a vital public role. Many of these former armories have transitioned to adaptive uses or have been demolished.

Naval Air Stations

Naval Air Stations distributed along the Salish Sea provided training for Navy pilots. New recruits learned how to land on carriers without ditching the plane in the ocean and took bombing and practice attack runs on wooden hulled ships in the Strait of Juan de Fuca (wooden hulls were used to avoid setting off mines). For night instrument training, Navy members used ships sailing in the sea to refine their approach and attacks. Often these practice runs on an unsuspecting ferry resulted in mock attacks just feet above waves coming up to the ferry, no doubt terrifying ferry passengers.

Pacific Coast Torpedo Station

Commissioned in 1914, the Pacific Coast Torpedo Station at Keyport would transition through a variety of names, but the station's role as a regional and national center for torpedo expertise would steadily increase.

In 1915 the station prepared the first torpedoes and by the 1920s had become one of the nation's premiere torpedo research and training facilities. In 1930 the station was renamed United States Naval Torpedo Station. During WWII the station experienced explosive growth in both torpedo development as well as development of defensive systems to counteract torpedo attacks.

Following WWII this station continued to further its research, developing and constructing three-dimensional underwater ranges for tracking and testing antisubmarine warfare acoustic homing torpedoes. The first of these ranges was built in the Strait of Georgia as a joint venture between the U.S. and Canada in 1963; the range remains in operation.

In 1970 the Navy's Forest Park Ordnance Station closed, moving all of the underwater weapons functions to Keyport. The next several decades brought a series of name changes, from Naval Undersea Warfare Engineering Station in 1978 to Naval Undersea Warfare Center Division, Keyport in 1992.[8] Today the facility continues to serve as an important training center.

Building the Fleet

Navy ships, from their construction through their repair to eventual decommissioning, have provided, and continue to exert, a profound functional and visual presence within the Salish Sea. From the 1908 entry of the Great White Fleet into the Sea, to the return of badly damaged fighting vessels and those at the close of hostilities carrying returning sailors, the presence of the Fleet on the Sea is a point of regional pride and tradition. The legacy of facilities for constructing, repairing and decommissioning ships provides an essential part of the Sea's character.

Ship Building

As early as the late 1860s the Salish Sea, with its deepwater harbors and abundant natural resources was attractive to the U.S. Navy as a potential shipbuilding center, and in the 1890s the Navy selected Point Turner on Sinclair Inlet to build a new navy yard. By 1903 the facility had become the region's largest employer as it brought in crews to develop the shipyard facilities and supporting infrastructure. The Puget Sound Navy Yard turned out its first ship, a small water barge, in 1904.

After WWI the yard embarked on a series of firsts in specialty Navy ship designs: the Navy's first ammunition ship, the *USS Pyro*, launched in 1919; the first repair ship built specifically for this function, the *USS Medusa*, launched in 1923; and the *USS Louisville*, in 1930, was the first heavy cruiser launched from the yard. During WWII the yard built several destroyers and their escorts. Among these was the *USS Holland*, serving during WWII in the Pacific Ocean, near the patrol zones of Allied submarines to repair and refit them as quickly as possible.

This navy yard also served as an important catalyst for private shipbuilding efforts. During the 1910s a coordinated effort between the Moran Company and the Puget

[8] United States Navy, "History of Installation: Naval Base Kitsap Keyport," accessed November 17, 2010, https://www.cnic.navy.mil/Kitsap/AboutCNIC/index.htm.

Sound Navy Yard resulted in the building of several submarines, a pair of which the U.S. covertly relocated north to Canada at the outbreak of WWI, in violation of U.S. neutrality laws.

The Todd Dry Dock and Ship Building Company in Tacoma provided an important supply of Navy ships during and between both world wars. In 1920 the yard launched the *USS Omaha*, then the lead in its class of light cruisers, the longest vessel built in the Puget Sound up to that time and the first built in the Sound to be slid bow-first down its slipway when launched. The yard also built the *USS Commencement*, the only one built, launched and commissioned on her namesake bay. Pierce County citizens raised funds via war bond drives to pay for the escort carrier's construction costs, which earned them the right to name the ship after Commencement Bay.

During WWII, the Todd and Kaiser shipbuilding companies formed a joint venture, the Seattle-Tacoma Shipbuilding Corporation, to focus shipbuilding efforts in the region. Tacoma's shipyards on Commencement Bay and the Foss Waterway specialized in the construction of escort carriers termed "baby flattops." These ships served in the Pacific and as convoy escorts in the Atlantic; they were comparatively inexpensive to construct relative to larger fleet vessels and could be produced at a much faster rate. Shipyards at Seattle's Harbor Island at the mouth of the Duwamish River specialized in sleek destroyers, becoming the nation's third largest builder of destroyers during WWII. In one 36-month period the yard completed 126 destroyers on only ten slips, which ran 24 hours a day.

Shipyards at Bellingham and Aberdeen produced ships during both WWI and WWII. The Lake Washington Shipyard in Houghton, south of Kirkland, produced small AVP-class seaplane tenders during WWII. The Ballinger Boat Works in Kirkland built boats for the Coast Guard.

Ship Repair

Repairing ships was crucial to bringing the vessels back to the battle line and establishing the U.S. as a world naval power. Something as simple as clean hulls, for example, improved speed and lessened fuel consumption. Repairs became significantly more challenging and intricate as the size and technology of systems employed in ship operation advanced. Often repairs included refitting ships with the latest advancements in military fire control or other weapons systems in the midst of a war conflict to gain an advantage.

Puget Sound shipyards repaired some of the most heavily damaged ships during WWII, and the Puget Sound Navy Yard served as the main repair center for damaged battle ships, aircraft carriers, and smaller ships.

Puget Sound Navy Yard

Designated a National Historic Landmark site, the first of the yard's three dry docks was completed in 1896 in time for the *USS Oregon* to be the first battleship to dock at the yard. In 1913 the second dry dock was completed, the largest in the Navy at the time. The third was completed in 1919 with a focus on building new ships. In the 1930s the Navy added a massive hammerhead crane (lift capacity was tested to 350 tons) to the yard to lift heavy armor and guns to and from ships.

Bow view of the ***USS Hornet CVS-12***, designated as National Historic Landmark, the ship served in WWII in the Pacific Theater and assisted in the 1969 recovery efforts of the Apollo 11 and 12 command modules. Courtesy of the Historic American Engineering Record collection, Library of Congress.

During WWII the shipyard served as a major repair yard for damaged ships. It was the only West Coast facility that could undertake repairs to damaged battleships, and of the eight battleships bombed at Pearl Harbor, five were repaired and returned to the front lines by the Puget Sound Naval Yard. Over the course of the conflict the yard repaired 26 battleships, 18 aircraft carriers, 13 cruisers, and 79 destroyers and built or fitted with advanced technology another 50 ships.[9]

Following the war, the yard's name changed to Puget Sound Naval Shipyard and the focus shifted to modernizing carriers. With the outbreak of the Korean War the yard began reactivating ships and commenced building some of the Navy's first guided missile frigates.

In 1965 repair work on the Navy's first nuclear powered submarine, the *USS Sculpin*, began an ongoing legacy for the shipyard of repairing nuclear powered ships. In 1990 it started the world's first recycling process for nuclear powered ships.

Naval Submarine Base Bangor

Initially serving as Naval Ammunition Depot Bangor during WWII, Korea and Vietnam, the facility began the transition to its current role as a submarine base and repair yard in the 1960s. In 1964, the site became a Polaris Missile Storage Facility, then in the 1970s moved on as the Strategic Weapons Facility Pacific, having oversight of the Trident Missile program. Half of the nation's fleet of Trident mis-

[9] United States Navy, *Navy Yard Puget Sound*, National Register of Historic Places Nomination (Washington DC: National Park Service, Undated).

The *USS Turner Joy* (DD-951), launched in 1958 operated during the Vietnam War and named in honor of Admiral Turner Joy. Built in Seattle by the Puget Sound Bridge & Dredging Company. The Bremerton Historic Ships Association maintains the vessel as the **USS Turner Joy (DD-951) Naval Destroyer Museum Ship**, providing public tours and overnight stays for groups.

sile submarines are based out of Bangor, Kings Bay, Georgia, in the Cumberland Sound is its East Coast counterpart. In 1977 the facility was commissioned as Naval Submarine Base Bangor and received the first Trident submarine in 1982, the *USS Ohio*. An additional seven boats followed, at a rate of approximately one a year; Bangor held primary maintenance responsibility for them. To repair the submarines, the Navy built the Delta Pier. With a triangular shape and two retrofit piers, it is one of the Navy's largest dry docks and the only dry dock in the world built parallel to the shoreline. The facility also provides expertise in mechanical, electrical, hull and weapons system repairs.

Mothballing Ships

The decommissioning of ships and the effective hibernation of systems and materials in as near a state of arrested decay as possible presents an important asset management program for the Navy. With each major conflict, in particular the world wars, the Navy and contractors churned out massive volumes of vessels that were no longer needed at wars' end though often reactivated in emergencies—WWII saw the reactivation of WWI ships, and the Korean War saw the reactivation of WWII ships.

Following WWI, Lake Union provided an important storage site for decommissioned freighters. These vessels soon earned the nickname "Wilson's Wood Row." The Puget Sound Navy Yard provided facilities for mothballing the Navy's warships.

Protecting the Salish Sea

The strategy for protecting the Salish Sea from attack has progressed through several fundamental approaches, each leaving their lasting mark upon the landscape.

Prior to the Civil War, the region was still in early exploration and territorial stages and had not yet developed the massive vertical walled fortifications of the East Coast. Defenses focused on repelling wooden sailing vessels, and muzzle-loading cannons in earth and stone works were the principal means of defense. During and

throughout the Civil War, no one considered an attack to the Salish Sea very likely. The United States did not yet have a well-developed external military policy.

As the nation recovered from the Civil War and trade and commerce expanded, the nation re-evaluated its system of coastal fortifications. Iron-hulled, steam powered vessels had begun to replace wooden sailing ships starting in the 1860s. Ships began using mounted steel breach cannons with rifling that could easily penetrate vertical earth and stone fortifications. Over the next 20 years the nation began to implement a modernization program known as the Endicott program. The new system, completed by 1915, represented the state of the art in coastal defense using recessed modern weaponry that blended in with the landscape and used searchlights to defend against vessels attacking at night.[10] The sense of security and strength imparted by this expensive and extensive system ushered in a period of growth in U.S. sea power and imperialism. Legacies of this program in the Salish Sea are Forts Flagler, Worden, Casey and Ward. WWI, however, ushered in advanced ship weaponry and the Navy's use of airplanes, which relegated the Endicott system to near defenseless.

The growth of shipyards and repair facilities began in WWI and reached maturity in WWII. During WWII, the U.S. capacity for strategic weapons system development the ability to not only quickly repair battleships, but to concurrently refit them with the latest in armament and technology and return them to battle, contributed to the nation's increasing naval power. Extensive training facilities developed during this time contributed to more and more experienced sailors reaching the front lines and having the ability to use the advanced weaponry.

Conversions also assumed a central role during the Second World War. This involved the adaptation of non-military ships and facilities to military use or focused production, which included camouflaging them (as well as purpose-built military facilities) to appear to be non-military sites. Disguised facilities made for some of the most dramatic examples, such as the Boeing factory along the Duwamish River, which was covered to look like a residential neighborhood using paint and other props. Similar efforts were employed at air stations to soften the hard lines of facilities and runways, making them less defined. These largely disappeared following the war.

Forts

The late 1850s through the 1890s saw the construction of the system of forts defending the Salish Sea. Many continued to be used through multiple conflicts and often transitioned through different functions. These include both Endicott-designed and pre-Endicott installations, as well as subsequent harbor and coastal defense facilities built during WWII. They articulate the changing technology and military defense strategy. The breadth of battlegrounds, forts and gun emplacements in this

[10] (Hansen 1975)

View of American Camp on San Juan Island. American Camp along with English Camp form the **San Juan Island National Historical Park**. Image courtesy of Artifacts Consulting, Inc., 2010.

region underscores the strategic importance of the Salish Sea.

Battle of Seattle Site

A plaque at the corner of 3rd and Jefferson in Seattle commemorates this battle between Native Americans and Euro-American settlers, which occurred on January 26, 1856. Marines from the Decatur, along with shots from the ship's cannons, deterred further escalation of tension.. The relative safety of marine access for naval defense afforded an increased perception of security for settlers, contributing to the ongoing development of Seattle.[11]

Fort Bellingham and American Camp

Under the command of Captain George E. Pickett, troops from Company D, 9th Infantry began construction of the fort in 1856, displacing the original land claimants. Overlooking Bellingham Bay, the fort occupied a commanding location. The guard stationed at the fort provided a U.S. military presence emphasizing U.S. claim to the land and protected the coal mine at Bellingham, which provided fuel to Navy steamers. The garrison also worked on the construction of Military Road south to Fort Steilacoom. Within just three years of construction, however, the facilities were dismantled and moved out to San Juan Island at Griffin Bay to form American Camp during the Pig War.[12] Despite relocating most of the buildings, a military guard remained at the site until 1861; the federal government released the land back to the prior land claimants in 1868. The **Whatcom Museum of History and Industry** maintains collections of artifacts associated with the site.

Fort Casey

Admiralty Head provided a commanding location for both a gun emplacement and a lighthouse. The federal government set 640 acres aside as a reserve in 1866. Funding for planning was not allocated until 30 years later, and construction of initial fortifications and support facilities commenced. Named in honor of Brigadier General Thomas Lincoln Casey, the reservation's acreage expanded in 1900 to enable

[11] Margaret A. Corley, King County Liaison, *Battle of Seattle*, Historic Property Inventory Form (Seattle: Washington State Department of Archaeology and Historic Preservation, 1969).

[12] Charlotte V. Schneider, Special Research, *Fort Bellingham*, Historic Property Inventory Form (Olympia: Washington State Department of Archaeology and Historic Preservation, 1969).

construction of expanded officer and enlisted housing, as well as parade grounds and support facilities. The Admiralty Head lighthouse followed soon after, in 1903.

The fort operated as part of a tripartite defense of the Salish Sea, which stemmed from Secretary of War Endicott's 1885 recommendation for a national fortification program. The other two forts operating in this group were Fort Worden and Fort Flagler.

During WWI activity and new construction at the fort increased. Following the war, the fort gradually shed functions and entered into a caretaker status. The need to strengthen Puget Sound's Harbor Defenses during WWII prompted new construction and use of the facility for training. Following the close of that war, the property was quickly surplused out through General Services Administration to the Washington State Parks and Recreation Commission for use as an interpretive site, becoming **Fort Casey State Park.**[13]

View of Fort Flagler on Marrowstone Island. Image courtesy of Artifacts Consulting, Inc., 2011.

Fort Flagler

Located at the northernmost point of Marrowstone Island, this fort is situated almost at the midpoint of Admiralty Inlet, the single navigable entrance to the Salish Sea. Construction of the gun batteries started in 1897 and was completed by 1910, with each battery designed and positioned on the reserve to repel a particular class of warship. Searchlights facilitated the sighting of targets at night. In keeping with the Endicott design the batteries were sunk deep into the ground and invisible to approaching ships.

Envisioned as the headquarters for the tripartite defensive protection of the Salish Sea, based on Secretary of War Endicott's 1885 recommendation for a national fortification program, Fort Flagler operated in a group with Fort Worden and Fort Casey. The fort's isolated location, however, led to a relocation of the headquarters and central troop dispatch to Fort Worden.

Following the close of WWI, the fort was reduced to caretaker status and only a small detachment was left on-site. But as defensive efforts began during the build up to WWII, the fort took on an important role in the harbor defenses, and new buildings went up on site and the fort was used for training. Activities once again receded

[13] Luxenberg, Castellano, Lein, *Fort Casey Military Reservation/Fort Casey State Park*, PNRO Inventory Form, Ebey's Landing National Historical Reserve (National Park Service: 1983).

after the close of WWII. In 1955 the reserve was surplused to the Washington State Parks and Recreation Commission.[14] The fort is listed to the NRHP and is now operated as a **Fort Flagler State Park**.

Fort Hayden

Located at Tongue Point on Crescent Bay, this prominent site served as a reference marker in locating the 49th parallel for the US/Canadian boundary treaties of 1846 and 1908. Striped Peak, which overlooked Tongue Point, was a prime location for gun emplacements that would make up part of the WWII harbor defenses. The U.S. Army fortified the peak and installed gun emplacements linked by tunnel to power plants. The largest guns ever produced in the U.S., 16-inches, were installed. Each gun fired a projectile nearly 50,000 yards, or a little over 28 miles, which would land the projectile, weighing more than a ton, in Clallam Bay. The gun was only fired once before being scrapped and the tunnels and fortifications became storage facilities for the civil defense.[15]

Fort Lawton

Located off West Point, overlooking the Puget Sound, Fort Lawton was established in 1897. Listed to the NRHP and City of Seattle Register of Historic Places, the fort was named for Major General Henry W. Lawton.[16]

Construction commenced in 1898 with the first residences completed in 1900. Leading up to WWI, the fort experienced only modest use by two to four infantry companies. This prompted early efforts to convert the fort to a municipal park. However, WWI increased the fort's use and by WWII it became the West Coast's second largest port of embarkation. An estimated 1.1 million troops, bound for Pacific, Asian, Near East and Alaskan theaters, were processed through the site for induction and training during the second war alone. In addition, the Interceptor Command of the 2nd Army Air Force was able to manage civilian air spotters spread throughout the Pacific Northwest from the fort.

Following the war, the fort became home to two of the state's five Nike Hercules Air Defense Systems, the iconic spherical domed radar and large antennae. By the 1970s, the Army began transferring land to the city, which became Discovery Park.

---

[14] David M. Hansen, National Register of Historic Places, *Fort Flagler*, Port Townsend, Jefferson County, Washington, National Register #45JE00084.

[15] Clallam County Historical Society and Irwin C. Harper, National Register of Historic Places, *Fort Hayden*, Crescent Bay, Clallam County, Washington, National Register #45CA00233.

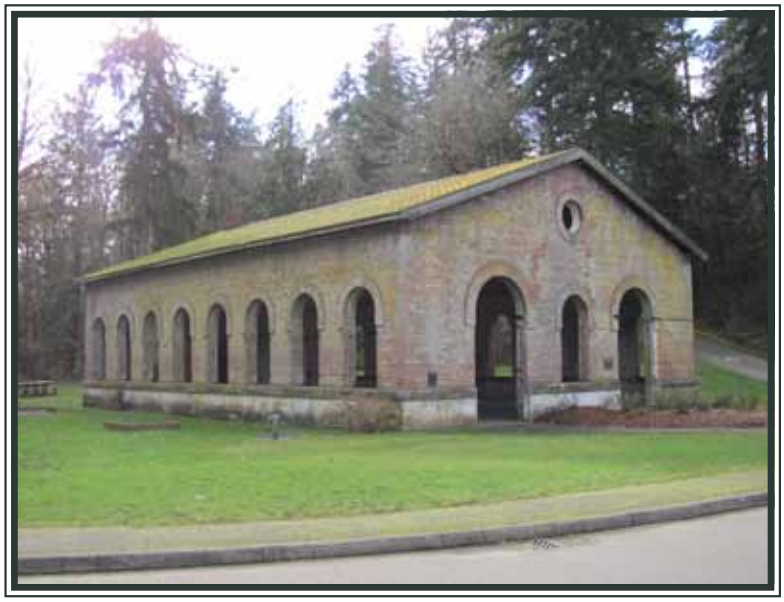
[16] Writers' Program of the Work Project Administration in the State of Washington, *Washington: A Guide to the Evergreen State* (Portland: Binford & Mort, 1941, revised 1950), 228.

Some Navy housing, civil defense and communication facilities still remain at the site.[17]

Fort Mitchell

Established in 1898 by the U.S. Army in conjunction with Fort Ward to protect Rich Passage, this 385-acre reserve protected the main access route along the south end of Bainbridge Island to reach the Puget Sound Naval Shipyard at Bremerton. Agate Passage, off the north end of Bainbridge Island, was the only other water route into the shipyard narrows under 700 feet.

During WWI, the facility expanded functions to serve as a torpedo testing station. As the need for land-based fortifications decreased, the role of this fort as a fuel storage facility became increasingly important.



View of a former torpedo storehouse associated with the Middle Point fortification. The storehouse stored mines for an underwater mine field laid across Rich Passage, but went out of operation in 1910. The building remained empty until WWI when it was briefly used as a torpedo testing facility. The torpedo storehouse and a nearby mining casemate building are now maintained by the Washington State Parks and Recreation Commission as **Manchester State Park**.

Fort Townsend

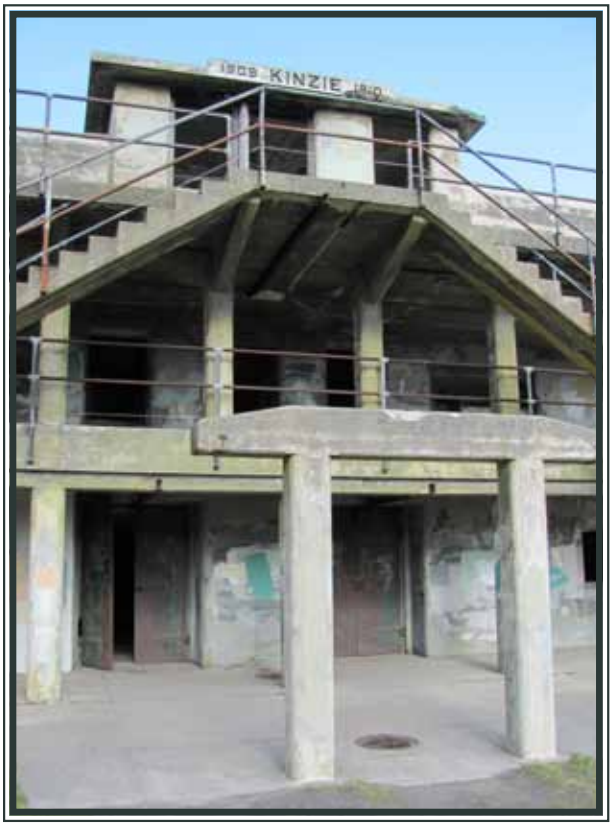
The U.S. Army established Fort Townsend in 1856 to provide a military presence in the area during tensions between Euro-American settlers and Native Americans and as a claim to the land. During the Pig War, a garrison was dispatched to American Camp on San Juan Island. The U.S. Civil War broke out and resulted in abandonment of the fort for more pressing issues. In 1871 the Army ordered the fort reactivated, a status it retained for the next 20 years. During WWII the fort served as an enemy munitions defusing station. During the 1950s the property was surplused to the Washington State Parks and Recreation Commission.[18] Listed to the NRHP, the site is currently **Old Fort Townsend State Park**.

Fort Ward

Established in the 1890s in conjunction with Fort Mitchell, the fortifications occupied Bean Point at the southernmost portion of Bainbridge Island. Fort Ward's mines and gun emplacements were designed as a final line of defense to repel en-

[17] BOLA Architecture + Planning, National Register of Historic Places, *Fort Lawton Historic District*, Seattle, King County, Washington, National Register #45KI00670.

[18] Jefferson County Historical Society and Gerald A Hunt, National Register of Historic Places, *Old Fort Townsend State Park*, National Register #45JE00026.



View of Battery Kinzie at Fort Worden State Park. Image courtesy of Artifacts Consulting, Inc., 2011.

emy ships attempting to enter Rich Passage. The fort formed a unique part of harbor defense in consisting of two separate installations on either side of the passage; Fort Mitchell was on the other side on the rocky outcropping of Middle Point. The majority of facilities were located at Fort Ward, however, and it also contains the only military facilities built in Western Washington with brick before 1917.

In contrast to the fortifications at Fort Casey and Fort Flagler, Forts Ward and Mitchell's defensive strategy relied upon a minefield as a means of closing access to the passage, a method that the swift currents in most other Puget Sound locations prevented. Smaller guns fired from shore were designed to keep smaller enemy ships from removing the spherical mines, which were anchored beneath the surface of the water and could also be launched into the Passage from shore. Lines that ran between the Peninsula and Bainbridge Island were completed by 1900.

The separation of the facilities across the passage led to closure of the Fort Mitchell facilities due to the difficulty of maintaining them. These facilities were rebuilt on the Fort Ward side.[19]

During WWII the fort became the communication center for the North Pacific Fleet. U.S. Naval Radio Activities, first stationed at the Puget Sound Naval Shipyard, then Keyport Naval Torpedo Station, were ultimately stationed at Fort Ward. Listed to the NRHP, the site is now operated as **Fort Ward State Park**.

Fort Worden

Located at the northeastern tip of the Quimper Peninsula, this fort overlooks both the Strait of Juan de Fuca and Admiralty Inlet. Established in 1898, construction of the facilities was completed by 1910.

The fort was one of the largest built as part of the Endicott system, featuring more than 40 guns, and the only one constructed within sight of another nation (Canada). Once military bosses realized the isolation of Fort Flagler, they transferred the headquarters for the Puget Sound Harbor Defense System to Fort Worden.

[19] David M. Hansen, National Register of Historic Places, *Fort Ward Historic District*, Bainbridge Island, Kitsap County, Washington, National Register #45DT00008.

Following the close of WWII the fort became a military engineering post. During the early 1950s the property was surplused to the Washington State Parks and Recreation Commission.[20] The site is listed to the NRHP and is now operated as **Fort Worden State Park**.

Indian Island

During the build up to WWII, the Navy deployed nets across Port Townsend Bay. Concrete buttresses built at Indian Island and Port Townsend supported cables stretched across the water. The intent was to provide a protected anchorage location for the fleet while resupplying and refitting at the Naval Magazine Indian Island. By 1942 the Navy relocated the torpedo overhaul operations from Indian Island to NAS Whidbey.

Westport Coast Artillery

During WWII gun emplacements from Battery Lee at Fort Flagler were relocated to Westport, another piece in the harbor defense system strategy. These long-range guns were directed out to the Pacific Ocean to assist in the defense of Grays Harbor. Following WWII the guns were removed and the area was converted to a park.[21]

Fort Ebey

Built as part of the WWII coastal defense system, this fort included a series of gun emplacements. The reservation was surplused to the Washington State Parks and Recreation Commission and today functions as **Fort Ebey State Park**.

Ships

Washington's shipyards produced some notable vessels that went on to serve in many of the world's conflicts. These shipyards are also where some of the nation's most important ships come to roost. Complex to maintain, they provide an opportunity to experience past technologies and gain a sense of scale to past events. Several ships were important during the formative years of the territory's development, yet remain only in record and memory.[22]

[20] American Association for State and Local History, National Register of Historic Places, *Fort Worden*, Port Townsend, Jefferson County, Washington, National Register #74001954.

[21] Hansen, *Fort Flagler*.

[22] Gideon Hermanson, National Register of Historic Places, *USS Missouri*, Bremerton, Kitsap County, Washington, National Register #45KP00028.

1942 view of a guard posted before a new B-17F Flying Fortress at Boeing's Seattle plant. Courtesy of the Library of Congress.

Aviation

Naval aviation emerged during WWI and quickly grew to a major force along the Salish Sea through WWII, in particular through the growth and development of Boeing. The 13th Naval District operated a massive regional network of naval air stations and auxiliary air stations. These were essential in training new navy carrier-based pilots prior to deployment as well as giving experienced aviators continued training. The system of facilities provided an aerial umbrella for the critical shipyards located throughout the region and a logistical arm for transporting troops and supplies north to Alaska.

Eugene Ely and Hugh Robinson are affectionately credited with an early milestone of aviation in the region, when they buzzed Elliott bay in their Curtiss airplanes in 1911. During the 1920s and 1930s the Navy engaged Boeing to develop and build several small fighters capable of launching from the Navy's first aircraft carriers. The Army and Navy operated a joint yard at what would become Naval Air Station Seattle. Production facilities for Boeing expanded rapidly around Renton to keep pace with wartime demand.

The following provide an overview of major shore-side aviation facilities within this report's survey area.

CGAS Port Angeles, Wash.

Established in 1935, the CGAS Port Angeles, near the end of Ediz Hook, provided support facilities for Coast Guard operations under the command of the District Coast Guard Officer and the Commander Naval Air Bases 13ND (headquartered at NAS Seattle). This station featured an outlying field at Port Angeles that had not been activated by 1944. This continues to serve as an important Coast Guard installation.

NAAS Quillayute, Wash.

Established in 1944, NAAS Quillayute provided maintenance, assembly, and class "C" repair facilities for naval aircraft units. Located on the Pacific Coast, the airfield is near La Push.

NAS Whidbey, Wash.

Established in 1942, NAS Whidbey consisted of both a seaplane station at Oak Harbor and a land plane base at Ault Field.[23] Outlying fields at Mount Vernon and Coupeville provided additional support. The seaplane base served as the headquarters for NAS Whidbey.

The location commanded the eastern end of the Strait of Juan de Fuca and the entrance to the Puget Sound. Its distance from populated areas allowed soldiers to use live munitions during training.

The station housed the following activities: Steward's Mates School; Marine Barracks, NAS Whidbey Island, Fleet Air Wing SIX (headquarters); Naval Air Gunners School; and the Advanced CIC Team Training Center. A core part of the station's original function was that of a torpedo-rearming station. Over the course of WWII, the station developed as a center for equipping planes with rocket launchers and rocket firing training.

By 1942 the base became an important training area for machine gunners and long range navigation missions, as well as bombing, rocket and machine gun attacks on targets in the Strait of Juan de Fuca. B-26s towed targets behind them. That same year the first Catalina (PBY patrol bomber) landed. These would often make their training runs along Saratoga Passage. F4F Wildcats also operated from the airfield, as well as F6F Hellcats and PV-1 Venturas. By 1944 the SBD Dauntless dive-bombers represented the predominant aircraft.

Following the close of WWII NAS Whidbey became the major Navy airfield, since NAS Seattle could not be expanded. It grew to an all-type, all-weather Navy field designed to support both Pacific Fleet and Alaskan operations. P5M-2 Marlin patrol squadrons operated out of the base through the 1960s, along with heavy attack squadrons. By the 1970s the base's emphasis shifted to become the Tactical Electronic Warfare Squadron, and search and rescue and naval reservist training ground.[24]

NAS Seattle, Wash.

Established in 1926 as a Naval Air Reserve Station, this station soon became a NAS in 1928 and provided centralized command and support facilities for the 13ND. The station included provisions for an outlying field at Bremerton. This station is listed to the NRHP at the national level of significance.

[23] Following WWII, the station enjoyed a brief respite under operation status of caretaker, until reopening in 1949 and assuming the role of the largest naval aviation center in the 13ND.

[24] United States Navy, *CNIC | Naval Air Station Whidbey Island*, accessed November 17, 2010, https://www.cnic.navy.mil/Whidbey/AboutCNIC/GeneralInformation/index.htm.

The station housed Naval Air Bases, 13ND, headquarters; Fleet Air, Seattle (headquarters); Carrier Aircraft Service Unit SEVEN (headquarters); Air Transport Squadron FIVE (headquarters and terminal facilities); Navy Weather Central, Seattle; Overseas Air Cargo Terminal, Seattle; Naval Training School (Link Celestial Navigation Trainer-Class "C"); Steward's Mates School; and Marine Barracks, Naval Air Station Seattle.

One of the station's core functions was to maintain and operate facilities and provide services for training naval aircraft units and personnel. The supply department provided logistical support, furnishing aviation equipment and materials for other facilities within the 13ND, as well as ships designed to carry aircraft. Crews could undertake major overhauls and repairs to engines and aircraft at on-site facilities. This operated in conjunction with an in-depth training program for naval personnel.

NAS Seattle also had Navy Weather Central, which broadcasted weather forecasts and storm warnings to facilities, ships, and aircraft within the 13ND. Naval Air Transport Service, Air Squadron FIVE provided important logistical support along the West Coast with operation routes running between San Diego and Attu, in Alaska's Aleutian Islands.

Coastie Head Lookout Cabin

The attack on Pearl Harbor in 1941 heightened awareness of the vulnerability of the Pacific Northwest's strategic cities, shipyards and factories. The resulting Coastal Lookout System became an important defensive tool that provided early warning lookouts and controlled shore to enemy communications. The Coast Guard, under naval command, assumed the primary role in carrying out these duties. The Coastie Head Lookout Cabin in Olympic National Park provides an excellent example of these temporary structures, which were operated briefly through 1944.

The Port Angeles sector of the lookout system extended approximately 65 miles from Cape Flattery south to Cape Elizabeth over rugged, densely wooded shoreline. A series of lookout towers were located between Shi Shi Beach and Cape Johnson, with outposts for patrols along the shoreline at Seafield, Cape Alava, Sand Point, Wink Trail, Yellow Banks, Township Trail, Allen Trail, Lone Tree Rock and Cape Johnson. Construction materials were packed in or brought in by small boat from Neah Bay.[25]

Aircraft Warning Service Observation Tower

Built in 1941, this 35-foot tall wood-frame tower remains as the only intact civilian volunteer lookout tower. Originally located at the southeast corner of Old Olympic

[25] Gail E. H. Evans, Stephanie Toothman, Gretchen Luxenberg, and Jacilee Wray, National Register of Historic Places, *Coastie Head Lookout Cabin,* La Push, Clallam County, Washington, National Register #45CA00538.

Highway and Kitchen-Dick Road, local citizens staffed the tower 24/7 for two years. They were connected to a telephone filter center in Port Angeles on West First Street, in the former Joseph Paris Garage, and reported all aerial activity they observed. During the 1950s the tower served as a Civil Defense lookout. In 1992 the tower was moved to its current location, at 216 Spring Road in Agnew, WA.[26]

[26] Leonard Garfield and Harriet Fish, National Register of Historic Places, *Aircraft Warning Service Observation Tower*, Agnew, Clallam County, Washington, National Register #45CA00519.

HARVEST FROM THE SEA

Circa 1930-1940 image of an oyster barge. Image courtesy of the Washington State Library.

Since prehistoric times, the Native Americans of the Northwest Coast relied heavily on the sea and shoreline for their diet, rituals and inter-tribal trade. Washington's bounty of natural resources proved irresistible to entrepreneurs who came to seek their fortunes in abundant salmon and other natural resources such as timber. Newcomers from Europe and, later, from other parts of the U.S., began to harvest fish and shellfish for export, increasing their hauls with advances in methods and technology, as well as increases in the number of commercial and sport fishermen. Overharvesting, physical changes to the marine environment and contamination of the waters decimated salmon, halibut, and other types of seafood. During the second half of the 20th century, Washington's imperiled salmon population began to rebound thanks to restoration efforts from multiple entities.[1]

Since the start of Washington's commercial fishing fleets in the 19th century, related industries, such as canneries and shipyards flourished. Fishing communities have unique sea-oriented life rhythms and traditions. In addition to the infamous salmon, other marine resources have been instrumental in building Washington's sea-faring heritage. Unfortunately, many properties related to the early boom growth fell into disuse by the mid to late 20th century and are now endangered resource types. Net sheds and canneries that once dominated waterfronts are now rare. Numerous shipyards, fishing piers, cleaning sheds and fishing vessels are still present, but they represent a fraction of what once existed.

1933 troller *Twilight*, built at Fishermen's Terminal in Seattle by H. C. Hanson. The vessel is now moored on display at the Northwest Seaport, Lake Union. Image courtesy of Artifacts Consulting, Inc., 2011.

Battle Over Fishing Rights

Long before European and American explorers began visiting the Northwest Coast, Native Americans harvested the sea for sustenance and trade. Salmon figured prominently in the lore and identity of many Washington tribes, but other types of fish were also caught and used, including sturgeon and trout. The Makahs of Neah Bay

[1] A. C. Radke, *Pacific American Fisheries, Inc.: History of a Washington State Salmon Packing Company, 1890-1966* (Jefferson, NC: McFarland & Company, Inc., 2002), 5-6. Multiple stakeholders in the 1990s restoration efforts included governments, fishermen, processors, etc.

have canoe-based whaling traditions. However, the relationships between Northwest Coast native peoples and the sea began to change with the arrival of the newcomers. In the 1850s, 20 tribes signed away their lands in exchange for perpetual fishing rights and reservations. The Native Americans of the Salish Sea saw these treaty rights ignored and/or questioned until the second half of the 20th century. The story of native fishing rights in Washington is an important part of this region's maritime heritage.

> "The right of taking fish and usual and accustomed grounds and stations is further secured to said Indians, in common with all citizens of the United States; and of erecting temporary houses for the purposes of curing; together with the privilege of hunting on open and unclaimed lands..."
>
> Treaty of Point No Point
> January 26, 1855

Many Coast Salish tribes depended on salmon for sustenance, lore and trade with other groups. In the 1790s, Captain George Vancouver's expedition recorded local cultures along with landscapes. Among other things, these drawings illustrate Coast Salish salmon nets and drying racks. Suquamish men fished with spears in deep waters while women fished with homemade hooks.[2] Native people offered smoked salmon to Captain Robert Gray, another explorer of the late 18th century.[3]

Besides salmon, other types of fish, as well as shellfish, provided sustenance and a means for intertribal trade. Regionally, marine mammals, octopus, and seaweed were also important food sources, and the by-products of marine flora and fauna supported material culture.[4] A pioneer account from the mid-19th century tells of Native Americans fishing for massive sturgeon from canoes in a bay along the coast. Pieces of the fish were boiled, smoked, roasted, or eaten raw.[5] Deep shell middens demonstrate the longstanding tradition of harvesting clams and oysters. Native Americans tended natural oyster beds, protecting young oysters from natural predators and pests.[6] Smoked fish and shellfish of the coast were historically traded with tribes further east, and from the mid 19th century, some tribes sold seafood to early Euro-American settlers.

Even before statehood, Euro-Americans flooded into the territory. With an eye to the future, the U.S. government signed treaties with local tribes to acquire land rights for settlement. In exchange, tribes were guaranteed fishing rights in traditional and accustomed grounds— rights that were quickly ignored. As the commercial fishing industry took off in Washington during the late 19th century, fishermen and processors relied heavily on Native labor but largely blocked traditional subsistence fish-

---

2 Virginia Sharff & Carolyn Brucken, *Home Lands: How Women Made the West* (Berkeley: University of California Press, 2010), 94.

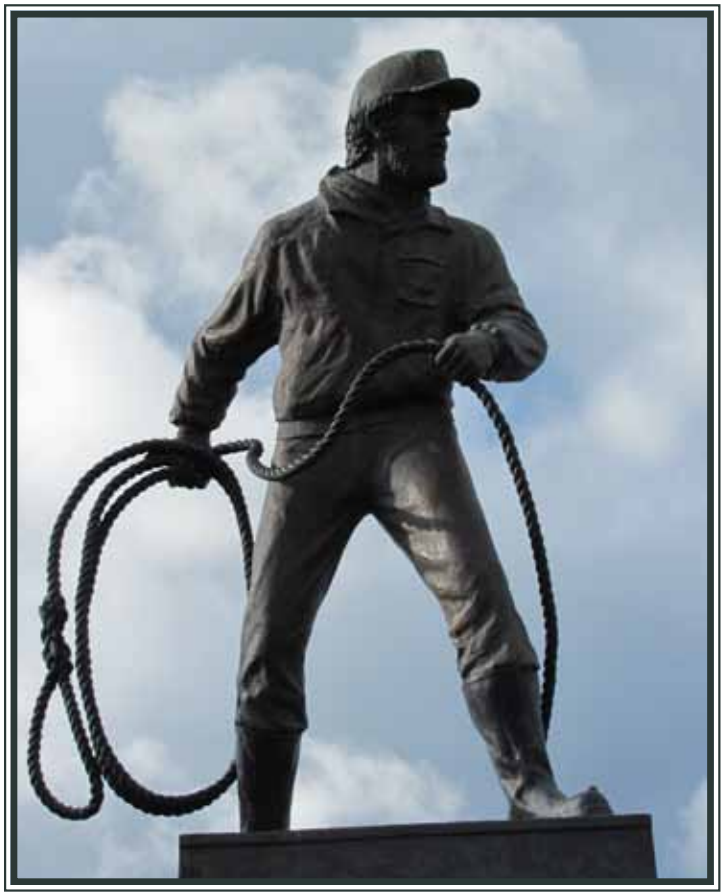
3 Howard Corning, ed., *The New Washington: A Guide to the Evergreen State* (Portland, OR: Binfords & Mort, 1950), 82-83.

4 Washington Department of Archaeology and Historic Preservation, *Washington State National Maritime Heritage Area Feasibility Study* (March 2010), 24.

5 James G. Swan, *The Northwest Coast* (Seattle: University of Washington Press, 1977), 245-246.

6 Humphrey Nelson, *The Little Man and the Little Oyster* (Belfair, WA: Mason County Historical Society, 1990), 64.

ing activities.[7] With statehood came legislation classifying and regulating the sale of tidelands. Though some tideland was sold to Native Americans, they lost much of their traditional food collection territory. White landowners hired Native Americans to perform their historic work of culling full-grown oysters from the beds. By 1890, demand for oysters had grown, operations expanded and companies, at least in South Puget Sound, began to also hire Chinese laborers for culling. The Chinese eventually replaced Native American workers, and Japanese workers later replaced the Chinese.[8] Canneries also replaced the Native labor force, further excluding them from the fishing industry.



Detail of the fisherman's statue at Zuanich Park on Bellingham Bay, entitled "Safe Return." Image courtesy of Artifacts Consulting, Inc., 2011.

After decades of struggle to have tribal fishing rights recognized, the tensions over broken promises and fears about declining fish runs brought Native, commercial, and sports fishermen to a dangerous boiling point. Articles in regional newspapers and magazines covered the "Fish Wars" in the 1960s and early 1970s, citing the arrests of and attacks on Native fishermen.[9] These attacks included violence by state game wardens and state police on the Puyallup River, filmed by video and still cameras. Continued arrests and physical confrontations, along with the systematic denial of the tribes' fishing rights, resulted in the lawsuit U.S. vs. State of Washington brought by U.S. Attorney Stan Pitkin, on behalf of the tribes.[10]

Previously, in 1969, Judge Robert C. Belloni had found in favor of native rights and conservation in Sohappy vs. Smith. Five years later, U.S. Federal District Court Judge George Boldt of Tacoma also upheld native fishing rights in his landmark 1974 decision in U.S. vs. State of Washington, also known as the Boldt Decision.[11] In essence, the Boldt Decision found that the 20 tribes who had signed the 1855 treaty with the federal government were guaranteed half of the allowable salmon catch from their historic fishing grounds, off the reservations. Furthermore, Native Ameri-

[7] Daniel Jack Chasan, *The Water Link: A History of Puget Sound as a Resource* (Seattle: University of Washington Press, 1981), 129.

[8] Nelson, *The Little Man and the Little Oyster,* 67-68.

[9] Cecelia Svinth Carpenter, Maria Victoria Pascualy, & Trisha Hunter, *Nisqually Indian Tribe* (Charleston, SC: Arcadia Publishing, 2008), 77.

[10] Chasan, *The Water Link,* 130-134.

[11] Barbara A. Froelich, "The Nisqually and Other Small Tribes of Puget Sound," (1991), 31.

Skansie, Andrew and Bertha, Net Shed in Gig Harbor. Image courtesy of Artifacts Consulting, Inc., 2010.

cans had exclusive rights to resources within reservation boundaries.[12] The treaty reserved "certain lands and rights in perpetuity" to the Native signers, which Judge Boldt reinforced.[13] Later challenges to the Boldt Decision went up to the U.S. Supreme Court, which upheld the original ruling.

Following the 1974 Boldt Decision, the Northwest Indian Fisheries Commission (NIFC) formed to support the tribes' intergovernmental relationships in their new roles as co-managers of natural resources with the State of Washington. The commission is comprised of representatives from each of the affected tribes. In order to assist the member tribes in co-managing Washington's natural resources, the commission provides scientific management data and technical assistance, serves as a forum to address issues, and represents the 20 tribes to the federal government.[14]

More information on the history of Native Americans' fishing rights struggle can be found through many resources, including these:

- Cecelia S. Carpenter et al, *Nisqually Indian Tribe* (Charleston, SC: Arcadia Publishing, 2008).
- Northwest Indian Fisheries Commission, **http://nwifc.org/**
- Daniel Jack Chasan, *The Water Link: A History of Puget Sound as a Resource* (Seattle: University of Washington Press, 1981)

Early Economies

Washington's wealth of natural resources and easy access to water-based trade routes attracted international attention during the Second Great Age of Discovery. Territory, timber, fisheries and pelts were prominent incentives as Spain, Britain, and later the United States raced for dominance. Early growth of the territory was rooted in exploitation of these natural resources combined with easy shipping ability.

---

[12] Daniel L. Boxberger, *To Fish in Common: The Ethnohistory of Lummi Indian Salmon Fishing* (Lincoln, NE: University of Nebraska Press, 1989).

[13] Carpenter, Pascualy, & Hunter, *Nisqually Indian Tribe,* 76.

[14] Northwest Indian Fisheries Commission, "Northwest Indian Fisheries Commission: About Us," accessed December 1, 2010, http://nwifc.org/about-us/.

Before the famous salmon industry began in Washington, another marine resource called attention to North Pacific waters. In the mid-1790s, whale oil demand rose. American whaleships, then all based on the East Coast, increased in number and hunted farther distances to find prey, which meant sailing around Cape Horn and into the Pacific Ocean; British whaleships led the way. A New Bedford ship, the *Rebecca*, was one of the first American whaleships to venture into the Pacific. In 1791–1793, its sailors saw 40 other such ships, including seven from Nantucket and one each from Hudson and Boston.[15]

The Wilkes Expedition highlighted the importance of the Pacific Ocean, specifically charting the shoreline and inlets, to American whaling. Lengthy voyages meant East Coast whaling vessels increasingly depended on Pacific ports. For example, after American whaleships visited Hawaii for the first time in 1819, the islands quickly became the principal regional whaling base. By the mid-19th century, Hawaiian ports saw hundreds of such ships each year—600 in 1846 alone. The islands served as the shipping point for unloading whale cargo, resupplying, and hiring Hawaiian crew (Kanakas) by the thousands.[16] San Francisco also became a prominent whaleship port in the mid-19th century.[17]

> "Bad luck to the day,
>
> I wandered away
>
> And to the man who said I'd make a sailor.
>
> He wrote my name out
>
> To be tumbled about
>
> Aboard an old-fashioned whaler."[1]
>
> —A song of the North Pacific whale hunters (lyrics)

[1] Corning, 324.

Whaling out of Puget Sound ports gained importance early on. Besides whales, oils were obtained from the eulachan, or candlefish, and the dogfish.[18] The Bellevue-based American-Pacific Whaling Co. Fleet, one of the North Pacific whaling operations, consisted of six steamships that carried an average crew of 12 men. Crewmember families packed the Bellevue wharves at the start and end of whaling season (June to October), to send off or welcome back loved ones.[19] American whaling in the North Pacific eventually came to a close, a result of many factors including increasingly sparse prey, lack of market demand for whale products, increased conservation efforts and high costs of operations.

Besides whaling, other early marine harvesting efforts fed the economic growth of the territory. Manmade oyster beds adjacent to natural ones had early success, which prompted high land prices and a rush on purchasing any section of waterfront, regardless of actual oyster productivity. Early oyster-growing entrepreneurs

[15] Eric Jay Dolin, *Leviathan: The History of Whaling in America* (New York: W. W. Norton and Company, 2007), 182.

[16] Dolin, *Leviathan,* 245.

[17] Dolin, 247.

[18] Howard McKinley Corning, *The New Washington: A Guide to the Evergreen State* (Portland, Oregon: Binfords & Mort, 1950), 84.

[19] Corning, *The New Washington,* 324.

PACIFIC SALMON SPECIES

Five species of Pacific salmon have historically been caught in Washington fisheries: chinook, coho, pink, chum, and sockeye. Pink are the most common and comprised the majority of canned salmon historically. Chinook (also known as tyee, quinnat, spring, or king) salmon are the largest—some have weighed more than 100 lbs. but average 15 to 30—and arguably the most valuable to commercial fishing. In the early 20th century, the Pacific American Fisheries Company mild-cured chinook salmon for export to Germany. Coho is the type most often caught by sport fishermen. Chum is usually the cheapest in terms of market value. Sole and cod fish have also been caught in Puget Sound, during winter months.[1] Sockeye have a deep red colored flesh, average about seven pounds and have an extra large run about every fourth year.

[1] Radke, *Pacific American Fisheries, Inc.*, 7-8..

scrambled for land near natural beds and installed dikes, to maintain a low water level even at low tide and manage water flow direction, or "artificial current."[20] Around 1908, Washington oyster growers introduced the Japanese variety, a much larger species than native oysters, and found that it could thrive here.[21]

Early fish exports from Washington capitalized on the abundant runs of salmon as well as other species. In the early 19th century, a process for salting fish was introduced. In later years, the Hudson Bay Company capitalized on exporting various types of preserved fish, including salmon, around the world. Early attempts at packing salted salmon on Elliott Bay for shipment to San Francisco, around the mid-19th century, spoiled in transit. However, the notion that fish could be a valuable, exportable product caught on with several small traders and fish packers scattered throughout the region.[22] According to Howard Corning in *The New Washington: A Guide to the Evergreen State*, "The first floating cannery in the Territory, equipped with a brick furnace and an iron cauldron, was launched in 1867 by an ex-shipwright, S. W. Aldrich, a jack-of-all-trades, who fished alone and made his cans himself."[23] Canning advances in the 1870s prompted more formal packing operations. V. T. Tull started to pack salmon in 1873 at Mukilteo, and four years later, the Jackson-Meyers Company opened the first Puget Sound cannery. The Northern Pacific Railroad's completion helped expand the fish export business by facilitating the shipment of fresh fish back East. Mergers and corporate investment in the fish processing industry in Washington grew exponentially during the 1890s.[24]

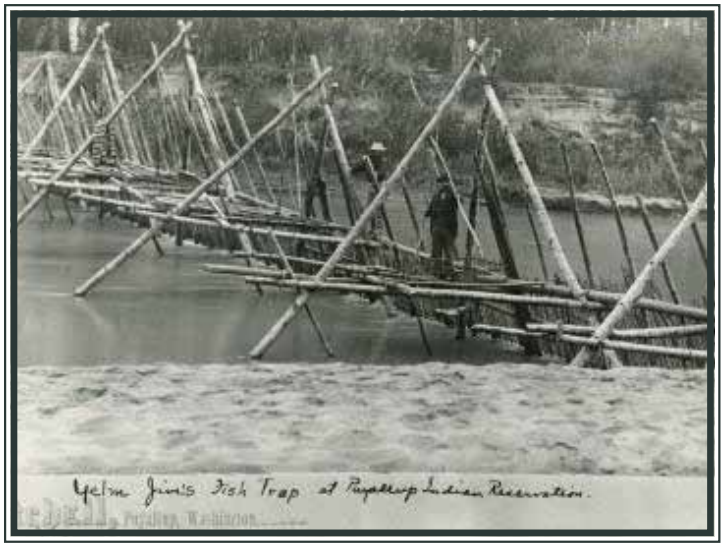
More information on the development of Washington's fishing industry, the associated communities, and how they all contributed to the territory's growth can be discovered through many sources, including books, web sites, and museums, including the following, which have fishing exhibits and/or special collections for public visitation:

[20] Nelson, 66, 71-72.
[21] Corning, 85.
[22] Corning, 83.
[23] Corning, 83-84.
[24] Corning, 84; Terry Slotemaker, *Fidalgo Fishing* (Anacortes, WA: Anacortes Museum, 2005).

- **Harbor History Museum**, Gig Harbor
- **Washington State History Museum**, Tacoma
- **Kitsap County Museum**, Bremerton
- **Anacortes Museum**, Anacortes
- **Alaska Packers Association Museum** (formerly called Semiahmoo Park Maritime Museum), Blaine (operated by Drayton Harbor Maritime)

Evolution of Fishing Products & Technology

The Industrial Revolution, which transformed approaches to many aspects of manufacturing and processing, extended to the fishing industry. In the Pacific Northwest, advances in fishing technology led to boom growth for that industry as well as the associated communities. Processing became more mechanized and evolved to allow long-distance shipping. Vessels were upgraded with gasoline engines and labor-saving equipment. Experiments with fishing by-products attempted to find uses for the huge amounts of wasted material. The Washington coast became increasingly urban, rooted in the pilings and wharves of canneries, net sheds and other fishing-related structures.



Circa 1895 image of Yelm Jim's fish trap on the Puyallup Indian Reservation. Image courtesy of the Washington State Library Digital Collections.

Early non-native fishing in Washington was largely adapted from Native American methods—reef nets, fish traps, weirs, etc. In general, the fishing techniques of this region can be categorized as such: hook and line (trolling), encirclement (purse seines), entanglement (gill nets), and entrapment (fish traps/pound net, stationary). After fish traps and wheels were banned in the 1930s, netting became the most common harvest method in commercial salmon fishing. Net fishing falls into two main categories in the Northwest: gill nets and purse seines. Gill nets could be of two types, drift (movable) or set (fixed) and have been used primarily in stream or channel fishing. In deeper water, purse seines dominated, especially with the advent of boats powered by gas engines with winches to haul up the seine. Purse seiners were introduced to the U.S. in the 19th century to catch schools of fish near the surface—salmon, Pacific cod, pollock, and herring. Puget Sound's first gasoline-powered purse seiner was used in 1903.[25] These types of fishing boats comprised a

[25] Radke, 9.

large percentage of the fishing fleet on the West Coast in general. It is claimed that purse seiners caught more salmon among the Washington fleets than any other type of vessel or fishing method. Seine skiffs, or dories, set the nets and were stored onboard. Some wooden purse seiners are still in use and may be spotted in various marinas, but newer steel hulled vessels have somewhat replaced them.

Fishing boats moored at Fisherman's Terminal, Seattle. Image courtesy of Artifacts Consulting, Inc., 2011.

There are two types of gill netters, bow-pickers and stern-pickers. Almost any type of vessel, even sailboats, can be used with gill nets, as fish are picked by hand from the net. Gill netters are usually run by one or two adults, whereas purse seiners are larger, require more people and a dory.

Yet another fishing method, which is starting to make a comeback, is the longline method. In this system, long lines ("skates") with lots of hooks along their length are baited, laid along the ocean floor with end anchors, and pulled up by machinery after about a day. Skates, are tied together to form long units, ranging from 1800 to 2000 feet long. Halibut are usually caught this way.[26]

The fish traps of the late 19th and early 20th centuries caught most of the migrating breeding salmon. Combined with the netted and line-caught fish from coastal waters, Washington's fishing industry boomed. Experiments with processing fish waste materials made herring oil and fertilizer profitable. Even later, in the mid-20th century, innovations in fish by-products continued to add value to otherwise wasted resources. Parts of halibut, ling cod, and sable fish produced more than one million gallons of oil annually in the 1940s, and fish meal and fertilizer were also profitable.[27]

A new fish-processing machine, invented in ca. 1902 by E. A. Smith, was first used by the Northern Fisheries Co. in Anacortes in 1904 and was quickly adopted by every cannery there. The new machine butchered, cleaned, and cut salmon to canning-length sections. The downside of this new device, which could process thousands of fish each hour, was that it rendered many human laborers obsolete. Still, Washington's fisheries employed 3,643 workers and the value of their products (excluding oysters) by 1910, annually, reached $5,559,000. The salmon harvest of 1913 totaled 41,500,000 fish, with a processed value of over $14 million. The industry in

[26] RaeJean Hasenoehrl, *Everett Fishermen* (San Francisco: Arcadia Publishing, 2008), 23; 60.
[27] Corning, 85-86.

Washington employed 15,611 workers that same year.[28] Salmon was the most common fish for canning, but clams, oysters, tuna and other types of seafood also underwent processing in waterfront plants.

1924 cannery tender Beryl E, designed by L. E. (Ted) Geary and still in active fisheries use by the Hoppen family. Image courtesy of Artifacts Consulting, Inc., 2011.

One of the behemoth canning companies in Washington's history is Pacific American Fisheries (PAF). Financiers from Chicago and New York, represented by E. B. "Ed" Deming, officially began Pacific American Fisheries by purchasing a Fairhaven (now part of Bellingham) salmon cannery, begun by Roland Onffroy, and fish traps around 1899.[29] PAF owned canneries and fished in Alaska, but operated out of Fairhaven.[30] By 1920, PAF was one of the largest private enterprises on Bellingham Bay.[31] In 1925, PAF packed nearly 12,000 cases of salmon, while Astoria and Puget Sound Canning did more than 61,000 and Bellingham Canning Company processed 69,000 cases of salmon that year.[32]

According to Everett historian and author RaeJean Hasenoehrl,

> *During the early years of fishing, fishermen faced many disappointments in finding markets for their catch...when the catch was plentiful, canneries turned away many boats because they had no room. These circumstances led to the invention of a new relationship between Everett's cannery and local fishermen. In 1928, vessel owners banded together to purchase the Everett Packing Corp. and form the Fisherman's Packing Corp. (FPC). The concept behind the cannery was for it to operate for the sole purpose of caring for the daily catch of the seiners. Stock in the company was only issued to boat owners actively fishing each season.*[33]

The FPC had 22 members to start but grew to 80 by 1931. The capacity and output of their cannery also grew exponentially, offering at least four types of canned salmon.[34] However, the increased number of fishing boats meant increased competition for fewer fish. Post-WWII, after wartime restrictions were lifted, the industry picked up again. New fishing methods, such as trawling for bottom fish, significantly in-

[28] Corning, 85.
[29] Radke, 1.
[30] Radke, 2.
[31] James H. Hitchman, *The Port of Bellingham: 1920-1970* (Occasional Paper #1, Western Washington State College, Bellingham: Center for Pacific Northwest Studies, 1972), 17.
[32] Hitchman, *The Port of Bellingham,* 47-48.
[33] Hasenoehrl, *Everett Fishermen*, 67.
[34] Hasenoehrl, 70.

creased the harvest. Fisheries employed modernized product storage and packaging methods, and built new mooring facilities.[35] New gear and machinery—faster boats, power blocks, power drums, nylon nets, and more—allowed bigger hauls. Mario Puretich is credited with inventing the power block in the early 1950s. This labor-saving mechanized pulley hauled purse seines aboard. Interest in the device grew quickly. According to Hasenoehrl, "By 1960, most vessels in Washington's fleet had installed the power block."[36]

More information on the history of Washington's commercial, recreational and subsistence fishing, including the methods, types, and technologies, is available:

- Sebastian-Stuart Cannery, Anacortes (HPI form)
- Adaptive reuse of a former cannery, now a hotel, Port Townsend downtown (HPI form)
- **Harbor History Museum**, Gig Harbor: Home of the fishing vessel *Shenandoah*
- **Northwest Seaport**, Seattle: Home of the 1930's era troller *Twilight*
- **Alaska Packers Association Museum** (formerly called Semiahmoo Park Maritime Museum), Blaine (operated by Drayton Harbor Maritime)

Folkways, Culture and Rhythm

Numerous cities along the Washington coast formed around the early fishing industry, both for local and export markets. Fishermen and their families were at least partially responsible for molding their communities, which included Gig Harbor, Anacortes, Everett, and many more. Neah Bay became known as a hub for the halibut fishing fleet.[37] Everett and Anacortes are still associated with their early fishing fleets and canning history, even though most of the canning industry is now gone. Gig Harbor and Seattle have long been important harbors for fishing fleets and continue in that role today.

Early immigrants often came from Northern or Eastern Europe and encouraged relatives to follow, forming strong ethnic enclaves. Fathers fished with their brothers and sons, passing along traditions and family businesses. Seamanship was taught from a young age. Women and girls had important industrial roles as cannery/processing workers, especially from around the 1930s.[38]

---

[35] Corning, 86.

[36] Hasenoehrl, 35.

[37] Elizabeth Colson, *The Makah Indians, A Study of an Indian Tribe in Modern American Society* (Minneapolis: University of Minnesota Press, 1953), 8.

[38] Hasenoehrl, 7.

Everett

Croatian and Scandinavian families settled in Everett starting in the 1890s, bringing their net fishing skills with them. All types of fishing vessels, from purse seiners to trollers, worked out of Everett and anchored the burgeoning community. As the fishing industry bloomed and more immigrants arrived to take part in it, a commercial fleet took shape. Seafood from Puget Sound and the Pacific Northwest in general eventually entered the national and international markets.[39] Stephen Chase founded the Everett Fish Co. in 1903 and also owned Seattle's Whiz Fish Co. and Quality Sea Food Packing Co. Chase was involved with several other fishing and packing companies throughout the region.[40]

Life revolved around the sea and the fishing seasons. Sending crews off in the spring for the north and welcoming them home in the fall became a widespread tradition. In Everett, "Get Away Day" marked the start of the annual salmon season, as the Everett fishing fleet went to Alaska every year. For this big event, mastheads flew flags, captains wore special jackets and hats, and families of the fishermen would crowd the docks, sometimes accompanying their loved ones on their fishing vessels for some miles. Off Hat Island, the seiners would lash themselves together to form a huge base for a farewell party. After the party, family and friends who were not making the long trip north boarded another boat returning to Everett.[41]

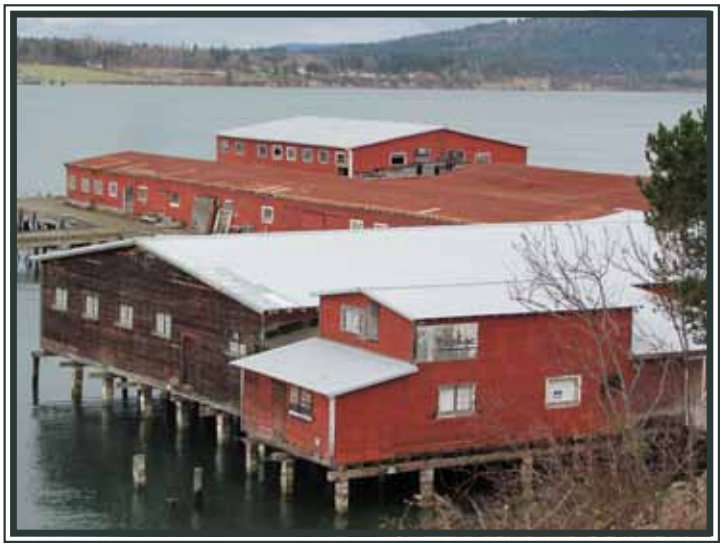
Former cannery warehouse at Semiahmoo. Image courtesy of Artifacts Consulting, Inc., 2011.

Often, fishing boats carried family and friends for picnic days. Many headed to Whidbey Island from Everett for strawberry season farm day trips, to pick berries for jam.[42] Even during the winter off-season, there was work to be done from land. Fishermen repaired nets, worked on their boats, and sometimes built boats, including recreational vessels for clients outside of the fishing industry.

Anacortes

The seafood processing and canning business in Anacortes began in the 1890s. Some of the earliest companies from that decade included Matheson's Codfish Plant,

[39] Hasenoehrl, 7.
[40] Hasenoehrl, 62-65.
[41] Hasenoehrl, 54.
[42] Hasenoehrl, 96.



Built in 1915, the now vacant Sebastian Stuart Company building originally served as a salmon cannery. In 1937, tuna canning operations were added in the facility, establishing the first tuna cannery in the Puget Sound. Image courtesy of Artifacts Consulting, Inc., 2011.

W. A. Lowman Canning Co., Fidalgo Island Canning Co., Anacortes Canning Co., Rosario Straits Packing Co., Apex Fisheries, and Northern Fisheries. Pacific American Fisheries (PAF) opened a facility in 1900, closely followed by Booth Fisheries, Robinson Fisheries, Chlopeck Fish Co., Sanitary Fish Co., and Salina Fisheries.[43] There were floating canneries, as well as canneries on pilings along the waterfront, for salmon, cod, and more. By 1915, Guemes Channel had 11 cannery sites and the Fidalgo Island fishing fleet boasted more than 100 vessels.[44] Guemes Island had the Great Northern Packing Co. beginning in 1917.[45]

The canned salmon market collapsed after WWI. Prices fell and the industry was no longer as profitable. Unrest followed in the 1930s for many fishing companies. The anti-fish trap movement passed an initiative banning the traps that had allowed packers to control their fish supply. Labor rights under the New Deal guaranteed that workers could organize and engage in collective bargaining, resulting in conflicts between cannery owners and labor unions for fishermen and others involved in the industry (longshoremen, cannery workers, etc.), and a rise in labor costs.[46] After WWII, changes in market demand, food processing and shipping technology, and fishing regulations further changed the salmon industry. Production dropped drastically in the 1960s, and finally the last canneries of Anacortes closed in the 1990s.[47] Processors refocused on other seafood products and frozen fish.[48]

In 2007, the National Oceanic and Atmospheric Administration (NOAA) profiled the fishing communities within the scope of this Washington maritime project area for a West Coast and North Pacific fisheries study. They include: Aberdeen, Anacortes, Bellingham, Blaine, Edmonds, Everett, Fox Island, Friday Harbor, Gig Harbor, La Conner, La Push, Lopez Island, Neah Bay, Olympia, Port Angeles, Port Townsend, Seattle, Sequim, Shelton, Stanwood, Tacoma, and Westport. Several other communities were included in the NOAA study but are too far south or too far inland for inclusion in this project context. All of these communities together represent the current (and

43 Slotemaker, *Fidalgo Fishing*, 94-95.
44 Slotemaker, 87. The first cannery opened on Guemes Island in 1893; Slotemaker, 70.
45 Slotemaker, 94.
46 Radke, 2.
47 Slotemaker, 87.
48 Slotemaker, 71.

often historic) primary users of West Coast fisheries with regard to commercial, recreational, and subsistence harvest.[49] Even though salmon canneries have closed, other types of seafood processing continue in these communities.

More information on the history of Washington's fishing communities is available here:

- **Kitsap County Historical Society & Museum**, Bremerton
- **Nordic Heritage Museum**, Seattle
- **Harbor History Museum**, Gig Harbor
- **Anacortes Museum**, Anacortes

Fishery Restoration

The depletion of Washington's fisheries happened over many decades, with the causes not being well-understood or agreed upon. The abundant salmon runs which first attracted commercial fishers and waterfront industry began to diminish in the early 20th century, with 1913 marked as a peak year. Congress began in the 19th century to aim legislation at managing the fishing and shellfish populations, with successive attempts throughout the 20th century. The long-term effects of relatively recent restoration efforts are still being tracked and analyzed, with hopes that fish numbers will bounce back for future generations.

One of the picnic shelters at Twanoh State Park along Hood Canal, a popular shellfish gathering place. Image courtesy of Artifacts Consulting, Inc., 2011.

The first legislation fighting fishery depletion passed in 1890 in Washington State. These measures established seasons and quotas, with specific types of fishing permitted in particular areas.[50] However, these quotas and protection measures did not seem to stick. High-impact fishing methods such as fish wheels and traps, which caught so many salmon that essentially none were allowed upriver to spawn and repopulate, were used until the 1930s. In 1934, Initiative 77, abolishing the use of fish wheels, traps, and other types of fixed fishing gear passed by a wide margin of votes. The measure disallowed purse seining in the lower Puget Sound and (re)established regular fishing seasons, quotas, and the rotation of fish-

[49] K. Norman, J. Sepez, et al., *Community Profiles for West Coast and North Pacific Fisheries* (U. S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-85, 2007).

[50] Corning, 85.

ing fleets.[51] The initiative attempted to open the fishing industry up to smaller, independent boats and break the monopoly of the large companies. By addressing these aspects of the industry, supporters hoped the measure would restore the salmon population to its 1913 level.

But Initiative 77 did not fix the salmon depletion and Washington's fisheries declined due to many factors: unlimited catches; logging and the resulting disappearance of many small spawning streams; sewage from cities and towns emptying into streams; lumber operations (e.g. sawmills, pulp mills, woodworking plants) at mouths of rivers and streams causing congestion and altered ecological conditions; construction of hydroelectric dams, making impassable obstacles for salmon headed upriver for spawning; and natural predators.[52] Adding overfishing to this mix meant that more fishermen were competing for fewer and fewer fish.[53]

Derelict wooden reef boat on Lopez Island. Image courtesy of Artifacts Consulting, Inc., 2011.

Looking back from the mid-20th century, the peak salmon run of 1913 became a goal to aspire to when people spoke of fisheries restoration. Moreover, the fishing fleets increasingly turned to Alaskan and Canadian waters for salmon. Post-WWII, the Washington fishing fleet grew, doubling between 1965 and 1974.[54]

In 1950, Seattle was an important international halibut port.[55] Yet halibut was also overfished to near extinction. Canadian and U.S. fishermen realized the gravity of the situation and applied to their respective governments to take measures. This was the start of the International Fisheries Commission, formed by a treaty between the two nations. IFC has been successful in gathering scientific data and regenerating the halibut numbers off the Northwest Coast. The sockeye population also dwindled and needed similar international treaties and cooperation to survive.[56] Today, Washington's leading communities (counted by commercial licenses) for fishing in the North Pacific are Seattle, Bellingham, Edmonds, Shoreline and Anacortes. Seattle is the hub for the North Pacific fishing fleet from Washington, especially the largest vessels.[57]

---

51 Corning, 85.
52 Corning, 85. Trout naturally feed on salmon roe.
53 Chasan, 127
54 Slotemaker, 70.
55 Corning, 85.
56 Edward Weber Allen, North Pacific (New York: Professional & Technical Press, 1936), 33-34.
57 Norman, 55.

Fish Hatcheries

Besides protective legislation and treaties, fish hatcheries have attempted to conserve, protect and enhance Washington's fisheries for more than a century. The first fish hatchery in Washington State began in 1895. Within the project area of Grays Harbor and north, the oldest known hatchery is the Quilcene National Fish Hatchery. Located along Hood Canal, it has continuously operated since 1911, raising multiple varieties of salmon and trout for release into Hood Canal and the Strait of Juan de Fuca. According to the hatchery website, "Early methods of fish culture were primitive. Hatchery workers would hang parts of horse or cow carcasses over the fish pond. Flies would lay eggs in the decaying flesh and the maggots would fall off into the water, feeding the fish."[58]

While Washington's extensive network of hatcheries began early in the territory's history, the severe decline of the salmon population by the 1960s prompted a boom for hatchery construction which lasted through the 1970s. According to the Washington Department of Fisheries, 90 percent of the sport and commercial coho salmon caught in Puget Sound in 1972 originated from hatcheries; in preceding years, that number had hovered around 40 percent.[59] Today, hatcheries continue to refine their management practices in order to support Washington fisheries, with increased attention on sustainability and the recovery of wild salmon populations.

Hood Canal Hatchery in Hoodsport. Image courtesy of Artifacts Consulting, Inc., 2011.

The 1960s and 1970s also saw the rise of the fish farming movement, which spread around the world. Raising fish in saltwater net pens allows tidal action to bring in fresh oxygen and wash away waste. It also eliminates the role of traditional fishermen, since the farmed fish never leave for open waters. The University of Washington's Dr. Lauren Donaldson was one of the prominent early advocates of fish farming. Another significant name is that of Dr. Timothy Joyner, once director of the National Marine Fisheries Service's Aquacultural Experiment Station at Manchester, on Puget Sound.[60]

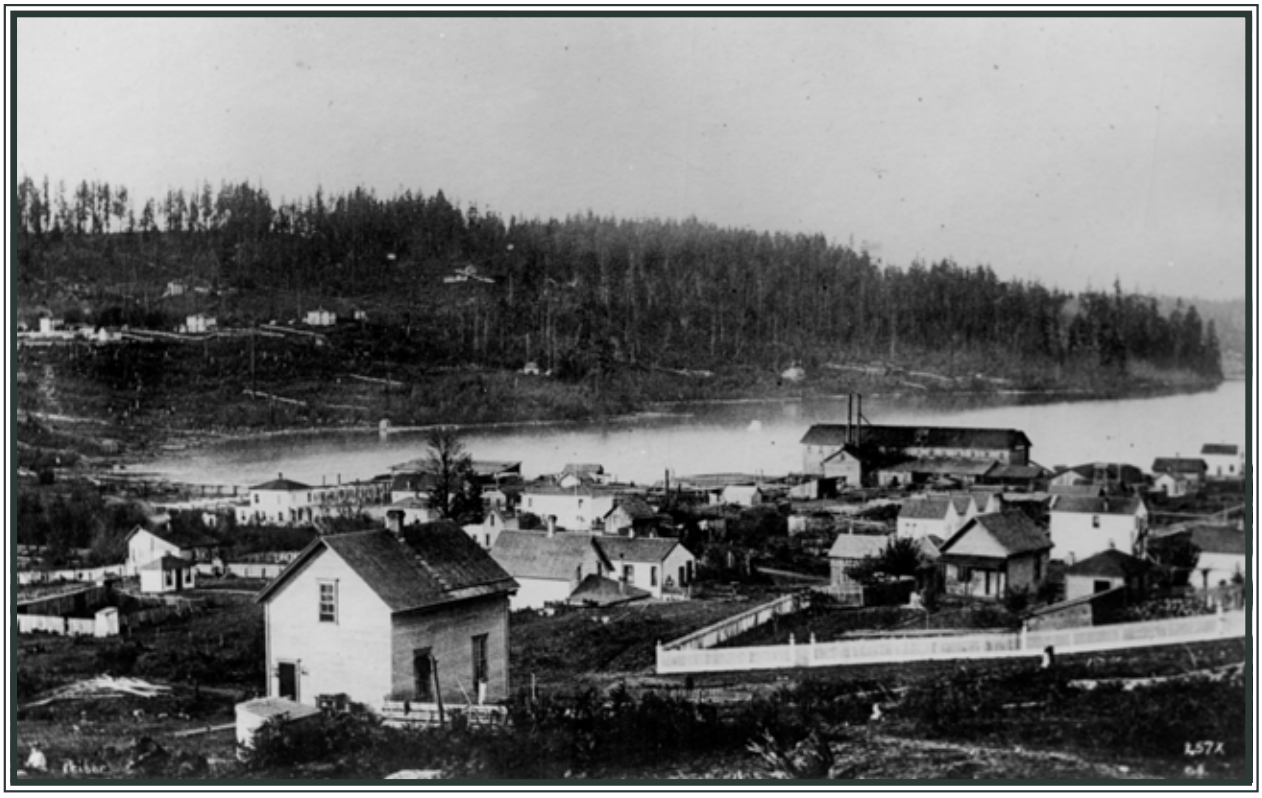
[58] U. S. Fish & Wildlife, "History of Quilcene NFH," Quilcene National Fish Hatchery, last modified March 25, 2011 accessed April 14, 2011, http://www.fws.gov/quilcenenfh/History.htm.

[59] Conrad Mahnken and Timothy Joyner, "Part III: Developing a Coastal Fishery for Pacific Salmon," *Marine Fisheries Review*, vol. 35, number 10 (October 1973).

[60] Chasan, 127-128.

Physical examples of fishery restoration efforts are perhaps best seen through the various fish hatcheries throughout this region. National Fish Hatcheries, which represent partnerships between federal, state, and tribal governments, are open to visitors at least seasonally and offer either guided tours and/or exhibits in visitor centers. The **Quinault National Fish Hatchery** is located near Humptulips on the Olympic Peninsula coast, on the Quinault Indian Reservation, and raises several types of salmon, as well as steelhead trout. There is also the **Makah National Fish Hatchery** near Neah Bay and the **Quilcene National Fish Hatchery** along Hood Canal, along with many state, private, and non-profit hatcheries. Public accessibility opportunities and the types of fish raised vary by facility and should be investigated in advance of visiting.

COMMUNITIES SHAPED BY WATER



Circa 1860-1920 view of Western Mill in Seattle. Image courtesy of the Washington State Library.

Maritime communities provide a strong physical and social link with past and present maritime activities. Their locations, orientation, layout and ongoing traditional activities provide an ongoing interpretive experience. Nearly two centuries of Euro-American activities along the Salish Sea and Pacific Ocean gave rise to a multitude of unique communities. Part of understanding them involves not only appreciation for their role in maritime activities but also their regional importance and mutual interdependence.

Within the maritime context, there are generally three types of communities. The dominant type, export, grew up around the export of a natural resource, most often timber. Their existence depended upon the continuation of this activity. Some diversified and survived the decline of their original primary export, many did not. Trade communities served as intermediary points often at geographic midpoints. They provided supplies to export communities and were often a central distribution point for imported, processed materials.

2010 view of the working Julie Anne at Gig Harbor. Image source Artifacts Consulting, Inc.

The third type of community, the colony, emerged near the end of the 19th century. Defined by a shared set of social values and closed to those outside the group, they settled near Salish Sea waterways for access and as an alternative to railroads, which colonists thought embodied the antithesis to their values.

Historic Waterfront Industry

The principle maritime export communities all specialized in timber, fishing, or mineral extraction and processing, and waterfront industrial facilities were built to process these natural resources. Some communities, such as Port Gamble and Roche Harbor, focused exclusively on an individual resource while others incorporated trade as well.

Export Types

Timber has come to shape the identity of the region as a whole, and the seed of that began in the region's earliest logging operations and communities, which were mostly located along the waterways. Timber communities also had some of the only

Euro-American activity during the mid- to late 1800s. Stories, tied to the processes and characters of this time, provide an important regional heritage. Social movements, sprouted by workers and labor conditions, helped shape the region's political identity. The timber industry provided employment for a range of immigrants and the foundation for subsequent communities, while the processing facilities are closely linked with the built environment heritage of the Salish Sea. Most buildings built in the Northwest during the last two centuries were constructed of timber that came from the region, which was also in demand for construction along the Pacific Coast and internationally. These same yards kept a furious pace during the world wars as well, supplying aviation and naval building industry needs.

Late 1880s to early 1910s view of the Central Hotel in Coupeville. Coupeville (**http://www.cometocoupeville.com/**), located on Whidbey Island within the Ebey's Landing National Historical Reserve (**http://www.nps.gov/ebla/index.htm**) the first historical reserve created in the U.S. to protect rural working landscape and the associated communities. Image courtesy of State Library Photograph Collection, 1851-1990, Washington State Archives, Digital Archives, **http://www.digitalarchives.wa.gov**.

Timber-based export communities ranged in size from small camps to full cities. Water-based access provided supplies, communication, and the ability to ship raw materials. Many began as small camps focused solely upon resource extraction, transferring their cargo via water to other sites for processing. By 1876 there were nearly 50 logging camps along Hood Canal.[1] Tents and transitory structures, often on skids, defined them; small rafts were anchored in the water for mail and steamship connections. Most of these camps disappeared with time due to their fragility, and as operations moved further inland to chase receding resources.

Logs from these small camps were brought out to the larger mills, such as Port Gamble, Port Ludlow and Seabeck along the canal. These processing centers often started along spits and sheltered areas with deep water anchorage for sailing ships and a ready supply of timber. Vast stands of pilings, supporting piers for loading sailing vessels, along with wood-framed mill structures, dominated the shorelines. As these mills grew, both the processing infrastructure as well as residential, social and related commercial structures evolved to support the growing labor force. Changes in transportation by the late 1910s to 1920s often introduced railroad spurs (for loading and unloading rail cars) and loading facilities for barges. Some of these communities, such as Port Gamble, sustained this role into the 20th century; most diversified to land-based commercial activities.

[1] Helen McReavy Andersen, *How When and Where on Hood Canal* (Everett: Puget Press, Inc., 1960), 30.

Fishing-based export communities ranged from small communities sporadically or seasonally fishing to supplement other income sources, to communities with commercial fishing operations and extensive waterfront development surrounding it, such as Gig Harbor. Facilities drew their character from the type and scale of fishing operations they contained, as well as traditional practices. For example, Gig Harbor's Serbian and Croatian community developed residences along the harbor with backyards leading to the family's net shed, a carriage for hull cleaning, and deep water pilings for mooring their fishing boats. Near Olympia, shellfish harvesting operations emerged around broad expanses of tidal lands with their own distinct set of land and overwater facilities. Commercial canning facilities, such as those at Anacortes, developed along the waterfront in proximity to shipping facilities and often featured a pier for mooring ships and boats and receiving the catch, along with a wood-frame processing structure built out over pilings or partially on land.

1860-1881 view of La Conner's waterfront. In the foreground is the partially submerged steamboat *Idaho*. La Conner (**http://www.townofLaConner.org/**) is located along the Swinomish Channel. The **La Conner historic downtown** provides an excellent example of a distribution community along the moving agricultural goods out for sale along the channel. Image courtesy of the State Library Photograph Collection, 1851-1990, **Washington State Archives, Digital Archives**.

Whatever the type of facility, they all shared a strong visual presence along the waterline, communicating their influence in shaping the community on the land that stretched behind them. Fishing, as much as timber, has come to shape the identity of the region as a whole, with those early villages and centers of activity anchoring the present to past practices and traditions. Immigrants often brought with them specialized skills and more waves of immigrants who scouted the best locations and formed prominent communities, many of which remain today. These communities directly influenced many of the current laws and environmental practices that affect tideland ownership and water quality. Their facilities, in particular wooden fishing boats, continue as a source of regional identity in their conversions to recreational and other uses when they are retired from fishing. Recreational fishing has become one of the region's principal current industries as the region became an international center for commercial fishing activities.

Mineral extraction-based export communities are rare along Northwest waterways, as most minerals were extracted further inland and transported, often via railways, to the waterways for shipping. However, several notable examples of mineral operations along the waterways include lime mining at Roche Harbor on San Juan

Intact lime kiln at Roche Harbor on San Juan Island. Image courtesy Artifacts Consulting, Inc., 2010.

Island and sandstone extraction from the Chuckanut Quarry near Bellingham. Gravel was another important resource extracted near waterways and moved around the region on barges, such as gravel quarried near Steilacoom used in building areaways and sidewalks throughout Port Townsend's commercial district in the 1910s.

The heavy weight of all of these materials made shipping by water critical to their success, particularly before a railway network existed as an alternative. Visually, loading and processing facilities, along with changes to the natural landscape from mining, were the waterfront hallmarks of this industry. Mineral extraction connected the region to the building industry, which used these materials in structures along the entire Pacific Coast. The buildings in Bellingham, built using Chukanut sandstone from the local quarry, provide a visible remaining link to that history today.

Distribution and Manufacturing

Distribution communities developed in proximity to trade routes and a location central to the export communities they served, and as they grew, they often expanded to include manufacturing.

Location was crucial to distribution communities' success. From Seattle, for example, ships could be dispatched to quickly reach locations both north and south along the Salish Sea. As ship sizes increased, deep water ports became essential. The role of early distribution centers like Olympia gradually diminished due to harbor depths and the travel distance from north sound communities and the Pacific Ocean.

Smaller distribution communities, including La Conner and Coupeville, maintained a modest size proportionate to the rural inland resources they provided an outlet for. These communities developed extensive waterfront piers and warehouses for temporary goods storage prior to shipping and distribution and served, as with the Swinomish Channel, as a route for towing logs harvested inland. As larger port cities, such as Tacoma and Everett, linked to the expanding inland network of railways their role broadened to help move goods from Asia to the U.S. Midwest and East Coast. Export communities increasingly began to send their resources to distribution points by rail instead of ships.

Distribution communities typically oriented their warehouse district along the waterfront, with commercial and financial districts behind and residential neighborhoods on the hills overlooking these activities. The bustling shipping activity, which also included passenger ferries defined these busy harbors. Traditional cargo handling methods gave way to modern techniques, outlining the waterline of these communities with tall cranes for container loading. Distribution communities, such as Steilacoom and Olympia, as well as smaller examples like Union City supplying logging camps along Hood Canal, were some of the first established in the region and provide ties back to both the Hudson Bay Company and territorial development periods.

Manufacturing communities also arose from industrial growth and often comprised an important adjunct function to distribution. They produced finished items for local, regional, or international consumption. Industrial complexes developed along, or in close proximity to, the waterfronts, as they relied upon waterways as a means of product distribution before transcontinental railway links came into play. Afterwards, the waterways continued to be important to supply and distribution. Tacoma's smelter, built in 1889, provided a visual landmark for maritime navigation that was visible for miles.

The stark differences between community types began to blur over time, however; diversification became important to community survival.

View of the Eddon Boatyard. Gig Harbor's working waterfront provides an unparalleled experience of a working boat yard and fishing waterfront community. The **Eddon Boatyard** can be toured. The **Harbor History Museum** contains vessels and exhibits related to the city's maritime history. Image courtesy Artifacts Consulting, Inc.

Living on Land, Working the Sea

The indomitable emotional and physical connection those who have spent their lives working along or upon the sea have to its waters defines maritime communities. Land dwellers romanticized life on the open water, and the layout of residential neighborhoods reflected that sentimentality. Built out upon the bluffs and hills overlooking the sea, homes maintained a visual connection to the sea and maritime activities, often featuring elaborate architectural details like widow walks. These neighborhoods were often home to ship captains, prominent business and political persons having maritime associations, and shipyard and dock workers, and became important places of stored memory and maritime tradition.

The rhythm of residences along the shore and hillsides greeted mariners returning or newly arriving to port. They conveyed community, stability and a civic base, hallmarks of an established city that could attract industry and growth. Today, we can look at the various parts of these communities—plats, residences, commercial establishments, and community facilities—in order to pull together a full picture of how they functioned.

1922 view of Port Townsend, taken by Elite Studios, illustrating the community's orientation to the waterfront. Image courtesy of the Washington State Library.

Town plat orientation communicates volumes about a town's historic relationship to the sea—a plat set parallel to the waterway indicates a strong marine-based focus, as in Bellingham and Seattle, whose street grids shift as you drive around their respective bays. Grids shifted to keep lots squared to the water, and streets led from the waterfront into the community while intersecting roads ran along the bay. This placement facilitated the flow of goods to and from the waterfront and city.

The location of functionally grouped buildings, such as commercial facilities or residences, also depended on topography. Port Townsend is a great example of this: commercial and some community facilities were gathered along the lower land areas, in closer proximity to the waterfront, while residences and most community facilities (such as churches and public libraries) were located up on the hill overlooking the bay, elevating the families from a historically rougher area of town. Likewise the customs house started in a building along the waterfront and moved up in the 1890s to a stone building with a commanding position on the bluff overlooking the harbor.

Maritime communities also commonly began to expand by plat out over the tide flats. In Bellingham, extensive platting of the tidelands was a speculative response to the 1858 Fraser River Gold Rush. Other communities such as Port Angeles, Port Townsend, and Seattle all extended their town plats over the tide flats. Initially, this construction required piling-supported walk and roadways; around the turn of the century, developers began to use in-fill, providing increased area for commercial and industrial development. To make this work, cities often had to elevate the street grade to the point of burying the first story of buildings; this tide flat development resulted in the creation of extensive areaway systems in towns including Port Townsend, Port Angeles and Seattle.

Residences generally followed prevailing styles of the time, though often with unique ship or maritime-influenced detailing, such as widow walks or flag poles in the yard for ship's captains, and occasionally boat-building designs and materials on the interiors. Nearby shipyards and a wealth of available skilled builders benefited home construction. The main significance for these residences today is direct association with persons historically involved in maritime-related activities (both sea and land based).

1936 view along Pike Place in the market. Image courtesy of the Seattle Municipal Archives Photograph Collection. **Pike Place Market** exemplifies a commercial center relying upon goods brought in by ship and rail for sale. The route along Western Avenue providing a link up the steep hill remains intact today maintaining the waterfront link.

Commercial establishments both sold materials brought in through maritime trade or harvested from the sea, as well as supplying mariners. These businesses included fish retail and wholesale companies, ship chandleries (dealing in specialized supplies), sail makers, bazaars, restaurants and bars, and inns and hotels. They provided an important conduit for products entering the community as well as an important point of connection between people involved in maritime-related trade and commerce as well as being places the maritime community depended on for news about sailings, work and business. Often these were located near city wharves and main thoroughfares leading into or along the waterfront. The **Pike Place Marke**t in Seattle provides an exceptional, and still strong, example of a market center that combines received goods from the waterfront with retail outlets for the public. Visitors can still stroll the Market as well as the path that goods took up from the waterfront along Western Avenue down to the waterfront.

Community facilities provided social and civic centers for maritime activities, such as union halls serving longshoremen and seamen. These groups provided important labor and social centers within communities and exerted a strong influence on the labor, social and political climate in Washington State. In 1919, a general strike in Seattle drew other unions in support of the shipbuilder's union and brought significant change, as unions learned they could peacefully bring a city's economy to a halt and cities learned they could break this hold with an uncompromising show of force and willingness to violently break the strike if needed.[2]

[2] Daniel Jack Chasan, *The Water Link: A History of Puget Sound as a Resource* (Seattle, WA: Washington Sea Grant Program, University of Washington, 1981). 51.

Colonies

A brief emergence of colonies along the Salish Sea marked an unusual period of social change in the region's history and pre-dated most of the labor movements of the 1900s. National social movements were looking to establish model communities that they hoped would eventually lead to larger social reform. During the late 1800s, leaders began scouting locations along the Salish Sea, drawn to the navigability of the its many waterways as a means for trade that avoided the railroad systems. The major communities to emerge were Puget Sound Cooperative Colony, Freeland, Equality Colony, Burley and Home.

View from Home, looking across Von Geldern Cove. Image courtesy of Artifacts Consulting, Inc., 2009.

The Puget Sound Cooperative Colony, started in Port Angeles in 1887, marked the state's first communitarian experiment and the beginnings of the East End of Port Angeles. The community lasted only a brief period and was on the decline by the late 1890s, extinct by 1904.[3]

The socialist Equality Colony was established by the Brotherhood of the Co-Operative Commonwealth at Blanchard (Samish Bay, near Edison) in the 1890s. In spite of the Brotherhood's goals to colonize a western state, by the early 1900s the colony was on the decline.[4]

Freeland arose in the 1890s, founded by former Equality Colony members dissatisfied with the direction of that colony and following the Rochdale plan (of Rochdale, England). Located on Holmes Harbor, Whidbey Island, they described themselves as a "gathering of like-minded radicals who sought to retain a socialist entity outside the confines of a regimented communal existence."[5] Members owned their own boats, which they used to move their commerce to Everett and other nearby communities for sale. The colony platted the townsite in 1900.[6]

Burley Colony started on Henderson Bay in Pierce County in the late 1890s. Colony founders were socialists from the east coast.

---

[3] Charles Pierce LeWarne, *Utopies on Puget Sound 1885-1915* (Seattle, WA: University of Washington Press, 1975), 15-53.

[4] LeWarne, *Utopies on Puget Sound* 1885-1915, 55-113.

[5] LeWarne, 127.

[6] LeWarne, 114-127.

Home started on the Puget Sound in Pierce County in the late 1890s by three families relocating from a former communitarian (communistic) settlement. The families formed the Mutual Home Association to hold common title to the land, from which members received an allocation to farm and develop. Before dissolving in 1919 the community became a center for visits by such notable social radicals as Emma Goldman, William Z. Foster, and "Big Bill" Haywood.

Colonies provide an important thread in the state's social history narrative. They illustrate both a conviction of beliefs and a counter to the nation's fast-moving capitalism and industrialization.

PORT GAMBLE

Port Gamble National Historic Landmark District resides along State Route 104 on the Kitsap Peninsula. Many of the original town site buildings remain in use allowing visitors to experience the community. The general store serves food and the museum provides a wonderful glimpse back through the community's history.

Community Profiles

Each of the 13 counties within the maritime survey area includes a unique group of communities. The character of these communities varies slightly from county to county based on geographic location, settlement patterns, and the natural resources of that county. Looking at these communities from a marine perspective helps to highlight the uses and character that set them apart from their landlocked cousins. An exhaustive analysis of all maritime communities within each county is beyond the scope of this project, as many counties had upwards of 40 small communities along their tidal shorelines. Often these were just small villages a few miles from one another with their own post office and steamer connections.

Human activities have such a profound impact on shorelines that it is important to have a sense of how much has changed even within just the last 150 years. Many of these communities no longer exist—they've been absorbed into a larger city or they simply faded away as economic situations changed.

There are many former and current maritime communities that could not be included, but ongoing efforts should continue to expand this list and detail the narrative associated with each community. Some continue their strong maritime functions from their inception through the present day while others had short maritime lives before shifting to other roles or disappearing altogether.

Steamships provided regular transportation between communities and to other points within the Salish Sea. By the 1910s steamers made regular weekly, and quite a few tri-weekly, calls. By the 1920s larger commerce centers such as Port Orchard, Port Townsend and Everett had sailings several times a day. Even the light house at Tatoosh had boat service to Neah Bay three times a week. For counties such as Kitsap and Island, transportation was almost entirely by water, and many port villages

and cities also provided links to inland centers. A stage line ran from Port Williams, at the entrance to Sequim Bay, in to Sequim.

In a region dependent upon water transportation, boat builders served a critical function, both building new and repairing old vessels. By the 1910s they had established their boat yards at small isolated cities such as Pysht, on Butler Cove on the Olympic Peninsula, and all the major ports, such as Seattle, Tacoma, Bellingham and Everett.

Former chandlery in Semiahmoo. Image courtesy of Artifacts Consulting, Inc., 2011.

Ship chandlers supplied local ships and those coming in for trade. The chandlery specialized in provisioning commercial ships. They could quickly supply the goods needed in the short time a ship might be in at port. They were central to waterfront port activities. Chandlers were located in major port centers having a regular traffic of larger commercial vessels and fishing fleets.

Canneries in the region proliferated along the northern extents of the Salish Sea benefiting from its rich waters. The San Juan Fish Company operated a cannery at Clallam during the 1910s; Neah Bay featured canneries operated by the Anacortes Fisheries Company and Booth Fisheries through the 1920s; and The Bugge Canning Company operated a cannery near Sequim on Washington Harbor at Sequim Bay during the 1920s. Several canneries operated at Port Angeles, including the Angeles Packing Company, Union Fisherman's Fishing & Packing Company (on Ediz Hook) and the Manhattan Canning Company (1.5 miles west of the downtown). Hall Brothers Company at Dungeness and E. H. Prickett in Port Angeles, along with fishing operations from Dungeness, provided fresh fish and oysters. A multitude of canneries operated in Whatcom County, taking advantage of salmon runs into the Salish Sea. The Carlisle Packing Company, Lummi Bay Packing Company, Beach Packing Company, and Nooksack Packing Company all operated at Beach. Blaine's sheltered harbor off Boundary Bay provided operating space for the Ainsworth & Dunn and Alaska Packer's Association canneries. The Alaska Packer's Association also operated a cannery nearby at Point Roberts by the 1930s.

The lumber industry took advantage of harbors' proximity to inland timber stands. Inland agricultural operations utilized the ports to ship to larger markets. Poultry farms ran near Gettysburg and Port Crescent, which also had dairy farms, and creameries operated at Blyn on Sequim Bay and Dungeness (Glendale Creamery). Towing lumber brought down the Skagit River was another important revenue

source, creating companies like Dunlap Towing in La Conner, which has been working since the 1920s.

When the 11-mile Swinomish Channel was dredged from 1892 through 1937, it provided an important link between Saratoga Passage and Padilla Bay, enabling tugs, fishing boats and recreation craft to travel north along the more sheltered passages of the east side of Whidbey Island rather than out past Port Townsend and up the less protected waters west of Whidbey Island.

Circa 1960 view of fishing vessels and sailboats in a harbor, most likely in Aberdeen, taken by Dell Mulkey. Image courtesy of Washington Digital Archives.

U.S. Weather Bureau stations operated at Pysht and Port Crescent with telegraph connection to Port Angeles.[7] The stations collected meteorological data and served as an early warning system to notify points inland by telegraph of approaching severe storms.

Mail service linked remote communities with the metropolitan centers. Mail arrived daily to post offices in communities throughout the Salish Sea for local residents and distribution to inland communities.

Aberdeen

In 1867 Samuel Benn established a land claim along the bay at the juncture of the Chehalis and Wishkah rivers, roughly the site of present-day Hoquiam. In 1878 George Hume built the small Aberdeen Packing Plant, a fish cannery at Sam Benn's Point. It was just the beginning of an important industry for the area. 1911 saw the addition of a clam cannery, and several packers operated within the city, including: Grays Harbor Packing Co., Pacific Fisheries & Packing Co., Sea Beach Packing Works, Inc. Retail fish markets such as Wishkah Fish Co. also flourished. Several oyster growers also operated along the harbor, the majority of them grouped along the waterfront near the Wishkah River, with the exception of the Grays Harbor Oyster Co., which operated in Aberdeen. During WWII the oyster industry experienced a setback, but has been recovering over the past several decades.

Shipbuilding provided an important early industry that remained strong through war times—during both World Wars several shipyards operated to meet war time demand, with the city's lumberyards providing the raw materials. The Olympic Peninsula provided an unparalleled supply of lumber. The first recorded hull launch from an Aberdeen shipyard occurred in 1899, and by 1900 two shipyards operated

[7] The Weather Bureau was started in 1870.

out of the city.[8] By 1911 the Chris Endresen Company and the Lindstrom Ship Building Company both operated at the foot of South Washington Street. The area also had a ship chandlery, the Grays Harbor Supply Company. The state's flagship, the *Lady Washington*, was built in Aberdeen, a reproduction of the ship Captain Robert Gray sailed when he discovered **Grays Harbor**.

Image of a marina in Everett. Image courtesy of Artifacts Consulting, Inc., 2011.

The lumber industry was the city's economic backbone, supporting a multitude of smaller industries. By 1879 raw timbers were being loaded for trade on the schooner *Kate* and *Ann*, and settlements were started along the Columbia River. Within five years the harbor had its first saw mill and a platted town site. A newspaper (the Aberdeen Herald), telegraph line and railway links soon followed. Local citizens pooled resources to construct a railway spur from the city to the Northern Pacific Rail Road terminus at Ocosta in 1895.

By 1900 the city became the mill and commercial center for southwestern Washington. Aberdeen operated six sawmills, two shingle mills, a cooperage mill, a woodworking and box factory, a foundry, ice factory, a cigar factory, soda works and two steam laundries. Regular steamship routes within the harbor to neighboring cities and servicing the river valleys[9] facilitated the transport of raw materials, goods and workers. Following a devastating fire in 1903 the city dredged the harbor and infill and developed onto the marshes and tidelands. The current underlying state aquatic land ownership extends well inland along the harbor and provides some indication of the extent of the city's industrial waterfront expansion.

In less than a decade, the city had rebounded and grew. The 1911 Polk City directory recorded 15 mills, three foundries, two cooperate companies, four furniture and woodenware manufacturers, a trunk and case factory, and glazed cement pipe works.[10] During the 1920s several plywood, pulp and paper plants were built to take advantage of the harbor location and raw materials produced by the lumber yards. Following the post WWII housing boom Aberdeen operated two Douglas fir plywood plants, one of which ranked as one of the state's largest. These included the Grays Harbor Pulp & Paper Company Plant, Polson Lumber and Shingle Mills, and the Harbor Plywood Plant.[11] Labor unrest emerged from this concentration of industry during the 1930s and 1940s, marking an important period in social history.

[8] R. A. Polk, *Polk Directory*, Grays Harbor. Polk, 1900.

[9] Polk, *Polk Directory*, Grays Harbor,1900.

[10] Polk, *Polk Directory*, Grays Harbor, 1911.

[11] Writers' Program of the Work Project Administration in the State of Washington, *Washington: A Guide to the Evergreen State* (Portland: Binford & Mort, 1941, revised 1950), 167-172.

These industries shaped not only the physical profile of the city's waterfront, but also the character and traditions of its citizens. No small amount of pride is attached to being the home port for the state's flagship, and logging trucks still roll down out of the mountains along the city's main streets.

Everett

Everett is located on what is effectively a peninsula created by the Snohomish River running parallel to the bay before entering Port Gardner. As the first point where the Great Northern railroad reaches salt water, and with a branch line to the Northern Pacific, Everett grew quickly as a major shipping and transfer point. Goods arriving from East Asia, the Philippines, Australia, Hawaii, and South America were loaded on trains for Midwest and East Coast destinations. Industry expanded along the waterfront, taking advantage of great shipping and rail connections. By 1904 the city boasted 10 saw mills, a paper mill, 12 shingle mills—the Clough-Hartley mill in particular would grow over the next decade to become one of the world's largest—2 flour mills, a smelter, one of the nation's only arsenic plants, a creosoting works, iron works and four foundries, as well as breweries and bottling works, creameries, and ice and cold storage plants for shipping perishable items.

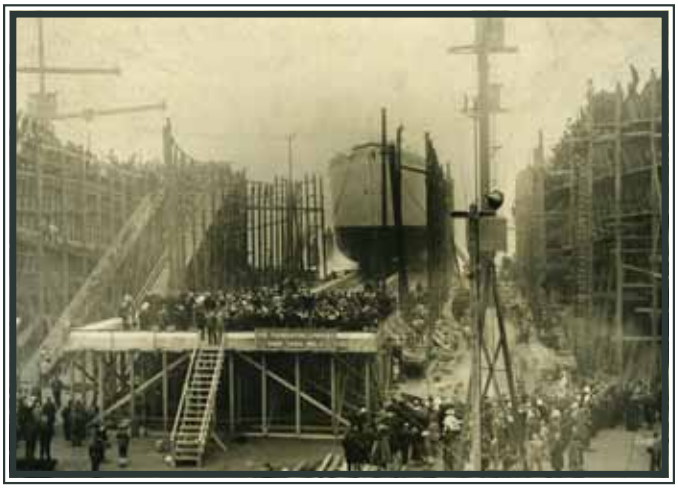
Fishing has long been an important part of Everett's maritime history and economy. Proximity to good fishing grounds, coupled with a sheltered harbor, provided secure moorage facilities and sheds for repairing and storing nets and fishing gear. Fish and oyster markets operated along Hewitt Avenue, just uphill from the harbor.

Several steamship companies, including the Pacific Steamship Co., Alaska Pacific Co. made regular stops at Everett, helping to expand the city's role as a wholesale and distribution center. Supporting this maritime commerce was a large steel shipbuilding plant and several boat yards, including Ole A. Pederson, Bayside Boat Works, and Everett Marine Ways Inc. The Bayside Hardware Company served as a ship chandler, supplying commercial vessels that stopped at Everett. By the 1950s the port could receive nine oceangoing vessels and ranked second in the state in shipping tonnage handled.[12]

Tacoma

Commencement Bay's sheltered, deep water anchorage contributed to the growth of Tacoma's maritime role as a major shipping and distribution center. In 1873 the Northern Pacific railroad's transcontinental line reached salt water at Tacoma. This prompted a wave of commercial and industrial growth along the city's waterfront. Warehouses along the Foss Waterway provided transition space between rail cars and ships for goods arriving and departing from Tacoma. An 1878 spur

[12] Writers' Program of the Work Project Administration in the State of Washington, *Washington: A Guide to the Evergreen State*, 186-197.



1918 image of the *Gerberville*, the first vessel launched by the Foundation Company of Tacoma. Image courtesy of Washington Digital Archives.

line that connected Tacoma to the Wilkeson Coal Mines sparked the construction of huge coal bunkers along the waterfront. Tacoma became one of the region's most important coaling stations for steamships operating along the Salish Sea until oil came along to replace coal. In addition, flour mills, canneries and machine shops all developed along the waterfront. Completion of the Stampede Pass tunnel in 1886 shortened the transcontinental railroad, increasing Tacoma's role as a distribution point both for outbound wheat shipments from eastern Washington as well as imported goods destined for the Midwest and East Coast.

Infill of the tideflats significantly expanded the city's industrial waterfront. The former Puyallup River delta became a series of dredged waterways, including the Hylebos, Milwaukee, Foss, Middle, and Sitcum. Specialty trades that catered to maritime shipping operations developed along the waterfront. Brass foundries supplying boat yards included Atlas Foundry Co. and Gawley Foundry & Machine Works.[13] Sail maker I. M. Larsen operated his business nearby.

During World Wars I and II, shipbuilding along the waterfront expanded dramatically. Over the course of WWII the Seattle-Tacoma Shipbuilding Company built eight of the smaller aircraft carriers. Following WWII, industrial lands built over the former tideflats encompassed more than 300 acres.[14] Steamship lines provided regular connections with Florida and Puerto Rico, as well as to South America, Hawaii, New Zealand, Asia, and United Kingdom, and the Mediterranean. By 1967 more than 55 steamship lines utilized the port's deep-water facilities.[15]

Bellingham

Bellingham served as a major industrial, education and distribution center for Northwest Washington. Visited in the 1790s by both Francisco Eliza and Captain George Vancouver, the name Bellingham Bay, assigned by Vancouver in honor of Sir William Bellingham, stuck. By 1852 the Roeder Saw Mill, along Whatcom Creek, was turning out lumber that was used to construct Fort Bellingham. In 1854 Captain Henry Roeder built the H. C. Page, a small schooner, for shipping local materials, including coal, to markets. The 1857 River Gold Rush brought speculation and more development. The mud tideflats were gradually platted, and by the early 1900s, developers began to infill the mudflat streets and dredge the Whatcom Waterway. By the 1890s

[13] R. A. Polk, *Polk City Directory*, Thurston County (Polk: 1902-03).

[14] Writers' Program of the Work Project Administration in the State of Washington , 267-277.

[15] Bruce Le Roy, ed. *Historic Ports of Puget Sound* (Tacoma, WA: Washington State Historical Society, 1967), 5.

salmon canneries abounded, including the Pacific American Fisheries Cannery, one of the largest operations in the world.

The small villages of New Whatcom, Sehome and Fairhaven united in the early 1900s to become Bellingham. Several boat builders operated in the city, including H. B. Kirby, Bellingham Marine Railway & Boat Building, and Westlake & Son. Morse Hardware Company and Northwest Hardware Company both served as ship chandlers.

View from Zuanich Park in Bellingham. Image courtesy of Artifacts Consulting, Inc., 2011.

Dock and wharf construction expanded with packing plants, saw and shingle mills, plywood, an industrial alcohol plant, and the largest sulfite pulp mill in the U.S. Shipyard construction during WWII produced auxiliary naval craft and cargo boats. The municipal dock at the head of the Whatcom Waterway provided an iconic point of arrival and departure for passenger ferries. Several steamship lines served the community, including the Pacific Steamship Lines and Puget Sound Freight Lines.

Olympia

Olympia became the first port of entry for the Salish Sea in 1851 when Congress authorized the first customs house. By the late 1850s the revenue cutter *Joe Lane* was stationed in the harbor, and by the 1860s steamboat service from Olympia to ports around the Sound had increased in regularity and frequency. The steep shores and broad mudflats of south Puget Sound inlets, including Budd Inlet, where Olympia sits, were not ideal for shipping, but they were excellent for oyster cultivation.[16] By the early 1900s several seafood and oyster companies operated out of Olympia, including J. J. Brenner Oyster Co., one of the oldest in the city and still in business, Capital City Oyster Co., Giles A. W. & Sons, Olympia Packing Co., and the Puget Sound Sea Food Co.; most of these operated from the east shore of West Bay, just below what is known today as Capitol Lake. There still remains an important seafood presence in this area, such as the extant Olympia Seafood near Percival Landing Park.[17] The city also supported several boat builders, including Eugene Monroe, P. E. Jones and J. A. Dofflemyrn.[18] By the 1930s these included Harry S. N. Ikerd , H. A. Long Boat Co., Olympia Boat Works and Joseph C. Ritner.[19] Most of these operated along West Bay, except for Ritner, who kept his yard on the east shore of the East Bay along what

[16] Chasan, 11-12.
[17] Polk, *Polk City Directory*, Thurston County.
[18] Polk, *Polk City Directory*, Thurston County.
[19] Polk, *Polk City Directory* (Olympia, WA: Polk, 1930-31).

View of Olympia waterfront with the Washington State Legislative Building in the background. Image courtesy of Artifacts Consulting, Inc., 2011.

is today East Bay Drive NE. It was not until 1922 that the port of Olympia was officially established. By 1926 the port annually received between 100 and 200 vessels and grew to include a cold storage plant and warehouse and transit sheds.

Hoquiam

Older than Aberdeen but originally located just four miles away, over the years it grew together with Aberdeen into a single industrial and commercial center. Myrtle Street serves as the divider between the two cities. The lumber industry shaped the waterfront and spurred many ancillary industries and commercial enterprises. Hoquiam is defined by the sheltered deep water harbor into which the Chehalis, Wishkah and Hoquiam rivers flow. The fishing industry operated in the Pacific and harvested shellfish from the bay. Industrial development and railroad connections arrived with the growth of the lumber industry. Smaller maritime-related industries moved up along the rivers and the dredging of the harbor and tide flat infill solidified the link between ocean-going trade and the city's industries. Residential communities developed along the hills overlooking the city, with worker cottages along the base of the hills near the industrial centers. Industrial facilities along the harbor and up the river banks remain, many converted to adaptive uses.

Captain Robert Gray's entry into Grays Harbor aboard the Columbia in 1792 helped establish the U.S. presence and claim to the Oregon Territory, as well as providing the harbor name. It would be nearly seven decades before Euro-American settlers would began establishing claims along the harbor. Some of the first were James Karr and his family, along with the Campbells and others. By 1885 a town site was platted with streets commencing at the river and continuing up Campbell Hill.[20]

Fishing was an important early industry. Fishermen harvested salmon, oysters, clams and Dungeness crabs from the harbor.[21] By 1911 downtown retail fish outlets included the Atlas Fish Company and the McLane Fish Company. Shipsmiths repaired vessels at the Hoquiam Machine Works.

As with Aberdeen, the lumber industry in Hoquiam was an economic mainstay. By 1900 the Northwestern Lumber Company would become of the largest plants on the West Coast. The mill supplied lumber to a shipyard and four woodworking and box factories.[22] Northern Pacific Railway Company had five trains arriving and de-

[20] Writers' Program of the Work Project Administration in the State of Washington, 167-172.
[21] Polk, *Polk Directory, Grays Harbor* (Polk, 1911).
[22] Polk, *Polk Directory, Grays Harbor* (Polk, 1900).

parting daily by 1911 and they entered along the right of way owned by the railroad (currently State Route 101) over the steel bridge at Simpson Avenue. The city also boasted five shingle mills by this time; Polk City directories report that one of these had the highest production volume worldwide. Also in operation were five saw mills, a wood pulp plant, veneer plant, piano sounding board plant, two sash and door factories, two box factories, several foundries, a shipyard and a concrete plant.[23]

Image of the Hoquiam waterfront. Image courtesy of Artifacts Consulting, Inc., 2011.

Gig Harbor

Gig Harbor developed around fishing and lumber. By the 1880s a saw mill was set up along the waterfront, and the city grew as the home port to large purse seiners following fish runs between Mexico and the Arctic. The harbor provided an important anchorage center for boat building and fishing net storage facilities. By the 1910s, regular steamer travel entered the bay, providing a connection with markets in Tacoma. A logging railroad and stage line connection with Burley also connected to the bay.

Port Angeles

Located just 17 miles across the Strait from Victoria B.C., Port Angeles boasted a deep water harbor close to the Pacific Ocean sheltered by the natural seawall of Ediz Hook.[24] Port Angeles served briefly as the port of entry for ships entering the Salish Sea from the Pacific Ocean and Washington's first modern communitarian experiment.

Ediz Hook formed a natural seawall that provided ships refuge from storms. In 1862 the official port of entry transferred briefly to Port Angeles before reverting back to Port Townsend in 1865. Following the loss of the customs house, the city's growth declined markedly until the 1880s. The Puget Sound Cooperative Colony formed in 1887 in response to labor unrest in communities along the Salish Sea. Community members rode the steamer *Dispatch*, on its run between Seattle and Neah Bay, for a week-long trip that brought community members to the East End. Prior to road construction, a trail along the beach linked the city's East and West ends. By 1887 the colony built a wharf and established a saw mill and kiln nearby. Colonists used local clay and sand to make the bricks. The colony built its own steamer, the *Angeles*, in 1889.

[23] Polk, *Polk Directory, Grays Harbor* (Polk, 1911).
[24] Le Roy, *Historic Ports of Puget Sound,* 12.

Circa 1950 aerial photograph of Port Angeles and Ediz Hook. Image courtesy of Washington State Digital Archives.

As the city grew, the A. B. Mitchell boat works was established on Oak between Front and 1st. By the 1920s several fish canners operated in the city, including the Angeles Packing Company, Union Fisherman's Fishing & Packing Company (Ediz Hook)

Port Townsend

Known as the Key City of Puget Sound, Port Townsend was named in honor of Marquis of Townshend by Captain George Vancouver in 1792. The city developed as an early point of lumber shipping to San Francisco and became the headquarters for the U. S. Customs Service once it was transferred from Olympia. By the 1910s the city also boasted the headquarters for the marine hospital service on the Salish Sea as well as a quarantine service and a deepwater harbor.

The maritime trade supported a shipwright and ship chandlers. Chandlers included ship chandlers Jones & Crouten and the Olympic Hardware Company. Several steamship lines including Alaska Pacific Steamship Company, Alaska Steamship Company, Dodwell & Company, Hastings Steamboat Company, Pacific Coast Steamship Company made regular calls at Port Townsend. Boat builders included the Madison Street Marine Ways at the foot of Madison.

Seattle

Seattle's sheltered deep water harbor and central location within the Salish Sea contributed to the city's growth as a major distribution center. By 1897 Seattle shipped more cargo than unprocessed materials. The Klondike gold rush cemented the city's already growing role as a supply point for Alaska. Residential neighborhoods were built on the hills overlooking tide flats, with streets dropping sharply down to waterfront piers. By 1890 the city boasted a multitude of boat builders including N. H. Barlett, Budlong & White, Clark & Bartlett, Howe William, G. V. Johnson & Son, and Niels C. Peterson, G. C. Walker. Within the next ten years these grew to include boat builders: Anchor Boat Company, Anton Chilberg, G. E. Budlong, J. A. Copp, P. G. Copp & Company, Frank Fabre, M. J. Jonson, C. E. Lake, J. W. Nolan, Proctor Boat Company, W. J. Schertzer & Brothers, and the South Seattle Boat Works.

Several ship chandlers supported commercial vessels making port of calls at Seattle. By the 1890s these included the Gordon Hardware Company and the Seattle Hard-

ware Company. In 1893 the Great Northern Railway connected with Seattle via Everett, providing the city with a transcontinental link for shipping. The 1897 Yukon River gold rush ushered in a frenzy of activity along the waterfront. Within the first seven months more than 70 ships were launched bound for Alaska.

View of Port Townsend from the water. Image courtesy of Artifacts Consulting, Inc., 2010.

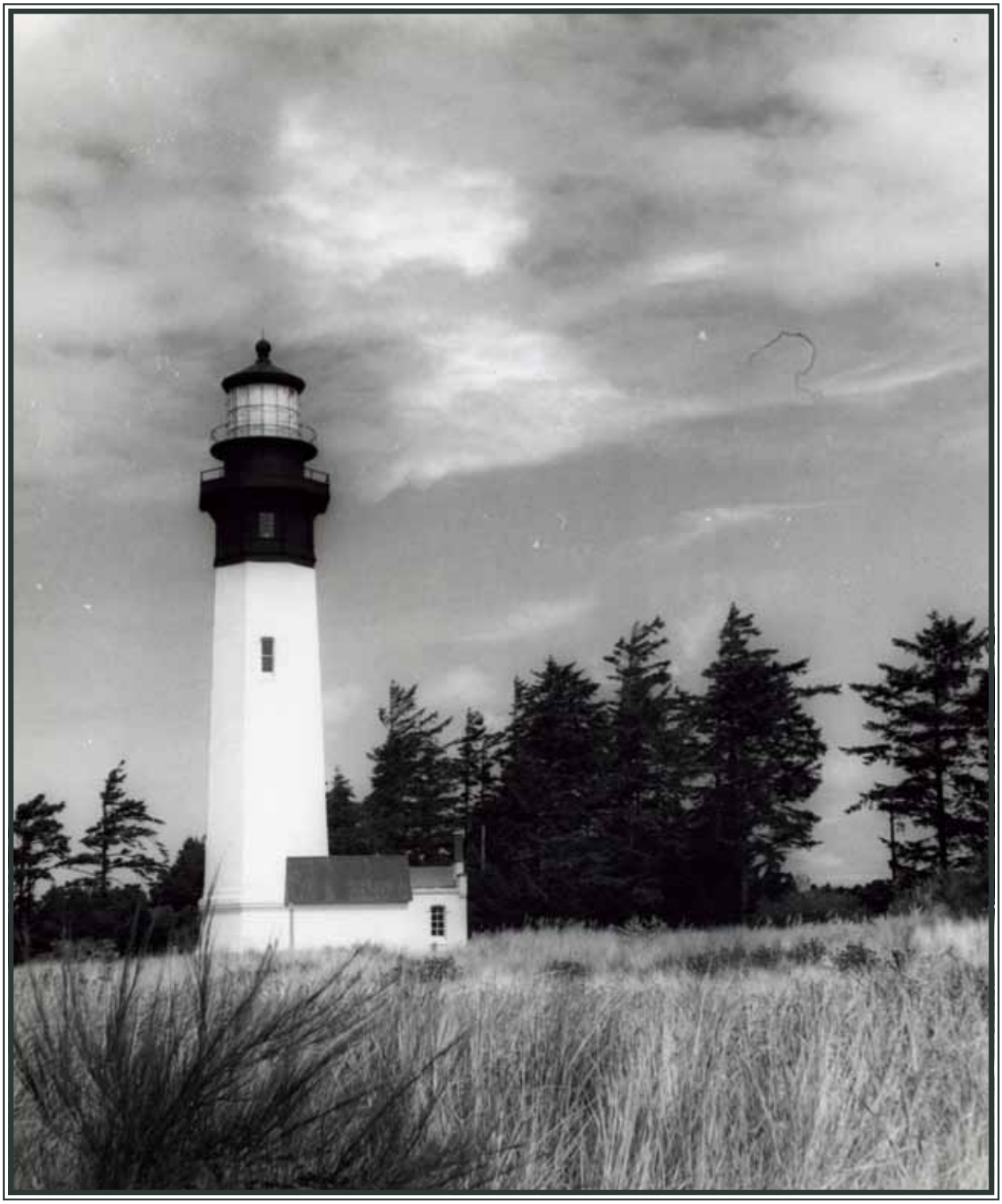
In 1911 the State Legislature authorized the creation of the Port of Seattle. Over the next decade the port constructed two of the longest piers in the world to receive ships bound for Alaska and arriving from Asia. Buildout over the tide flats expanded the city's industrial footprint. The city grew to be the largest in the Pacific Northwest and one of the largest import-export cities in the U.S.

By 1914, the city had grown to become its own market in which imports outpaced exports.[25] The ship canal locks, completed in 1916 and linking Lake Union with Elliott Bay, were second in size to the Panama Canal locks.[26] During WWI, more than 20 shipyards operated along the waterfront, and Harbor Island was created at the mouth of the Duwamish into an industrial center. Civil unrest followed the post-war economic slow down and 1929 financial collapse, which led to several waterfront strikes. During WWII the shipyards expanded again to keep pace with wartime demand, producing supply tenders, aircraft carriers and cargo ships. By the 1950s 70 sea lines made regular stops to the port's cargo facilities. More than 200 ships formed part of the Coast and Alaska fishing fleets in winter in Seattle. In the 1960s the port opted to develop around the use of marine shipping containers at a time when the technology was just starting. This choice and the facilities developed contribute to the growth of the harbor.

[25] Chasan, 61.

[26] Writers' Program of the Work Project Administration in the State of Washington, 209-241.

NAVIGATION & LIFESAVING



Grays Harbor Lighthouse, ca. 1959. Designed by Carl W. Leick, the Grays Harbor Lighthouse sits on Point Chehalis near the community of Westport overlooking the Pacific Ocean. The lighthouse rises over 100 feet, making it the tallest lighthouse in Washington. Dedicated in 1898, the Grays Harbor Lighthouse marks the entrance to Grays Harbor. Two oil houses flank the now automated lighthouse. The lighthouse is accessible to the public through the Westport-South Beach Historical Society. The **Grays Harbor Lighthouse** is listed to both the Washington Heritage Register and National Register of Historic Places. Image courtesy Washington State Archives.

Exploration of the Pacific Northwest during the 18th and 19th centuries uncovered the region's vast resources and immense potential for Euro-American settlement. The difficulty of overland travel during this time made waterways the most direct method of travel; however, they were not without their own dangers. Sheer cliffs, strong currents, and heavy fog waylaid many ships sailing along the western coast of present-day Washington State. Increased maritime traffic in the region following the establishment of the Oregon Territory in 1849 demanded the construction and organization of lighthouses, buoys, and lifesaving stations to serve commerce and to provide guidance and assistance to distant mariners.

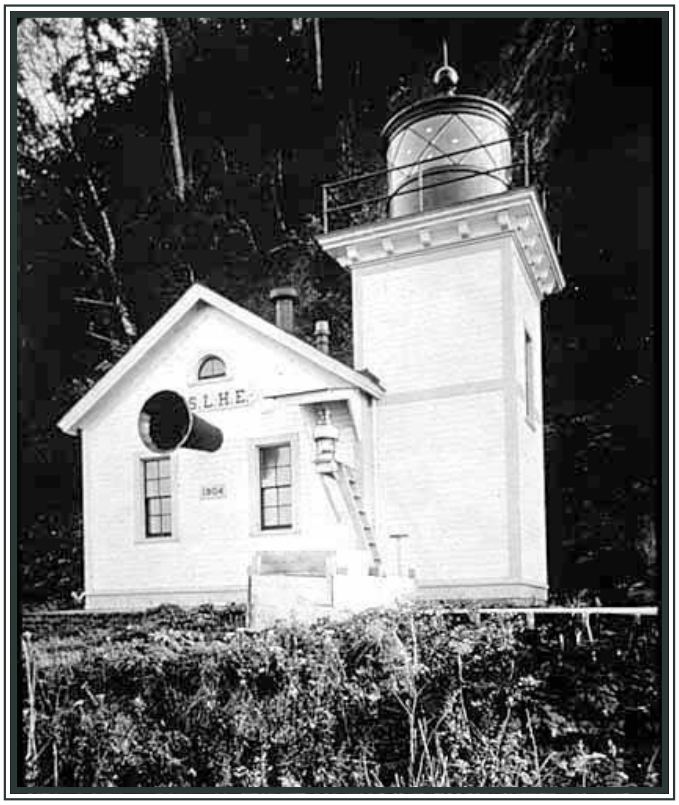
Our coastline retains a remarkable collection of operating and former lifesaving facilities, ranging from lighthouses to lifesaving stations, at their original locations. Many have transitioned into the care of non-profit foundations, some to state and national parks for heritage tourism, and a few remain in operation. These remaining icons continue to demonstrate the role maritime activities played in shaping the Euro-American settlement of this region.

Development of the United States Coast Guard

The United States Coast Guard began with two independent agencies joining forces in 1915, the Lifesaving Service and the Revenue Cutter Service. Over the years, three more agencies came under the Coast Guard umbrella to form the agency as we know it today: the Lighthouse Service, the Steamboat Inspection Service, and the Bureau of Navigation.

From Native American canoe cultures to the first colonists, arriving by ship from Europe, water travel has always been critical to travel in the United States, thanks to its many waterways. As shipping traffic to the colonies increased, Euro-American settlers on the Atlantic Coast needed navigational aids, and the local colonial government often shouldered the expense for lighthouse construction. In September 1716, American colonists established the first lighthouse, the Boston Lighthouse, on Little Brewster Island in Boston Harbor, Massachusetts. When the American colonies became independent from England, the young nation's first Congress passed the Lighthouse Establishment (later known as the Lighthouse Board or Lighthouse Service) on August 7, 1789, federalizing existing lighthouses and appropriating

funds for new lighthouses, beacons, and buoys.[1] In addition to lighthouse and beacon structures, the Lighthouse Service eventually operated a fleet of ships known as lighthouse tenders, which carried supplies to isolated lighthouses.



Slip Point Light House Station. Courtesy U.S. Coast Guard

On August 4, 1790, Congress authorized the construction of a fleet of 10 vessels to enforce tariff and maritime laws, called the Revenue Service or Revenue-Marine and administered by the Treasury Department. By the end of the 1790s, the responsibilities of the Revenue-Marine had extended to include protecting the nation's coasts. The scope of the Revenue-Marine further expanded as maritime traffic continued to increase, calling for the enforcement of slave trade restrictions and quarantine laws.

Safety continued to be an issue in maritime travel, particularly with the emergence of steam-powered vessels. An 1837 explosion of the steamboat *Pulaski* resulted in the loss of 100 lives and propelled Congress to pass an act that begin establishing safety standards aboard commercial steam vessels. New regulations included vessel inspections and the installation of fire-fighting and life-saving equipment. These rules were rarely enforced, however, and in 1851 and 1852, a series of deadly accidents that cost nearly 700 lives prompted Congress to pass the more rigorous Steamboat Inspection Act of 1852. This act expanded the earlier act's regulations and incorporated uniform standards for inspections. Still, these new standards were only applicable to vessels carrying passengers, and exempted tugs and freighters.[2]

The government also enacted safety measures to save ship crews and passengers in distress beginning in 1848 with the creation of the Life-Saving Service. Originally a mostly volunteer-driven organization based in New Jersey and Long Island, in 1871 the Service reorganized and established lifesaving stations along the coastline to respond to ships in distress.

[1] Truman R. Strobridge, "Chronology of Aids to Navigation and the United States Lighthouse Service: 1716-1939," United States Coast Guard (December 14, 2009), accessed October 8, 2010, http://www.uscg.mil/history/articles/h_USLHSchron.asp; United States Coast Guard, "U.S. Coast Guard: A Historical Overview," (August 6, 2008), accessed October 19, 2010, http://www.uscg.mil/history/articles/h_USCGhistory.asp.

[2] United States Coast Guard, "U.S. Coast Guard: A Historical Overview."

The Coast Guard in the Pacific Northwest

Point Robinson Lighthouse, Maury Island. The **Point Robinson Light Station** is listed to both the Washington Heritage Register and National Register of Historic Places. Courtesy Artifacts Consulting, Inc., 2011.

The Revenue Cutter Service arrived in the Pacific Northwest when the cutter *Jefferson Davis* sailed into the Salish Sea (then known as the Puget Sound) on September 28, 1854, establishing the first Coast Guard unit in the Oregon Territory. The need to collect revenue on the growing maritime trade in the region led the government to set up a customs collection center in Astoria, Oregon, and in 1851, the Puget Sound Collection District in Olympia. In 1853, the Olympia office moved to Port Townsend, then the largest U.S. port on the Salish Sea.[3] These customs districts collected revenue and supervised lighthouses and steamboat inspections in the region. With the purchase of Alaska in 1868, the presence of the Revenue Cutter Service in the Northwest only increased. The Steamboat Inspection Service arrived in Portland in 1863 and Seattle in 1871. The Coast Guard's presence in the Pacific Northwest expanded with increased maritime traffic and settlement along Washington's shores,[4] and it continues to play a vital role in navigational safety and regulation in the region, with units stationed up and down the Salish Sea and Washington's outer coast. Thanks to the Coast Guard's broad mission, the organization's facilities include resources such as lighthouses, lightships, and lifesaving stations as well as stations to house their fleet operations.

When the United States created the Oregon Territory in 1849, not a single lighthouse existed on the Pacific coastline. The act that established the territory, however, changed that. It called for the construction of two lighthouses, one located at Cape Disappointment at the mouth of the Columbia River, the other at New Dungeness on the Strait of Juan de Fuca. The Coast Survey, sent by the government, had recommended both sites along with 14 others, for lighthouse construction. All 16 were built between 1852 and 1858, marking the arrival of the Lighthouse Service in the Pacific Northwest. They all featured a Cape Cod design from Amni B. Young, a Treasury Department architect.[5]

Although established in 1848, the U.S. Lifesaving Service did not arrive in the Pacific Northwest until 1877, when the government commissioned stations at Shoalwater

[3] Dennis Noble, "The Coast Guard in the Pacific Northwest," The United States Coast Guard (1976): 1, accessed October 19, 2010, http://www.uscg.mil/history/articles/CGPacNW.pdf.

[4] United States Coast Guard, "Missions: Ready Today...Preparing for Tomorrow," accessed March 23, 2011, http://www.uscg.mil/top/missions/.

[5] Noble, "The Coast Guard in the Pacific Northwest," 3.

Situated on Point Elliot in the Puget Sound, the Mukilteo Light Station has been in operation since its construction in 1906. The site includes the lighthouse and fog signal building, the keeper's quarters, assistant keeper's quarters, oil house and garage. The station features buildings designed by Carl W. Leick. The **Mukilteo Light Station** is listed to both the Washington Heritage Register and the National Register of Historic Places. The City of Mukilteo leases the lighthouse from the Coast Guard and the station buildings and associated city park are open to the public. Courtesy Artifacts Consulting, Inc., 2011.

and Neah Bay in 1877 and 1878, respectively. A shore-based organization with stations usually staffed by seven "surfmen," the Lifesaving Service assisted mariners in distress close to the beach. The perilous nature of the fog-laden Pacific Coast demanded this service—the Strait of Juan de Fuca alone boasts more than 200 shipwrecks in its history.[6]

Today, the U.S. Coast Guard 13th District continues to serve the Pacific Northwest in Washington and Oregon. The 13th District operates units out of Bellingham, Everett, Ilwaco, Kennewick, La Push, Neah Bay, Port Angeles, Port Townsend, Seattle, Spokane, Tacoma, Vancouver and Westport.[7]

U.S. Lighthouses of the Salish Sea and Washington's Coast

Although the lighthouse tower is often the most iconic symbol of maritime travel, a lighthouse station consists of a variety of facilities—housing for the keeper, their family, and any other staff, and other navigational aids, such as fog signal buildings. Originally maintained and operated by a keeper and his crew, the lighthouses dotting Washington's coastline have served as guides and landmarks for mariners traveling through the region since the first ones appeared in the early 1850s. Washington still retains numerous examples of intact stations, many of which are accessible to the public.

The region's first pair of lighthouses were constructed in the early 1850s along the Strait of Juan de Fuca to guide ships into the Salish Sea. Located at Cape Flattery and Dungeness Spit, the lighthouses became operational in 1857. Renovated in 1927, New Dungeness Light alerts mariners to the dangerous five-mile long Dungeness Spit, often referred to as "Shipwreck Spit." Cape Flattery Light marks the entrance to the Strait of Juan de Fuca from the remote Tatoosh Island and is the most northwesterly lighthouse in the continental United States, as well as one of the most isolated. The lighthouse tower and keeper's residence "stand as a testament to the loneliness and hardiness of lighthouse keepers and their families," according to Bruce Roberts'

[6] Noble, 9.

[7] United States Coast Guard, "United States Coast Guard - Units by State," (September 14, 2010), accessed November 5, 2010, http://www.uscg.mil/d13/units/state.asp.

Pacific Northwest Lighthouses: Oregon to the Aleutians.[8] The 140-foot lighthouse tender *Schubick* was the first steam-powered vessel assigned by the Lighthouse Service to the West and helped in the construction of the lighthouse.[9]

Several other lighthouses were constructed along the shoreline to mark shipping lanes during the latter portion of the 19th century, including Destruction Island Lighthouse, Point No Point Light, Point Robinson Light, Alki Point Light, West Point Light, Turn Point Light, Browns Point Light, Ediz Hook Light and Marrowstone Point Light. Despite this seemingly large number of lighthouses, there were still stretches along the Pacific Coast that remained dark. It took the tragic wreck of the passenger steamer *Valencia* off Vancouver Island in 1906 to prod the public and government into action to enhance shipping navigation and lifesaving in the Pacific Northwest.[10] This heartrending event led both the U.S. and Canadian governments to call for the construction of more lighthouses and improvements on existing ones to prevent future incidents. As a result of this wreck and many others, a discernible shift occurred in the nation's perception of the principal purpose of lighthouses and lifesaving stations. Formerly viewed primarily as important aides to commerce, lighthouses newly symbolized an emphasis on the safety of ships and their crews and passengers.[11]

Keeper's quarters at the former Slip Point Lighthouse Station. Established in 1905 on the eastern shores of Clallam Bay overlooking the Strait of Juan de Fuca, the Slip Point Light Station originally featured a small lighthouse and fog signal building connected to a keeper's dwelling by a wooden boardwalk. The Coast Guard dismantled the lighthouse structure in 1951 due to maintenance costs, but the large keeper's dwelling remains on the property, continuing as a distinct landmark on Clallam Bay. The **Slip Point Light Station Keeper's Residence** is listed to the Washington Heritage Register. Courtesy Artifacts Consulting, Inc., 2011.

Keepers of the Light

Isolated and often marking dangerous coastlines, lighthouses required extensive maintenance and the constant vigilance of keepers and their assistants. Each day, a keeper had to trim lamp wicks, fill lamp reservoirs with oil, haul fuel up the winding stairs of the tower, and polish lenses. In addition to the exhausting physical labor required, a keeper also entered daily notations about the weather, each task completed around the station, and any visitors received. A second logbook included the consumption quantities of supplies, such as oil and wick, and even the exact time

[8] Bruce Roberts, *Pacific Northwest Lighthouses: Oregon to the Aleutians* (Old Saybrook, CT: The Globe Pequot Press, 1997), 29.

[9] Noble, 8.

[10] Roberts, *Pacific Northwest Lighthouses*, 2.

[11] Roberts, 2, 6.

Tents, canoes, lighthouse, and longhouse of Tatoosh Island Light Station. The **Tatoosh Island Light Station** is listed to both the Washington Heritage Register and National Register of Historic Places. Photo taken by Sam Morse. Courtesy Washington State Archives.

they lit and extinguished the lamp.[12] The arrival of a lighthouse tender signaled more goods and supplies as well as a thorough and detailed inspection of the station and personnel living quarters.

Women Keepers

Despite the dangerous nature and sheer physicality of a lighthouse keeper's work, it was one of the first non-clerical government jobs open to women.[13] All of a keeper's family members, including wives and daughters, learned to tend the lights in order to keep the lamp burning if the keeper was away or ill. The first known woman lighthouse keeper, Hannah Thomas, kept the twin lanterns at Gurnet Point in Plymouth Harbor lit in 1776 when her husband, John Thomas, joined the militia to fight the British.[14] Many of the first women keepers took over the position upon the illness or death of their husbands or fathers. It wasn't until 1828 that the Lighthouse Service established the first official record of keepers; it shows that 122 women served as official keepers, with twice that number serving as assistant keepers, between 1828 and 1905.[15]

Several women have served as official head lighthouse keepers in the State of Washington, dating back to 1868 when Flora Engle oversaw Admiralty Head Lighthouse. Ediz Hook Lighthouse near Port Angeles featured back-to-back women keepers, with Mary Smith serving between 1870 and 1874 and Laura Blach Stratton serving from 1874 to 1885. Laura Blach maintained her position when she married the local customs collector in Port Angeles, Thomas Stratton, and he served as her assistant keeper.[16] Esther Durgan watched over the Semiahmoo Light in 1925. Mukilteo Light Station also featured a female light keeper, Mrs. Christiansen, between 1925 and 1927. Another woman, Vivian Corrie, kept the Mukilteo Light between 1946 and 1960.

---

[12] Randy Leffingwell and Pamela Welty, *Lighthouses of the Pacific Coast: Your Guide to the Lighthouses of California, Oregon, and Washington* (Stillwater, MN: Voyageur Press, Inc., 2000), 78.

[13] United States Coast Guard, "Women Lighthouse Keepers," last modified April 13, 2011, http://www.uscg.mil/history/uscghist/Women_Keepers.asp.

[14] Mary Louise Clifford and J. Candace Clifford, *Women Who Kept the Lights: An Illustrated History of Female Lighthouse Keepers* (Williamsburg, VA: Cypress Communications, 1993), 1.

[15] Clifford and Clifford, *Women Who Kept the Lights*, 2.

[16] Clifford and Clifford, 44.

Anatomy of a Lighthouse Station

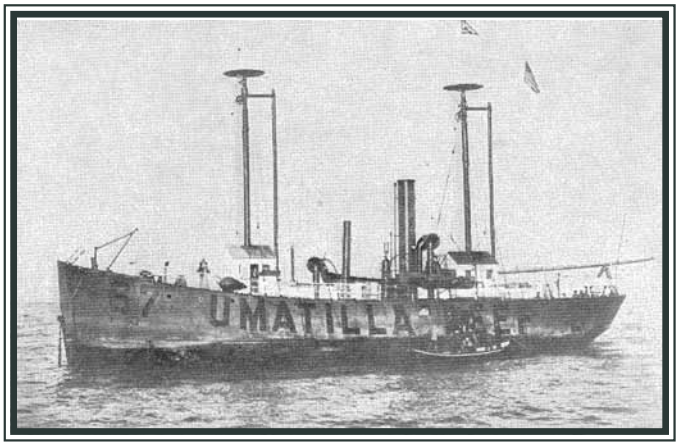
Although the traditional image of a lighthouse consists primarily of the tall lighthouse tower sending out its light beacon into the darkness, a lighthouse station also includes a series of other functional buildings and structures. This concept of a "light station" originated during the latter half of the 19th century during the Lighthouse Board's administration of aids to navigation. A station often consisted of the light tower, the keeper's dwelling, an oil house, a privy, and perhaps other auxiliary buildings for farm animals.

Each station contained the most essential feature, of course—the light tower, which contained the lantern, often a cast-iron enclosure with a railing that sat atop the tower. A staircase within the tower, typically winding around a central column or spiraling along the interior sides of the tower walls, provided access to the watch room, where the keeper maintained the mechanical operations. A ladder usually reached from the watch room to the lantern room above. The location of the light station determined the tower's height: coastal locations required taller towers, upwards of 150 feet, while harbor lighthouses featured towers less than 100 feet tall. The towers of the Grays Harbor and Destruction Island lighthouses, both coastal lights, measure 107 feet and 94 feet tall, respectively. Washington's smaller lighthouses, such as Point No Point and Alki Point, feature towers measuring less than 40 feet.

Keeper's quarters at Lime Kiln Light Station on San Juan Island. Located on the western shore of San Juan Island, the Lime Kiln Light Station has guided mariners since its establishment in 1914. The U.S. Coast Guard built the structures currently present on the site in 1917. The station includes a light tower and fog signal building, oil house, coal house, and keeper's dwellings. The **Lime Kiln Light Station** is listed to both the Washington Heritage Register and National Register of Historic Places. Although fully automated and unmanned, the lighthouse and accessory buildings are accessible to the public through the **Lime Kiln Point State Park**. Courtesy Artifacts Consulting, Inc., 2010.

The lantern room, traditionally a copper-framed enclosure containing small panes of glass, changed with the introduction of the Fresnel lens. The tremendous size and weight of these new lenses required the construction of larger lanterns. The use of Fresnel lenses was widespread by the time most of the lighthouses on the Pacific Coast were constructed.

Another building essential to the operation of a lighthouse was the oil house. Prior to 1890, many light stations stored their oil within the lighthouse itself; however, by 1890, most lighthouses in the United States had switched to kerosene. The rather volatile nature of kerosene demanded the construction of separate oil houses in fireproof materials to protect the other lighthouse facilities in case of combustion.



Umatilla Reef, Light Vessel (LV) #88. Courtesy U.S. Coast Guard.

The amount of oil used by a lighthouse, more for a larger lens and less for a smaller one, determined the size of the oil house.

The isolation of lighthouse stations, coupled with their constant maintenance, necessitated the construction of a dwelling for the keepers and their families. Lighthouses with only one keeper featured small one or one-and-a-half story wooden or stone dwellings. The introduction of newer technologies, such as the fog signal and the Fresnel lens, required more personnel, however and expanded facilities. Larger, and even multiple-family, keeper dwellings became more common, such as the keeper's quarters at Lime Kiln Light Station on San Juan Island, which feature two identical hipped roof dwellings, and the site of the former Slip Point Light Station, which boasts a large two-story duplex.

In addition to the increased number or size of personnel dwellings, light stations experienced the construction of new operational facilities, such as fog signal buildings, boathouses, garages or tramways. Fog signals provided navigational aid to ships and boats when fog obscured the light, and could include cannons, bells, sirens, and trumpets. Early fog signals required the keeper to strike a bell by hand, while later versions ran off clockworks. Boathouses, particularly for offshore lighthouses, became a common building at many stations. A keeper tending an offshore lighthouse needed a way to reach the mainland, but often, keepers used their boat to rescue fishermen or boaters.

Changes in technology further changed the operation of lighthouses. Electrification of lighthouses, and eventually automation, required fewer personnel and made some buildings obsolete, leading to their removal or demolition.

Lightships—Portable Beacons

In addition to the lighthouses that provided guidance to mariners, the Coast Guard also utilized lightships, small ships with lights fixed atop their masts, to mark treacherous locations. Although lighthouse keepers experienced severe isolation, crewmen aboard the Lighthouse Service's lightships had an even more isolated and dangerous occupation. Lightships served as portable, and therefore highly versatile, navigational aids. They served and guarded areas where the terrain made it impossible to construct a lighthouse, remaining on station even in the most severe storms.

Two lightship stations guarded the Washington Coast beginning as early as 1898 with the establishment of the Umatilla Reef station near Cape Alava, south of the entrance to the Strait of Juan de Fuca. The Swiftsure Bank station, seaward of the entrance to the Strait and about 13 miles from the Cape Flattery Lighthouse, opened in 1909.

Lightship stations would see the service of a few different lightships in their lifetime, and tracing these ships' histories around the region often resembles a game of musical chairs. Lightships went by the name of the station, with only the vessel number distinguishing it from a previously used vessel.

Umatilla Reef: 1898–1971

The Umatilla Reef station provided navigational assistance south of Neah Bay at the northwestern tip of the Olympic Peninsula. Light Vessel (LV) 67 served the station from its beginning to 1930, excluding a year of service on the Columbia River between 1905 and 1906. Constructed in Portland, Oregon, by Wolf & Zwicker Iron Works, the ship featured a steam crew, composite hull, and lantern houses on deck. Originally electrically powered, the lightship's lanterns were eventually converted to oil operation.

Moored at Seattle's Lake Union Park, the Lightship ***Swiftsure*** is a National Historic Landmark. Although this lightship, formerly known as LV #83 or *Relief*, never served at the Swiftsure Bank station, it is similar to the types of vessels which formerly marked the Umatilla Reef and Swiftsure Bank stations. It is accessible to the public and will be available for tours through Northwest Seaport following its restoration. Courtesy Artifacts Consulting, Inc., 2011.

Following the decommissioning of LV 67 in 1930, the Umatilla Reef station received LV 93, which had previously served another Washington station, Swiftsure Bank. In 1939, LV 93 moved on to the Columbia River station and LV 88 replaced it, operating at Umatilla Reef between 1939 and 1960. During WWII, the vessel moved to Seattle where it operated as an examination vessel. A buoy marked the Umatilla Reef between 1959 and 1960 until the arrival of LV 113, built in 1929 by Portland, Oregon-based Albina Marine Works. This diesel-electric propelled vessel served for a year, 1961, at Umatilla Reef until WLV 196 arrived. Constructed in 1946 by the Defoe Shipbuilding Company in Bay City, Michigan, it served at Umatilla Reef until 1971, when a lighted whistle buoy replaced it.

Neah Bay Lifesaving Station Crew, 1879 . Courtesy U.S. Coast Guard.

Swiftsure Bank: 1909–1961

Commissioned in 1909, the Swiftsure Bank station marked the Strait of Juan de Fuca, northwest of Neah Bay between Vancouver Island and the Olympic Peninsula. LV 93 served the station beginning in 1909. The ship, built in 1906 by Fore River Shipbuilding Company of Quincy, Massachusetts, featured a cluster of three oil lens lanterns and a 12-inch steam chime whistle. LV 93 continued at Swiftsure Bank until 1930, moving on to Umatilla Reef. LV 113 replaced LV 93 and served the Swiftsure Bank station until 1961, when it was repositioned as an examination vessel in Ketchikan, Alaska, during WWII. A buoy marked Swiftsure Bank for a short time during WWII, and the station was discontinued that same year.

The lightship era of the Coast Guard ended in the 1980s—the Coast Guard decommissioned the last lightship, the Nantucket I (WLV-612), on March 19, 1985—but one vessel, the Swiftsure, remains in the Pacific Northwest, docked at Lake Union in Seattle.

Lifesaving Stations

While lighthouse keepers often responded to mariners in danger near their stations, the number of shore-based rescue stations grew as maritime trade increased during the latter half of the 19th century. These early stations primarily consisted of small structures to store rescue equipment.

The rescue stations of the U.S. Life-Saving Service fell within three categories: lifesaving, lifeboat, and houses of refuge,[17] though the Coast Guard established only the first two types in Washington. Lifesaving stations were typically located in remote areas where the crew could launch their boats from the beach, and lifeboat stations were established near port cities and featured heavier lifeboat vessels.

Congress first established lifeboat stations on the Pacific Coast, including stations at Cape Disappointment and Shoalwater Bay, in 1874.[18]

[17] Dennis L. Noble, "A Legacy: The United States Life-Saving Service," United States Coast Guard, Bicentennial Publication (1987), 3.

[18] William S. Hanable, *Lighthouses and Lifesaving on Washington's Outer Coast*, (Charleston, SC: Arcadia Publishing, 2008), 8.

The Waddah Island (later Neah Bay) Lifesaving Station, located on the Makah Reservation, had the U.S. Coast Guard's first Native American crew. The Shoalwater Bay station also consistently hired Native Americans from the local Quinault tribe to man their crews when they needed extra help, most notably in the 1882 rescue of the British iron bark, *Lammerlaw*.[19]

The Waddah Island station was decommissioned in 1890, after 12 years of service. The area didn't get a new station until 1906, following the tragic *Valencia* wreck off the Vancouver, B.C. coast.

The Petersons Point Lifesaving Station in Grays Harbor went into service in 1897, near the Grays Harbor Lighthouse. Renamed the Grays Harbor Lifesaving Station in 1906, the Petersons Point Station eventually became a prototype for other stations constructed along the coast.[20] In the 1930s, the lifesaving station moved two miles northeast; with the move came a new structure constructed in the Colonial Revival style, which, in the 1930s and 1940s, became a popular design for lifesaving stations known as the "Roosevelt-type."[21]

The last station to be established on Washington's outer coast was also in this style, the Quillayute River Lifesaving Station, for which Congress appropriated funds in 1929 and the Coast Guard constructed in 1931.

The Coast Guard continues to maintain lifesaving stations along the Washington coastline, as well as many of the original lifeboat stations on the Pacific Coast, though only remnants of those original structures remain.

Built in 1939, the Westport Coast Guard Station consists of a two-and-one-half story Colonial Revival building used for both office and quarters space as well as a five-bay equipment shed. The station served as a lifeboat station until its decommissioning in 1972. No longer used by the Coast Guard, the former station is currently operated as the **Westport Maritime Museum**. The museum features exhibits on beach-combing, ocean currents and beach erosion, shipwrecks, community history, Coast Guard rescue operations, and the Fresnel lens from the Destruction Island Lighthouse. The **Westport Coast Guard Station** is listed to the Washington Heritage Register. Image courtesy Artifacts Consulting, Inc.

[19] Dennis L. Noble, "Native Americans in the U.S. Coast Guard," United States Coast Guard, last modified May 3, 2011, http://www.uscg.mil/history/NativeAmericans.asp.

[20] Hanable, *Lighthouses and Lifesaving on Washington's Outer Coast*, 79.

[21] Hanable, 90-91.

Graveyard of the Pacific[22]

Maritime accidents occur on both coasts of the United States, but the persistent fogs and bar ports of the Northwest pose additional threats to mariners traveling along the Pacific Coast. Unlike the harbors of California, the coastline of Oregon and Washington features only bar ports—sand or silt deposits at the entrance to harbors that create a shallow sand bar that all ships entering the port must cross. Heavy breaking seas and swells can make these bars treacherous to cross, even with dredging and jetties to ease the way.[23] Poor weather, limited visibility, and mechanical malfunctions also contribute to the frequency of shipwrecks, even with navigational aids. Between 1901 and 1929, maritime accidents—collisions, groundings (or strandings), sinkings (or founderings) and fire—resulted in the loss of 9,037 American ships (commercial and passenger) and 11,813 lives.[24] The tragic stories of these vessels and their crews and passengers contribute to the maritime narrative of Washington's coastline.

Image of a beached sidewheeler, possibly the *SS Beaver*. Image courtesy of the Washington State Library.

Tragedy at Sea—The S.S. Valencia

Built in 1882 at the William Cramp Shipyard in Philadelphia, the Pacific Coast Company purchased the *Valencia* by the early 20th century.[25] A small passenger steamer, measuring 253 feet long and operating with only 950 horsepower, the *Valencia* took over the Pacific Coast Company's run between San Francisco and the Puget Sound as a substitute for the *City of Puebla* in 1906. On only her second voyage, the *Valencia* set off from San Francisco for Seattle and Victoria, British Columbia under the command of Captain Oscar M. Johnson on the morning of January 20, 1906.

Fog persisted throughout the journey, preventing Captain Johnson from determining his location and forcing him to rely on dead reckoning as the ship made its way up the Pacific Coast.

---

[22] The following are examples of different types of shipwrecks that have occurred along Washington's marine shores. A thorough listing of accidents would require far more room than afforded in this document. For further information on Washington and other Pacific Northwest shipwrecks, see David H. Grover's *The Unforgiving Coast* (2002), Gordon R. Newell's *S.O.S. North Pacific* (1955), and R. E. Wells' *A Guide to Shipwreck Sites Along the Washington Coast*, to name a few. Although oriented more towards wrecks of Vancouver Island, the Virtual Museum of Canada's website "**Graveyard of the Pacific: The Shipwrecks of Vancouver Island**" provides an interactive map of wrecks on both the American and Canadian sides of the Strait of Juan de Fuca, as well as information on the Coast Guard, lighthouses, and underwater archaeology.

[23] David H. Grover, *The Unforgiving Coast: Maritime Disasters of the Pacific Northwest* (Corvallis, OR: Oregon State University Press, 2002), 17.

[24] Grover, *The Unforgiving Coast*, 2.

[25] Some records indicate the Pacific Coast Company purchased the *Valencia* as early as 1897 while others date the purchase as 1902. Regardless, by 1906 the *Valencia* operated on the West Coast.

A strong counter current propelled the *Valencia* north at a faster pace than anticipated by the captain, and on Saturday, January 22, he calculated his location as just off the mouth of the Strait of Juan de Fuca—he was actually 19 miles further north of his turning point at the Umatilla Lightship.

The ship *North Bend* run aground on Peacock Spit, 1928. Courtesy Washington State Archives.

Late that night, the *Valencia* ran aground on the coast of British Columbia, five miles east of Pachena Point. Johnson ordered the lifeboats to be lowered for launching at daylight, but finding no crew members stationed at the boats, panicked passengers attempted to launch the boats themselves. The passengers lacked the skill needed to properly launch or handle the craft, and boats quickly overturned, throwing people into the frigid sea. Despite the rescue efforts of several ships, 136 individuals lost their lives and no women and children survived. The tragedy led to the reestablishment of a life-saving station at Neah Bay and the construction or improvement of lighthouses along the approaches to the Strait of Juan de Fuca.

Run Aground—The St. Nicholas

Largely considered the earliest known shipwreck on the Washington coast, the *St. Nicholas* ran aground on the beach a mile north of James Island, near the mouth of the Quillayute River. The Russian brig, commanded by Captain Nikolai Bulagin, left New Archangel (Sitka, Alaska) for the Oregon Territory in search of a permanent Russian settlement in late September 1808.[26] A broken fore yard coupled with an onshore wind drove the *St. Nicholas* ashore on November 1, 1808. The ship sank slowly, allowing the crew to reach shore safely. The crew attempted to travel overland in hopes of reaching another Russian vessel in Grays Harbor, but a local tribe overtook the survivors, capturing three of them. The remaining crew built a canoe that capsized before they could reach safety. Native Americans captured the crew and later took them to Ozette Village, in Makah Territory. The American brig *Lydia* rescued the survivors in May 1810.[27]

[26] Olympic Coast National Marine Sanctuary, "The St. Nicholas Shipwreck," *Olympic Coast National Marine Sanctuary*, accessed November 5, 2010, http://olympiccoast.noaa.gov/living/history_and_culture/shipwrecks/stnicholas.html.

[27] R. E. Wells, *A Guide to Shipwreck Sites Along the Washington Coast* (Sooke, British Columbia: R. E. Wells, 1989), 38-39.

When Ships Collide—The S. S. Pacific and the Orpheus

The *S. S. Pacific*, a side-wheel steamship built in New York in 1851, left Victoria Harbor on November 5, 1875. Seemingly pristine, a fresh coat of paint concealed the ship's rotten timbers. A stern southerly wind met the Pacific as she rounded Cape Flattery to head south, slowing her progress. Simultaneously, the full-rigged ship *Orpheus*, sailing from San Francisco to British Columbia, sped north at a speed of nearly 12 knots. As night fell, the *Pacific* did not notice the *Orpheus* approaching until too late, glancing off the side of the *Orpheus* three times. The *Orpheus* soon lost sight of the *Pacific* in the darkness and rain and Captain Charles Sawyer failed to hail the steamboat. The *Pacific's* rotten hull had ripped open upon collision and seawater rushed into the engine room. The panicked crew launched one lifeboat as the *Pacific* overturned and sank. The lifeboat capsized and all aboard perished. Only two survived the wreck, passenger Henry Jelley and quartermaster Neil Henley, who clung to pieces of wreckage until rescue arrived.

Unable to see the *Pacific*, the *Orpheus* crew quickly set to work repairing the damage to their ship, allowing them to continue on course. Soon after, the *Orpheus* ran aground on Cape Flattery, but the crew made it safely to shore. Although he led his own vessel and crew to safety, the newspapers and public blamed the *Orpheus'* Captain Sawyer for the tragic loss of the Pacific, a guilt he carried for the rest of his life.[28]

A Sinking Ship—The Clallam

The *Clallam*, a Mosquito Fleet steamboat, set out from Port Townsend for Victoria in early 1904. Overwhelmed by a gale in the Strait of Juan de Fuca, seawater flooded the engine room. Women and children drowned when the steamboat's crew launched its lifeboats. Many male passengers died when the *Clallam* capsized, even with a line from the tug *Richard Holyoke* aboard. Altogether, 51 people lost their lives that day.[29]

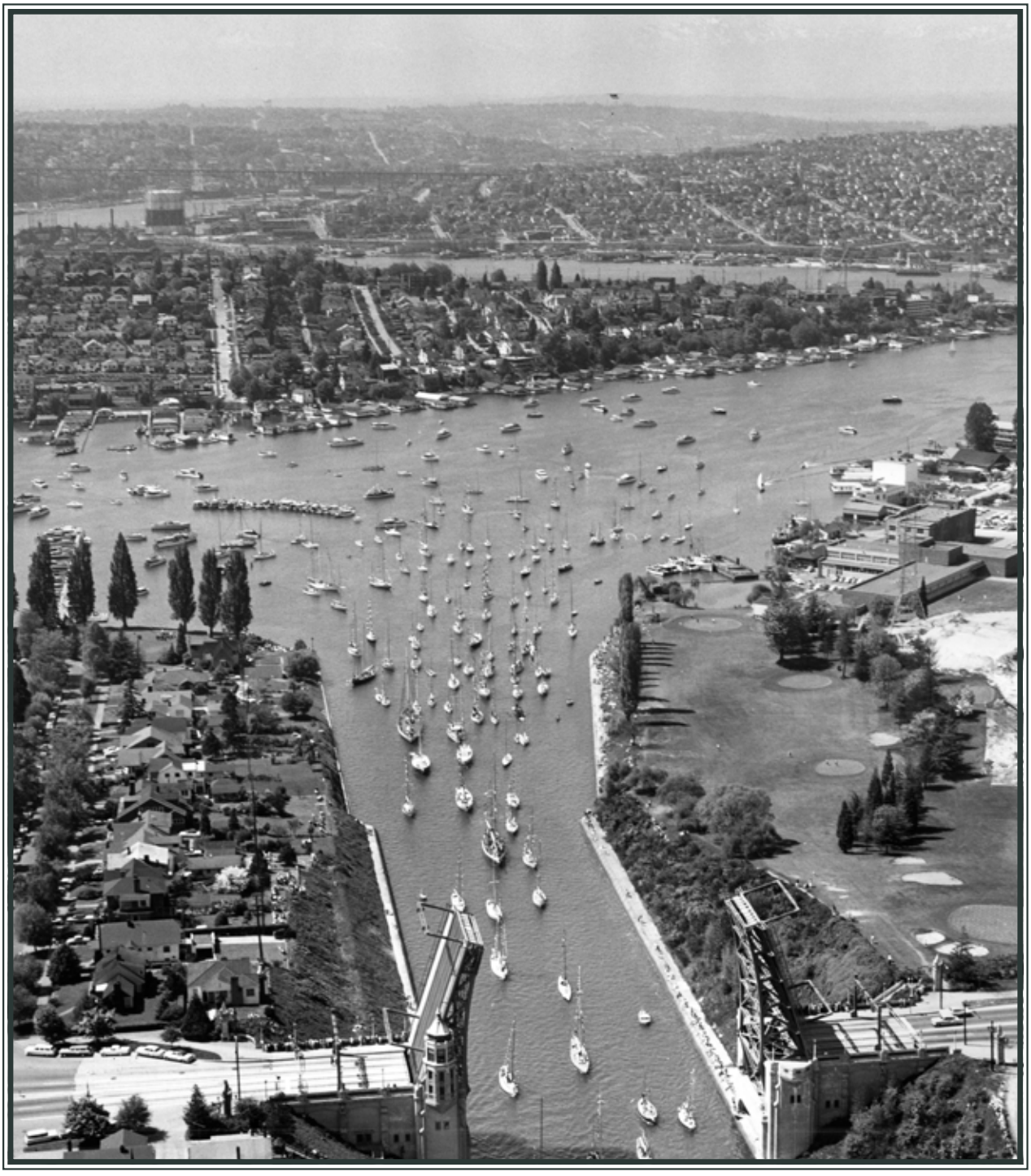
Fire at Sea—The Salina Cruz

In 1949 the Seven Seas Trading and Shipping Company of Los Angeles purchased the *Salina Cruz*, a double ender wooden steam schooner built in 1920, to carry loads of lumber. After loading a cargo of lumber and foodstuffs at Vancouver, B.C., *Salina Cruz* set out for Honolulu in October 1949. On the morning of October 17th, 140 miles off of Grays Harbor, a fire broke out in her engine room that, aided by heavy winds, engulfed the vessel. The crew, led by Captain Ivey, transmitted an SOS and then launched the ship's two boats. Coast Guard patrol planes out of Astoria spotted the survivors and guided the rescue ship *Black Douglas* to their location.

[28] Gordon R. Newell, *S O S North Pacific: Tales of Shipwrecks off the Washington, British Columbia and Alaska Coasts* (Portland, OR: Binfords & Mort, 1955), 26-33.

[29] Newell, *S O S North Pacific*, 99-100.

FOR LOVE OF THE WATER - RECREATION



Sailboats passing through the Montlake Cut in Seattle, ca. 1955. Courtesy Washington State Archives.

While the abundance of natural resources available prompted the initial surge of Euro-American settlement and industry in the Pacific Northwest, few can deny the draw of the region's natural beauty and recreational opportunities, both past and present. As the population grew, individuals and businesses established recreational organizations, not only to offer marine activities for residents but also with eyes towards creating a tourist market. Water-related recreation opportunities in the region include fishing, building and racing boats, kayaking, and various water-based touring operations, all of which provided a unique glimpse of the region's landscape and wildlife.

Recreational Boating

The first craft to ply the waters of the Pacific and the Salish Sea were primarily utilitarian: the canoes of the region's Native peoples pursued fish and whales to feed their communities and the ships of Euro-Americans transported goods to market. However, smaller vessels, such as personal skiffs and canoes, also dotted the region's waters, providing transportation for an individual or family. Many of these small craft came to be used solely for recreation and individuals even began to purchase craft specifically designed for leisure-time use. As the region's sea-based commerce became increasingly profitable, shipping and timber businessmen with time and money to spare sought the leisure of pleasure cruising, ushering in a new era of boatbuilding along the Salish Sea.

Detail of the wooden sailboat *Puffin*, 2010. Courtesy Artifacts Consulting, Inc.

Northwest Boat Building

A generation of wooden boat builders responded to the increased demand for recreational watercraft during the early 20th century. Individuals and families set up shop throughout the Sea, and many along the shores of Seattle's Lake Union. The completion of the Ballard Locks and the Ship Canal allowed sailors to cover even more territory in their leisurely pursuits and the popularity of uniquely designed and hand-crafted vessels allowed the creativity of local naval architects and boat

builders to flourish. Names like Blanchard, Geary, Monk and Prothero became synonymous with quality watercraft.[1]

Blanchard Boat Company

During the early 1900s in Seattle, "there was a boat livery on Lake Washington wherever a cable or electric car line terminated," according to Norm Blanchard. The Blanchard and Johnson families operated one such boatyard in Seattle, Johnson Bros. & Blanchard, which opened for business in 1905 with partners Norman J. (N.J.) Blanchard and brothers Dean and Lloyd Johnson. Johnson Bros. & Blanchard established a reputation for their boat building capabilities, particularly in 1911 when they constructed the 100-foot, wooden motoryacht *Helori* for O. O. Denny in 90 days at a cost of $10,000. According to N.J.'s son and successor, Norm, the *Helori* "was the largest motor yacht built on the West Coast at the time."[2] The company's *Sir Tom*, a 38-foot racing sloop designed by Ted Geary, also made a name for itself and the company, ruling Pacific Coast R Class yacht racing for many years.

The *Eleanora*, a Blanchard Knockabout, moored at the Center for Wooden Boats on Lake Union. With two locations, one on Seattle's Lake Union and the other at Cama Beach on Camano Island, the **Center for Wooden Boats** serves as an outdoor classroom and workshop, providing lessons and demonstrations in boatbuilding to the public. In addition to the hands-on learning experiences provided, the Center for Wooden Boat maintains wooden vessels for public display and use.

When Johnson Bros. & Blanchard went bankrupt in 1915 over the construction of the *Kuskokin River*, N.J. Blanchard briefly went to work for Skinner & Eddy boatyard, then opened his own company, Blanchard Boat Company, four years later on Lake Union, in a rebuilt 120-foot warehouse previously part of the Naval Officers School on the University of Washington campus. N.J.'s son, Norm, also eventually joined the business. The company proceeded to build the Geary-designed, 62-foot schooner, *Katedna*. Sold several times, the schooner eventually made its way back to Seattle, where N.J. rebuilt, refinished and renamed her. As *Red Jacket*, she continues to sail the waters of the Salish Sea.

These professionally designed and built vessels were an upper-class indulgence in the early part of the 20th century, thanks to their high prices. However, the Great Depression turned customer demand to more modest and affordable craft. New boat designs reflected this change and resulted in the popularity of boats like the Blanchard Boat Company's Blanchard Junior Knock-

[1] Ross Anderson, "Norm Blanchard and the Art of Wooden Boats," *The Seattle Times*, August 27, 2000.

[2] Norman C. Blanchard with Stephen Wilen, *Knee-Deep in Shavings: Memories of Early Yachting & Boatbuilding on the West Coast* (Victoria, B.C.: Horsdal & Schubart, 1999), 5.

about, Ted Geary's Flatties, now known as Geary 18's, and William Garden's Port Madison prams.[3]

Lake Union Drydock Company

In response to increased demand for ships following WWI and the completion of the Ship Canal, Otis Cutting and J. L. McLean founded the Lake Union Drydock Company on the southeastern shore of Lake Union in 1919. The shipyard is built almost entirely over water and is comprised of a series of buildings, drydocks and piers. The shipyard continues to operate and has throughout its history constructed a variety of vessel types, including luxury yachts, Coast Guard cutters, tuna clippers, and Navy minesweepers.[4] Today the yard primarily repairs existing vessels, but its presence on Lake Union speaks to the area's once booming wooden vessel building industry.

View of the Lake Union Drydock Company site. This historic, but still operating, shipyard located on Seattle's Lake Union is a reminder of the lake's once-thriving wooden vessel building industry. Otis Cutting and J. L. McLean founded the company in 1919. A variety of vessel types were built at the **Lake Union Drydock Company** over the years, but now the company primarily repairs vessels. Its highly visible location on Lake Union makes it possible for the public to observe the number of vessels moored at the dock. Courtesy Artifacts Consulting, Inc., 2011.

Ted Geary

Leslie "Ted" E. Geary, a prominent naval architect and yachtsman, designed many yachts during his career in the Seattle area. Geary specialized in the design of large motor yachts, but also designed racing-class sailboats, such as the *Sir Tom*, as well as Geary Class 6,000-ton wooden vessels for the U.S. government.[5] Geary got his start early in life designing and building boats, completing his first vessel, the *Empress*, in 1899 at the age of 14. As an undergraduate at the University of Washington, Geary designed the 42-foot sloop *Spirit* for the Seattle Yacht Club, which would go on to compete in the Dunsmir Cup in 1907. Early successes such as this allowed Geary to attend the Massachusetts Institute of Technology, where he studied naval architecture. Upon his return to Seattle, Geary resumed his working relationships with local boatyards and the Seattle Yacht Club, designing impressive vessels like the *Helori*, the 90-foot cruiser *Wanda* and the 115-foot *Samona* throughout the 1920s. Geary moved to Southern California in the early 1930s but demand for yacht

[3] For examples of these boat types, visit the **Center for Wooden Boats** located on Lake Union in Seattle. Another great site for experiencing and understanding the craftsmanship that goes into wooden boat design and construction is the **Northwest School for Wooden Boatbuilding** in Port Hadlock.

[4] Department of Archaeology and Historic Preservation, *Lake Union Drydock Company*, DAHP#17-03055, (November 2, 1998).

[5] "Rites to Be Held For Ted Geary," Seattle Times, May 20, 1960, 20.

designs dwindled with the arrival of the Great Depression and he retired from his profession following WWII.

Ed Monk

Born in Port Blakely on Bainbridge Island to a long line of shipwrights, Ed Monk continued in his family's profession, apprenticing to his father George upon his graduation from high school, first working on Robert Moran's 135-foot yacht on Orcas Island.[6] Monk became a very skillful shipwright, but decided his interest lay in designing vessels more than building them. Continuing work as a shipwright, he took naval architecture courses by correspondence. In 1925, Monk went to work for the Blanchard Boat Company, which afforded him the first opportunities to design small vessels. Monk launched his first design, the *Nan*, in 1934, on which his family lived for several years. Monk went on to design many other yachts, such as the *Adventurer* and *Whim*, earning himself a reputation as an excellent naval architect.

Founded in 1981 by master shipwright Bob Prothero, the **Northwest School of Wooden Boatbuilding** provides instruction in the unique wooden boatbuilding techniques of Puget Sound through vocational programs and workshops. The school facilities are located in Port Hadlock, near the Port Hadlock Mill Site. Image courtesy of Artifacts Consulting, Inc., 2011.

Prothero Brothers

Frank Prothero and his brother Robert (Bob) ran a boatbuilding shop on Lake Union for many years, primarily building and repairing commercial vessels. The brothers carried on the boatbuilding tradition of their family, which had begun building boats in Seattle as early as 1870.

The Protheros closed their Lake Union shop in 1959 to retire, but neither man left the craft. Soon after, Frank began to build *Alcyone* in his own backyard, followed by *Glory of the Seas*. Modeled after a Gloucester fishing schooner, *Alcyone* is one of only a few classic schooners completed after the 1930s. Frank sold the *Alycone* in the mid-1960s and the schooner continues in active use for sail training and chartering, based in Port Townsend. *Alcyone* retains much of her original materials and features, with minor exceptions to the interior layout.

Bob Prothero also continued in his family's craft, founding the Northwest School of Wooden Boat Building at Port Hadlock in 1981 to provide vocational instruction in the skills and craftsmanship associated with wooden boat building. The school continues to grow in size and reputation while preserving this unique trade.

[6] Bet Oliver, *Ed Monk and the Tradition of Classic Boats* (Vancouver, B.C.: Horsdal & Schubart Publishers, 1998), 2.

Local Craftsmanship—Canoes

Although the early 20th century saw growing demand for both expensive and affordable sailing vessels, another type of handcrafted boat also flourished throughout the region—the canoe. The first known canoe manufacturing company in the Northwest, the Monohon Boat and Canoe Company briefly operated out of Monohon on the shores of Lake Sammamish by partners John Sunderhauf and Alden Kingsbury from 1908–1913.[7] Another company, the Willits Brothers Canoe Company, operated for 50 years in the South Sound, from 1914–1964, producing top quality, double plank, western red cedar canoes. The Willits brothers, Earl and Floyd, purchased property for their shop on Wollochet Bay near Artondale in September 1913 and by June of the next year their small, wood-framed, board and batten-sided shop built on pilings at the water's edge was open for business.[8]

At first, resorts, rental fleets, and camps comprised the majority of the Willits brothers' business. The brothers only built and sold a single canoe model (originally known as The Artondale Canoe, but later merely referred to as a Willits Canoe or Willits), a 17-footer that featured a unique design that had a waterproof fabric liner sandwiched between two planks (the much-referenced "double plank" design).[9] Following the end of WWI (and the brothers' return from service), the Willits' business saw a growth spurt, prompting them to move to a more easily accessible location. In 1921, the brothers moved their business out to Day Island, on the eastern shore of the Tacoma Narrows (now incorporated into the town of University Place), and built a two-story shop and a garage.[10]

The Willits brothers, Earl and Floyd, operated their canoe building operation, the Willits Brothers Canoe Company, in the South Sound for fifty years between 1914 and 1964. They produced top quality double plank western red cedar canoes, first from a shop on Wollochet Bay near Artondale and then from a larger shop on Day Island near University Place. Willits Canoes are still highly sought after vessels and are renowned for their superior quality and craftsmanship. The **Working Waterfront Maritime Museum** on Tacoma's Foss Waterway Seaport includes Willits Canoes within their exhibit. The **Willits brothers' workshop** still stands on Day Island although it has been significantly altered. It is the first building along the shoreline in this image. Courtesy Artifacts Consulting, Inc., 2011.

The University of Washington Canoe House held one of the largest fleets of Willits canoes in the 1920s. Camp Ta-ha-do-Wa, a summer camp on Tanglewood Island (off the north end of Fox Island), used Willits canoes for years. The brothers continued with their business,

[7] Patrick F. Chapman, *The Willits Brothers and Their Canoes: Wooden Boat Craftsmen in Washington State, 1908-1967* (Jefferson, NC: McFarland & Company, Inc., 2005), 31.

[8] Chapman, *The Willits Brothers and Their Canoes*, 33.

[9] Chapman, 37, 48.

[10] Chapman, 51.

only closing during WWII due to wartime restrictions on materials they needed, until Floyd's death in 1962.[11]

The hull of *Thunderbird 1*, a plywood sloop designed by Seattle-native naval architect Ben Seaborn and built by Ed Hoppen, is on display at the Harbor History Museum in Gig Harbor. The 26-foot sloop features a v-shaped hull allowing for the stiffness of multilayered plywood.

Plywood Wonder—The Thunderbird

The boatbuilding industry, particularly in the Pacific Northwest, shifted again in the early 1950s with the introduction of new technology and materials, such as plywood. In the early 1950s, the Douglas Fir Plywood Association (DFPA) decided to market their product to Northwest boatbuilders, appealing to naval architects throughout the region to design boats utilizing plywood. Seattle-native naval architect Ben Seaborn accepted the challenge. Previously known for his fast racing boat designs and engineer mind, Seaborn developed a v-shaped hull form that accommodated the stiffness of multilayered plywood. While Seaborn designed the 26-foot plywood speedster Thunderbird, it was Ed Hoppen of the Eddon Boat Company in Gig Harbor who brought the design to fruition, developing the construction methods to bend plywood in a way that would float.[12] The Thunderbird-class sailboat soared in popularity with more than 1,200 constructed worldwide.[13]

Yacht Clubs

The idea of yachts, or pleasure sailing craft, began to develop in the Netherlands during the 17th century. The practice spread to England when the Dutch gifted King Charles II with the Mary in 1660.[14] Dutch and British settlers brought their sailing traditions to the American colonies when they settled along the Eastern seaboard. As pleasure sailing increased in popularity, individuals often formed their own yacht clubs, which organized sailing events and races. The New York Yacht Club, established in 1844, is generally considered to be the first formal yacht club in the United States, and its founding marked the beginning of formal yacht racing in the country.

---

[11] Chapman, 96.

[12] Grant Fjermedal, "T-Birds," *The Seattle Times*, July 10, 1983, B6; Guy Hoppen, son of Ed Hoppen, email communications and interview, Spring 2011.

[13] "Thunderbird: Barbaree," The Center for Wooden Boats, http://www.cwb.org/south-lake-union/online-museum/boat-catalog/thunderbird-barbaree.

[14] Heaton, 2-3.

Traditionally, the term yachting applied only to sailing vessels, but the definition has expanded over time to encompass both sailing and motorized pleasure craft. Numerous yacht clubs exist throughout the world and Washington State is no different. Yacht clubs continue to exist in many of Washington's coastal communities in the Salish Sea and along the outer coastline.

Founded in 1892, the Seattle Yacht Club has functioned from its current location on Portage Bay since 1920. Designed by Seattle-architect and yacht club member John Graham, Sr., the lighthouse-inspired Colonial Revival-style clubhouse was built by Sylhaasen and Sandhal. The building continues to serve as the main gathering place for members of the yacht club. The **Seattle Yacht Club** is listed in both the Washington Heritage Register and National Register of Historic Places. Courtesy Artifacts Consulting, Inc., 2011.

Seattle Yacht Club

Founded in 1892, the Seattle Yacht Club originally met in a clubhouse at Duwamish Head in West Seattle. When the Seattle Yacht Club merged with the Elliott Bay Yacht Club in 1909 the organization selected a new clubhouse location in West Seattle and commissioned one of their members, architect John Graham, Sr., to design the new building. The club used that building until 1918 when the United State Shipping Board took it over for use as an officers' training facility. Graham, along with Commodore Norval H. Latimer, looked for a new clubhouse site and found its current location on Portage Bay. Graham designed the new building in the Colonial Revival style and it is still used by the Seattle Yacht Club today. The club includes sailors, power boaters, and even rowers and organizes classes to competitive racing.

Tacoma Yacht Club

Initially organized in 1890, the Tacoma Yacht Club struggled during the nationwide economic panic depression of 1893 as members strove to afford membership dues. However, renewed interest (and cash flow) led to the reorganization and incorporation of the club in 1908. It expanded during the early years, with 112 members by 1919, but membership dropped with the popularity of the automobile. Wives of club members formed their own organization within the club in 1937, called "Shipmates," to bring the women in the club together. Meeting in various clubhouses over the years, the club moved to its current location on the breakwater at the southwestern edge of Point Defiance in 1971.

Boating as Competition

While many of the craft built and sailed in the region simply provided enjoyment to their owners, others were built for speed and competition. It didn't take long for the recreational maritime community to form a competitive sailing circle, which raced vessels ranging from large R-class racing yachts, like *Pirate*, to sleek Pocock racing shells; from the small man-powered Geary 18's to powerful hydroplanes.

Many of the sailing yachts built in the region were used for both pleasure cruising and sailing competitions. Vessels designed by local naval architects excelled in national competitions. Naval architect Ted Geary was renowned for his winning racing yacht designs. *Sir Tom* dominated the West Coast racing circuit for nearly three decades and won the Lipton Cup every year between 1914 and 1928. Other Geary designs, such as *Pirate* and *Katedna* (later *Red Jacket*), also went on to earn acclaim.

The R-Class sloop *Pirate* sailing on Lake Union. Photographer: Karen Rohrer. Courtesy Center for Wooden Boats.

Pirate

Built in 1926 at the Lake Union Drydock, the vessel *S/Y Pirate* (and commonly referred to simply as *Pirate*) is a fine example of a Geary design. Classified as an R-class sloop, *Pirate* represents the heyday of American yacht racing, when the sport attracted participants from various economic classes and large audiences. According to the National Register Nomination for the vessel, "...*Pirate* represents the culmination of yacht design in America before the worldwide Depression of 1929." *Pirate* also attained significance for being helmed by the renowned Matthew Walsh during a watershed victory at the 1929 Larchmont regatta on the East Coast.[15] Currently owned by the Center for Wooden Boats on Lake Union, *Pirate* has been restored and now serves the Center's education goals.

Hydroplane Racing

Seattle's Seafair festival started in 1950 as a branch of the Navy's Fleet Week festivities, which began following WWII. The following year brought hydroplane racing to the festivities. Hydroplanes are fast motorboats that travel at a high speed, typically powered by airplane engines that create a loud engine noise and earning them the nickname "thunderboats." The first American Power Boat Association (APBA) Gold Cup was held on Seattle's Lake Washington.

[15] Larry E. Johnson and Scott Rohrer, "Pirate," National Register of Historic Places Nomination, 2000, 7.

University Crew

The University of Washington (UW) campus, between Lake Washington and Lake Union, was an ideal spot for rowing. Men's crew began at the University of Washington on December 15, 1899, and a women's crew followed shortly after, in 1903. The UW Amateur Rowing Association also formed during this time, in 1901. Crews raced down Montlake Cut, which connected Lakes Washington and Union. Steadily establishing its team as a force to be reckoned with, the UW crew team became the world champions in 1936, taking home the gold medal at the Olympics.

George Pocock and Pocock Shells

George Pocock, a man renowned for his craftsmanship and dedication to the sport of rowing, was born into a family of boatbuilders in England. Upon turning 14, George served as an apprentice to his father, who, at the time, served as the boathouse manager for prestigious English prep school Eton College. While George learned the trade of boatbuilding he also excelled in sculling, winning his first race at the age of 15.[16] However, in 1911, George's father was dismissed from Eton, and he and his brother Dick struggled to find jobs, prompting them to book passage aboard the *Tunisian* at Liverpool bound for Vancouver, British Columbia. In 1912, they found employment, building sculls for the Vancouver Rowing Club.

> It's a great art, is rowing
> It's the finest art there is.
> It's a symphony of motion.
> And when you're rowing well
> Why it's nearing perfection.
> And when you reach perfection
> You're touching the divine.
> It touches the you of you's
> Which is your soul
>
> —George Pocock, boatbuilder

Word spread of the quality of their work, catching the eye of UW rowing coach Hiriam Conibear. He asked the Pocock brothers to move to Seattle and begin building eight-oared shells for the UW. The brothers accepted the offer but continued to operate their business in Vancouver for a short time before moving to Seattle. The brothers built their shells for the UW crew teams in the old Tokyo Tea Room until 1916. During WWI, the Pococks worked at Boeing building pontoons for seaplanes.

With the end of WWI, Dick followed Ed Leader, the coach who had succeeded Conibear, to a new position at Yale University. George remained in Seattle, returning to work at the UW under new coach Rusty Callow. The university crew team went on to great fame in the 1920s and 1930s, so much so that other crews took notice of Pocock's winning designs. Harvard tried to hire George away from UW, but he continued on in his shell house. His crew worked hard and efficiently fulfilling shell

[16] Gordon Newell, *Ready All! George Yeoman Pocock and Crew Racing* (Seattle, WA: University of Washington Press, 1987), 12. Newell's biography provides a thorough account of Pocock's life and work as a boatbuilder and references Pocock's own recollections.

orders while George also bestowed his wisdom on the young crewmembers. Pocock continued to build shells until his retirement in 1972 at the age of 81. His son, Stan, took over the Pocock family boatbuilding business helm. Pocock Racing Shells, now based in Everett, continues to build racing shells, carrying on the Pocock family tradition and reputation.

View of Cama Beach from the water. Established by LeRoy "L. R." Stradley as a fishing resort in 1934, the Cama Beach Resort is now managed by Washington State Parks as **Cama Beach State Park**. The resort's original cottages are still available for rent and visitors to the site are provided with carts to carry their supplies down to the beachfront cottages. A **branch of the Center for Wooden Boat**s also operates at the site and offers boat rentals and boatbuilding and sailing lessons for youth and adults. The Cama Beach Resort is listed in both the Washington Heritage Register and National Register of Historic Places. Image courtesy Artifacts Consulting, Inc., 2010.

Waterfront Vacationing

The natural beauty of the region's maritime landscape draws people to the rugged shores of the Pacific Ocean and the Salish Sea, and they provide numerous opportunities for outdoor recreation. Many local businesses offer services to tourists that take advantage of the variety, from boat rentals to whale watching. There are also many marine-oriented resorts, hotels, and camps/campgrounds.

Resorts and Motor Courts

Recreation and leisure time, particularly family vacations, looked very different in the 1920s and 1930s than they do today. During this time many American families began to own cars, usually only one per family, which greatly changed peoples' ability to access outdoor experiences. With recreational vehicles and trailers still vehicles of the future, many families drove to motels or campgrounds, or stayed in cabins on the beach or in the woods.[17] Camano Island, tucked between Whidbey Island and the mainland, offered many beach resort options during this time, such as the Cama Beach Resort. LeRoy "L. R." Stradley and his family opened the resort, advertised as a fishing resort and featuring forty cottages lined up along the waterfront, in May 1934. The Stradley family (and later L. R.'s daughter, Muriel, and her husband Lee Risk) owned and operated the resort from its opening in 1934 until 1989.[18]

Other beach resorts also operated up and down the Washington coastline, with several earning mention in the guide put out by the Federal Writer's Program in 1941, *The New Washington: A Guide to the Evergreen State.* Summer cottages and

[17] Gary Worthington, *Cama Beach: A Guide and a History* (Olympia, WA: TimeBridges Publishers, 2008), 43-44.

[18] The Cama Beach Resort, reopened in June 2008, is listed on the National Register of Historic Places and is currently owned and operated by Washington State Parks. A branch of the Center for Wooden Boats is also located at the site.

cabins lined the shores of Sunset and Pacific Beaches, north of Copalis.[19] Ruby Beach, a small community south of Forks, boasted a cabin camp on cliffs overlooking the Pacific.[20] Bainbridge Island featured both summer camps "strung along beaches" as well as the Pleasant Beach summer resort.[21] Deer Harbor on Orcas Island had a reputation as a resort district,[22] and the San Juan Islands continue to enjoy significant tourism business, primarily on Orcas and San Juan Islands.

Whid-Isle Inn on Penn Cove, Whidbey Island. August 6, 1911. Courtesy Washington State Library.

The early 20th century also marked the beginning of a tourist industry in the Central Whidbey area that still continues today. Most of the attention first focused on Penn Cove because of its recreation potential and scenic views. In 1901, Lester Still, a local lawyer, judge (the first in the area), and entrepreneur, purchased property near Coveland and began a resort development. The property, a densely wooded point projecting from the cove's south shore, came to be known as Still's Park. By 1907, small wood frame cabins existed in conjunction with a larger structure, the Whid-Isle Inn. Constructed of logs and overlooking the cove, this rustic hostelry welcomed both locals and visitors from Seattle and beyond. Arriving by steamer at the Inn's landing, guests enjoyed a quasi-wilderness experience which included boating, fishing and relaxation. Before long, the Whid-Isle gained a solid reputation for good meals and hospitality, eventually drawing more than seasonal guests. While the automobile replaced the steamship and contemporary seasonal and permanent homes replaced Judge Still's cabins, the picturesque inn continues to attract guests year round.

Summer Youth Camps

Summer camps also increased in popularity providing children, particularly those living in cities, with a wilderness experience and summer getaway. Camps gave children a taste of independence and self sufficiency while offering lessons on trust, teamwork, and ethics.

Orcas Island boasted a summer camp on its northern tip for more than 100 years, the **YMCA Camp Orkila**. Originally named the Seattle Boys Camp, Seattle's Colman

[19] Writers' Program of the Work Project Administration in the State of Washington, *Washington: A Guide to the Evergreen State* (Portland: Binford & Mort, 1941, revised 1955), 559.

[20] Writers' Program of the Work Project Administration in the State of Washington, *Washington: A Guide to the Evergreen State*, 555.

[21] Writers' Program of the Work Project Administration in the State of Washington, 619-620.

[22] Writers' Program of the Work Project Administration in the State of Washington, 628.

Summer church camps, like the Covenant Beach Bible Camp established in 1931, provided young people with an opportunity to explore the natural environment within the context of a sponsoring social and/or religious organization. The Covenant Beach Bible Camp continued in operation as a summer camp until 1986 when the City of Des Moines purchased the site for use as a recreational park. The site retains many of its original buildings and is accessible to the public. The **Covenant Beach Bible Camp** is listed in both the Washington Heritage Register and National Register of Historic Places. Image courtesy of Artifacts Consulting, Inc., 2011.

family—builders of the first Colman Dock in Seattle in 1882—allowed the YMCA to camp on their Agate Beach property on Orcas Island in 1906. In 1938, the Colmans deeded the entire property, 174 acres, to the YMCA to develop a permanent camp. The remoteness of the island, particularly before scheduled ferry service to the San Juans began, added to the sense of adventure for boys traveling away from home, often for the very first time. Opened to girl campers in 1970, **Camp Orkila** continues to flourish and play a role in the lives of Northwest youths.[23]

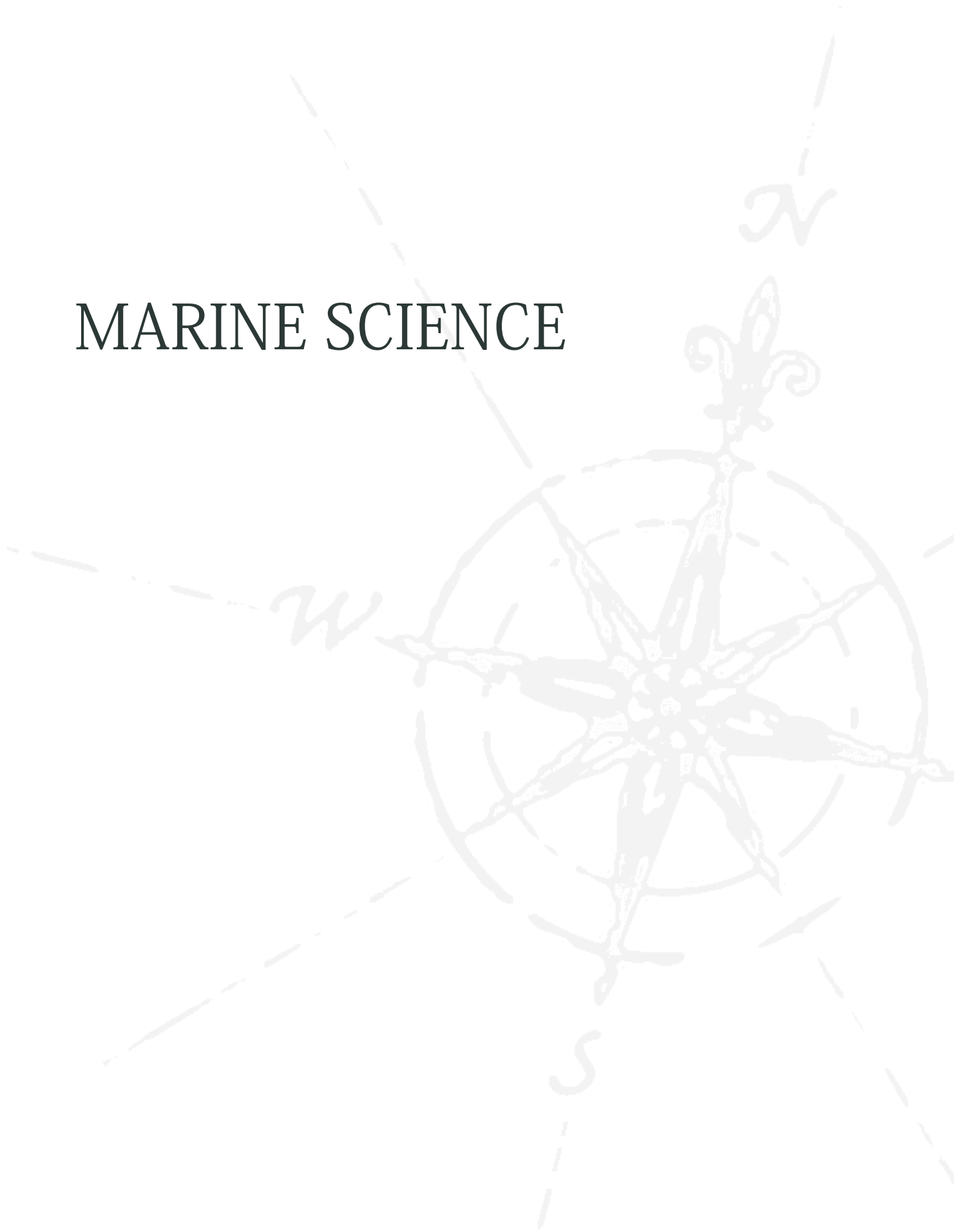
Located along Colvos Passage on the west side of Vashon Island, Camp Sealth has operated as a summer camp for Campfire Girls since 1920. Girls rode a ferry from Seattle (first the *Virginia IV* and then the *Virginia V*) to Vashon Island to spend weeks on the island exploring the environment. The camp still utilizes many of the historic buildings, including log cabins. **Camp Sealth** continues to operate as a summer camp, but is also open year round for educational programs for students.

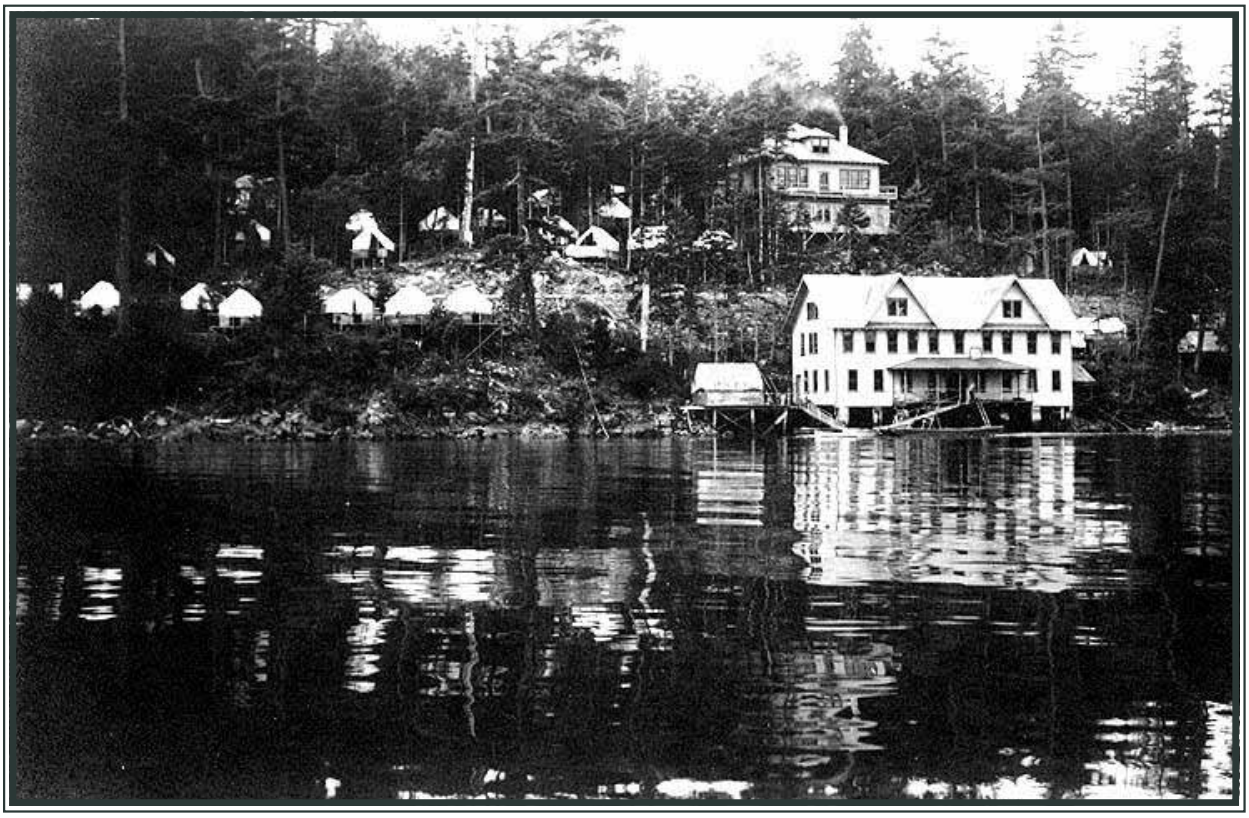
Waterfront Activities

In addition to the variety of waterfront lodging options, Western Washington boasts a diverse array of water-related recreational activities. Whale-watching tours operate throughout the region, with companies based in Seattle, Anacortes, the San Juan Islands and Grays Harbor. Boat rental facilities are available in many waterfront communities and include both powerboats and man- and oar-powered vessels, ranging in size from multiple-passenger vessels to single-person kayaks. Recreational fishing is also a popular activity in the region, with many public fishing piers available.

[23] William Dietrich, "A Century with Kids," *The Seattle Times*, June 9, 2006.

MARINE SCIENCE





Undated image of the Friday Harbor Laboratories. Image courtesy of UW Special Collections (Image No. UWC1570).

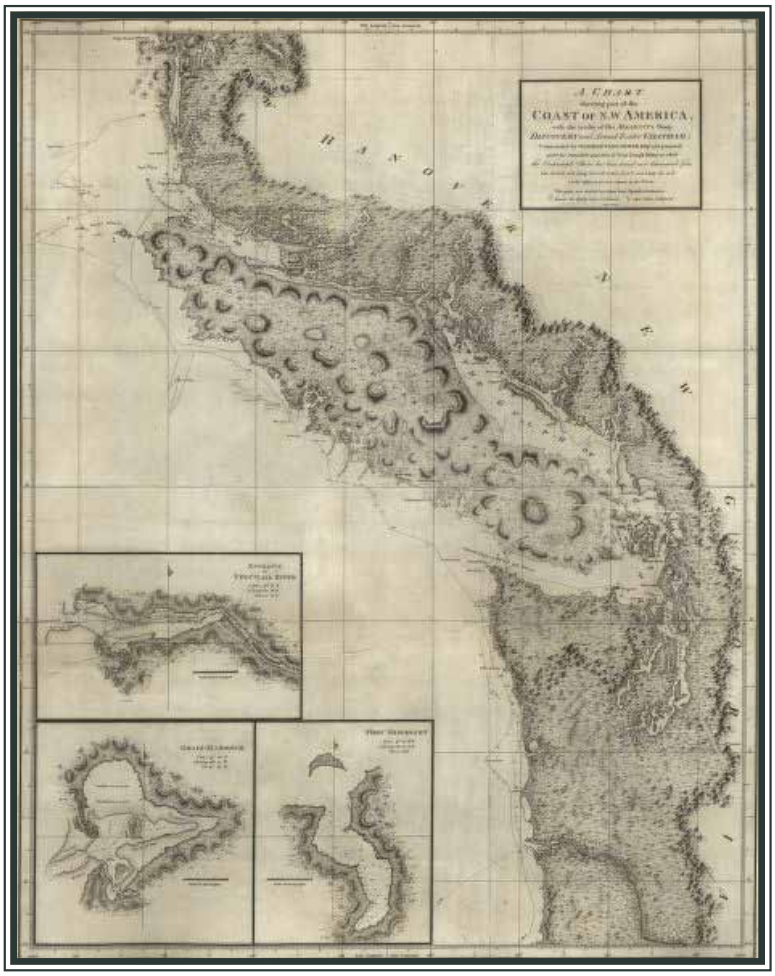
Voyages across the great spans of the world's oceans began during the Renaissance period with mariners like Magellan, Balboa, and Columbus sent out by European monarchs to find new riches and expand trade routes. By the dawn of the 17th century, the Spanish and Portuguese had already established vast trading empires as the Dutch, French, English and Russians began to broaden their own territory. This period also saw the emergence of the Scientific Revolution and Age of Enlightenment, and by the 18th and 19th century this meant an increased focus on information gathering during explorations. These expeditions included not only experienced sailors, but also cartographers to map and chart new territory, biologists and botanists to catalogue new specimens, and even artists to illustrate all of their new discoveries. This tradition of scientific exploration persists in the Pacific Northwest, as scientists continue to study and document both the region's unique marine landscapes and environmental changes through university-based research stations, wildlife refuges and public educational facilities. In addition to a continued focus on the exploration aspect of research, scientific inquiry in the region has expanded to include environmental stewardship efforts, with scientists measuring the different environmental impacts humans have made on the region, from water pollution to erosion, and developing appropriate responses.

Voyages of Discovery—Scientific Explorations

By the time of British Captain James Cook's third voyage, which sailed from Plymouth on July 12, 1776, maritime voyages had shifted their focus from merely expanding territorial claims to acquiring new information about geography, the natural world and other cultures. This methodology continued to dominate the world's maritime explorations through the end of the 18th century and into the next, culminating with the United States' financing of the Great United States Exploring Expedition, led by Charles Wilkes.

Captain James Cook led three maritime voyages between 1768 and his death in 1779. His expeditions produced a great number of maps and charts of previously unexplored areas of the Pacific Ocean. Cook was the first to include full-time scientists within his crew, and by his third and final voyage Cook employed scientists from numerous fields; he also hired a group of naturalists to comprise a natural history corps, which included artists to document any found artifacts or specimens.

Explorations of the Pacific Northwest continued after Cook's final voyage, with Britain, Spain, and Russia all converging in the region during the latter portion of the 18th century. Although American expeditions did not arrive on the Pacific Coast until the early 19th century, the American fur trade reached the region as early as 1788, with parties led by Captain John Kendrick aboard the *Columbia* and Captain Robert Gray aboard the *Lady Washington*. President John Quincy Adams recognized the importance of global scientific expeditions, particularly for commercial growth with an influx of new resources, and wanted to establish an American program to rival those of European nations.[1]



A 1798 chart depicting the routes of Vancouver. Chart courtesy of the Library of Congress, Geography and Map Division.

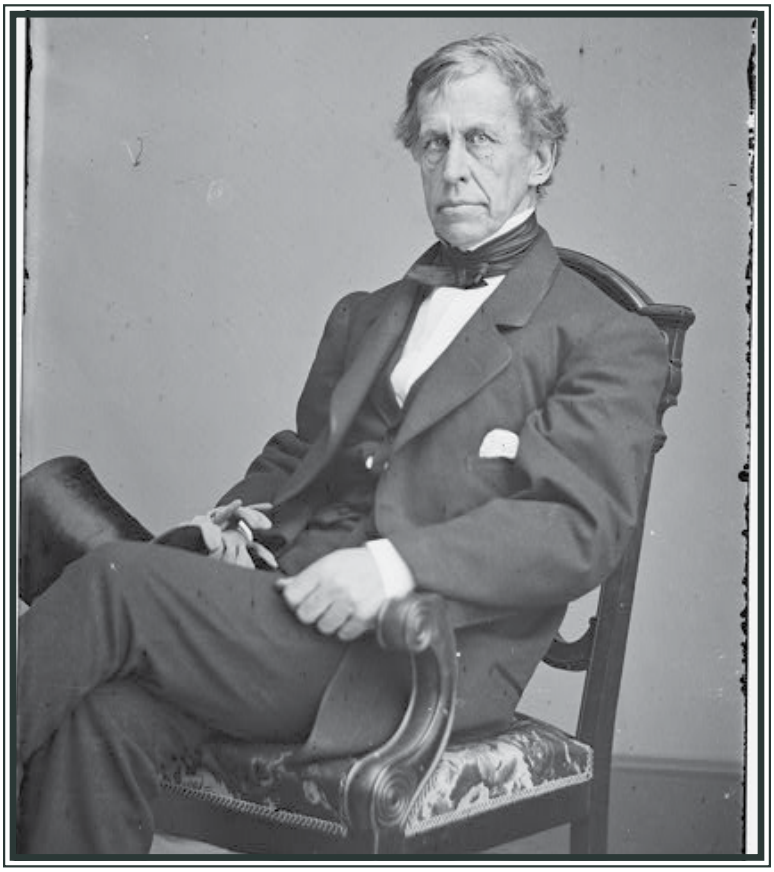
After difficulty in securing Congressional financing for a full-fledged expedition, President Andrew Jackson promoted a bill to finance an expedition that passed through Congress in May 1836. Sent to England to purchase the necessary instruments, charts, and other materials for the voyage, Lieutenant Charles Wilkes returned with the largest collection of scientific instruments and foreign charts assembled in the United States at the time. Wilkes became the commander of the expedition in 1837 following the resignation of Commodore Thomas ap Catesby Jones.

The Great United States Exploring Expedition, commanded by Wilkes, left Virginia on August 18, 1838, and consisted of the sloops-of-war *Vincennes* and the *Peacock*, the brig *Porpoise*, the storeship *Relief*, and two schooners, the *Seagull* and the *Flying Fish*. The Wilkes Expedition sailed to Antarctica, then sailed to the South Pacific and surveyed the islands before heading north to the coast of the Pacific Northwest. The U.S. Expedition primarily focused on charting the seas and featured only a small contingent of scientists, which included Professor James Dwight Dana of Yale (mineralogist); Dr. Charles Pickering (ethnologist); Horatio Hale (philologist); Titian Peale (naturalist and artist); William Rich and William D. Brackenridge (amateur botanist and horticulturalist, respectively); John Pitti Couthouy (conchologist). However,

[1] William H. Goetzmann, *New Lands, New Men: America and the Second Great Age of Discovery* (New York: 1986), 266.

when the expedition party arrived back on the East Coast, they returned with more than 160,000 specimens for the nation's museums and scientific facilities. Sadly, the vast number overwhelmed these institutions and over the years many were lost or destroyed due to improper storage and display.[2]

The charts created as a result of the Wilkes Expedition greatly expanded the nation and the world's knowledge of the Pacific Coast, with more than 280 islands, 800 miles of Oregon Coast, and 100 miles of the Columbia River surveyed. Additionally, the expedition amassed an extensive collection of specimens from the voyage, with a noteworthy assortment of pressed plants. Ultimately, the Expedition inaugurated a new emphasis on scientific research and exploration in the nation, and prompted the United States government to begin to develop future management strategies.[3]



Circa 1860-61 image of Charles Wilkes, commander of the U. S. Exploring Expedition. Image courtesy of the Library of Congress.

Voyages of Discovery to the Pacific Northwest not only expanded the nation and the world's knowledge of the region, but launched a commitment to scientific endeavors still prevalent in the Northwest. For more information on early European and Euro-American exploration of the region, see the section **"Voyages of Discovery" on page 165**.

Academic Research in Marine Science

Marine-related scientific research continues in the Pacific Northwest, with universities such as the University of Washington (UW) and Seattle Pacific University (SPU), providing hands-on laboratory experience for their students in the unique environment of the region's marine coast. These research stations encompass studies on marine wildlife and habitats, ecosystems, ocean currents and tides, mapping, and the region's changing landscape due to the effects of erosion and pollution.

[2] Goetzmann, *New Lands, New Men*, 288.

[3] Herman J. Viola and Carolyn Margolis, *Magnificent Voyages: The U.S. Exploring Expedition, 1838-1842* (Washington, D.C.: Smithsonian Institution Press,1985), 25.

Friday Harbor Laboratories—University of Washington

Organized, university-backed field research can be traced back to 1903 when University of Washington Professor of Zoology Trevor Kincaid searched for a site in the Salish Sea to establish a marine biology field station, selecting Friday Harbor on San Juan Island. UW Botany Professor Theodore Christian (T.C.) Frye joined Kincaid and together they taught students at the station through 1910. The station received its first class of students on June 15, 1904. Using a cabin south of Friday Harbor that was loaned to the station by Captain Warbass, students slept in tents and spent nearly each day outside, exploring the islands or working at the station's outdoor laboratory. Their field studies focused on the collection and identification of biological specimens. By 1906, the field station moved to an abandoned Pacific American Fisheries (PAF) cannery in the heart of downtown Friday Harbor, where the station operated until 1908.[4] The larger site allowed for processing specimens as well as an indoor space for class instruction.[5]

Image of Dr. Trevor Kincaid, the first director of the Friday Harbor Laboratories (or Puget Sound Marine Station). Image courtesy of the Washington State Archives.

The sale of the cannery building led to the selection of a new site for the field station, on four acres of land donated by Mr. Andrew Newhall in 1909. The Washington Legislature appropriated funds for a new building and equipment for the laboratory. In the meantime, the station split their time between makeshift buildings on the property and the Washington State University (Washington State College at the time) biology summer school at Olga, on Orcas Island. The state, however, allowed the lease on the land at Olga to lapse after that summer, unwilling to fund two marine research stations in the San Juan Islands. As a result, the UW opened the station to researchers and students from other institutions.

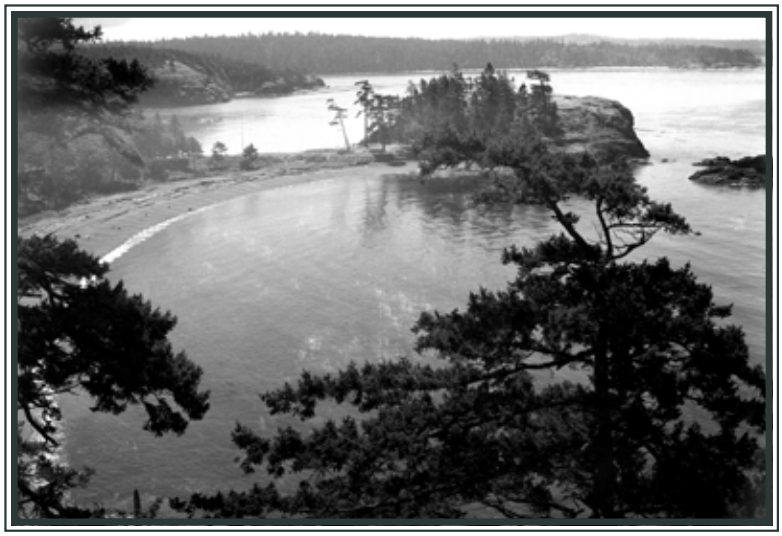
In 1910, appointed the first official director of the Puget Sound Marine Station, Trevor Kincaid took over full leadership and responsibility for the station. The new building was built during the late spring and early summer of 1910, and the completed building stood two-and-a-half stories tall, hovered over the water on concrete piers, and featured a lecture room, laboratory rooms, two darkrooms, an office, and

[4] The field station was briefly located at this site between 1906 and 1908. The location is currently the site of the modern Cannery Landing shopping pier, just south of the present ferry landing.

[5] Claudia E. Mills and Colin O. Hermans, "Historical Centennial Timeline for the University of Washington's Friday Harbor Laboratories: 1903-2005," *Friday Harbor Laboratories*, last modified November 2010, http://faculty.washington.edu/cemills/FHLTimeline.html.

a storeroom. The 1910 summer session was so successful, it led to discussion of maintaining a year-round educational facility.

In 1914, Kincaid resigned as the Director of the Puget Sound Marine Station and the UW appointed T.C. Frye as his replacement. Frye served as director from 1914 to 1930. During WWI, the UW changed the station's name to Puget Sound Biological Station. Due to the terrain of the station's site and its proximity to the cannery, UW sought a new site for the station and selected the former military reserve at Point Caution (or Military Point). In 1916, the Regents of the University of Washington applied to the U.S. War Department for it to cede the 484-acre tract of land to the University to relocate the marine station. A 1921 Act of Congress transferred ownership of the land to the university and construction of the new station (in its current location) began in 1923.[6]



1936 view of Rosario Beach. An ongoing university-operated student research facility since its acquisition by Walla Walla University in 1954, the **Rosario Beach Marine Laboratory** is located at Rosario Beach near Deception Pass in Skagit County. A summer-based field station, the laboratory provides students with research experiences in biology, ornithology, and marine ecology in Washington's Salish Sea ecosystem. Image courtesy of the Washington State Digital Archives.

The station continued to expand its class offerings under Frye's leadership, which continued until 1930, the same year the station became part of the University of Washington Oceanographic Laboratories. Thomas Gordon (Tommy) Thompson, a chemist, took over the position. By 1932, the station launched a floating laboratory for the Oceanographic Laboratories, the 75-foot motorship *Catalyst*.

When the U.S. entered WWII, Director Thompson took a leave of absence to join the war effort, leaving Assistant Director Lyman Phifer in charge of the station. In 1942, the U.S. Coast Guard used the station to train servicemen, and the lab buildings were converted to use as barracks. The *Catalyst*, also taken over by the government as part of the war effort, patrolled the Aleutian Islands. In February 1946 the station returned to full-time use as a marine and biological laboratory and continues to provide University of Washington students with hands-on field experience today.

Rosario Beach Marine Laboratory—Walla Walla University

Another example of academic field research can be found at Walla Walla University's Rosario Beach Marine Laboratory facility at Rosario Beach near Deception Pass.

[6] Mills and Hermans, "Historical Centennial Timeline for the University of Washington's Friday Harbor Laboratories."

Walla Walla University and Department of Biological Sciences Chairman Dr. Ernest S. Booth sought a permanent site for the school's outdoor summer school for study of the marine environment, so between 1947 and 1954, classes were held at an old cannery west of Anacortes. Though the cannery site was affordable, the school continued to search for a more suitable and permanent site. In 1954, the school, then Walla Walla College, purchased the former Rosario Beach Resort on the southwestern shores of Fidalgo Island. The resort, established in the early 1920s by Henry Graham and his son John, included a series of beach cabins for rent and a store.

The site has undergone extensive alterations since its acquisition by the school, particularly with the addition of new laboratory facilities, a dining/classroom complex, and cabins. However, the cabins first constructed for the beach resort in the 1920s continue to be used by students. Despite these changes, the site continues to host Walla Walla University students, providing instruction to students in the fields of biology, ornithology and marine ecology.[7]

National Oceanic & Atmospheric Administration (NOAA)—Western Regional Center

When the National Oceanic and Atmospheric Administration (NOAA) formed in 1970, it brought three preexisting agencies together—the United States Coast and Geodetic Survey, the Weather Bureau, and the Bureau of Commercial Fisheries—under one organizational department. Though NOAA was a more contemporary establishment, the former agencies now comprising it have deep roots in the federal government and were established in the 19th century: the United States Coast and Geodetic Survey came into existence in 1807, while the Weather Bureau and Bureau of Commercial Fisheries started in 1870 and 1871, respectively. NOAA's Western Regional Center offices, located on Seattle's Sand Point, oversees NOAA operations in the region.

Pacific Coast Survey

Originating in 1807, the U.S. Coast and Geodetic Survey has sought to produce accurate charts of our nation's coastline and harbors and has also conducted geodetic surveys domestically and internationally. The first survey of the Pacific Coast was conducted by Lieutenant Commander William P. McArthur and Lieutenant Washington A. Bartlett of the Coast Survey between 1849 and 1850. First arriving in California, the survey set out for the coastline of the Pacific Northwest in April 1850.

[7] Jim Nestler, "Rosario Beach Marine Laboratory History," *Rosario Beach Marine Laboratory*, accessed April 18, 2011, http://www.wallawalla.edu/academics/areas-of-study/undergraduate-programs/biological-sciences/rosario-beach/history/.

During the summer of 1850, McArthur and Bartlett traveled throughout the waters of Puget Sound aboard the steamer Carolina surveying along the way.[8]

Following the Pacific Coast Survey, McArthur made location recommendations to the Superintendent of the U.S. Coast Survey, A.D. Bache, for the construction of lighthouses to guide navigation. McArthur recommended two sites on the Washington coastline: New Dungeness and Cape Flattery. At New Dungeness, McArthur stated, "On the extremity of this point, I would recommend a light-house of the first power to be built; the shaft to be not less than 80 feet in height. Thus situated, it would guard navigators against the spit, as well as point out the anchorage."[9] For Cape Flattery, McArthur recommended a lighthouse to be constructed on the "Tatoochi Island" (Tatoosh Island), just off the northwestern tip of the Cape Flattery. McArthur reasoned, "To vessels bound from seaward, a light-house on this island would be of much assistance. It would enable them to enter the straits, when the absence of a light would frequently compel them to remain at sea till daylight."[10] McArthur also noted the increased volume of maritime traffic in the region and the need for revenue law and tariff enforcement.

NOAA WESTERN REGIONAL CENTER – SAND POINT CAMPUS

Although NOAA can only trace its history on the northwestern shore of Lake Washington at Sand Point back to 1977, the Western Regional Center's facility is located on the site of an old Naval Air Station. The center currently utilizes two former aircraft hangars and the original control tower building in addition to newer buildings constructed on the site. The adjacent Naval Air Station (NAS) Seattle Historic District is listed in the National Register of Historic Places.

Limited in-depth documentation of the Pacific Coast existed prior to the Pacific Coast Survey of 1849–1850, other than the charts compiled by explorers such as Wilkes and Vancouver. The Coast Pilot, put out by the United States Coast Survey in 1869, documents the Pacific Coast from the southern boundary of California to the northern boundary of the [then] Washington Territory, totaling more than 3,120 miles, 1,738 miles of which included the coastline and islands of Washington as well as the shores of Puget Sound.[11] This record carefully lists community locations by geographic coordinates and discusses changes to the landscape that have occurred since the last charts were compiled. The pilot also lists soundings taken by the surveyors, tide schedules, and the topography of the coastline.

Northwest Fisheries Science Center

The National Marine Fisheries Service, formerly the Bureau of Fisheries, comprises another aspect of NOAA and can trace its origins back to 1871. It manages living

[8] Lewis A. McArthur, "The Pacific Coast Survey of 1849-1850," *The Quarterly of the Oregon Historical Society*, March 1915, 257.

[9] McArthur, "The Pacific Coast Survey of 1849-1850," 271.

[10] McArthur, 271-272.

[11] George Davidson, *Pacific Coast: Coast Pilot of California, Oregon, and Washington Territory* (Washington, D.C.: Government Printing Office, 1869), 3.

NORTHWEST FISHERIES SCIENCE CENTER

The National Marine Fisheries Service operates a research laboratory, the Northwest Fisheries Science Center, in Seattle. First established in 1931, the marine research facility is located on the Montlake Cut between Lake Union and Lake Washington. Although the laboratory includes a series of buildings, the first building on the site, the West Wing, was designed by John Ward, Sr., in the Art Deco style and was the first federal fisheries building constructed on the West Coast.

marine resources and their habitat within the United States and its Exclusive Economic Zone (water three to 200 miles offshore) through conservation and protective measures. This agency, comprised of six regional offices and eight councils, predicts the nation's fish stocks, supervises fishery and fishing practices, and seeks to recover protected marine species while balancing commercial and recreational needs.

One of six regional offices, the Northwest Fisheries Science Center (NWFSC) arrived in Seattle in 1931, when the government relocated a research laboratory from Stanford University to the center's current location at Montlake. The new research facility continued studies on Northwest salmon and began studies on other regional fish while the U.S. Army Corps of Engineers began plans for a series of dams on the Columbia River to harness its hydro-electric power. The Montlake laboratory sought to understand the life cycle of Northwest salmon, particularly in light of the impact dam construction would have on their migration.

The laboratory's scope of research expanded when it acquired the *John N. Cobb*, a modern research vessel, in 1949. With it, the NWFSC began to study other fish, like cod and Pollock. In the 1960s, the NWFSC made its first venture into aquaculture, launching a new site near Manchester to cultivate salmon. During the 1970s, as the Bureau of Fisheries reorganized under the umbrella of NOAA, the center shifted focus from "the exploration of new fisheries...to the management and protection of existing marine resources."[12] Both the Montlake and Manchester facilities continue their research in marine ecosystems here in the Pacific Northwest.

National Weather Service—Seattle

The Weather Bureau was voted into being in 1870 by a joint Congressional resolution, signed by President Ulysses S. Grant. The Army Signal Service within the War Department operated the bureau, making systematic and synchronized weather observations from various stations. The Weather Bureau continued under the War Department until 1891 when it came under the purview of the Department of Agriculture, where it operated until 1940. Originally created to aid in maritime navigation, the bureau's move to the Department of Agriculture demonstrated its value to inland travel and farmers.[13] The Weather Bureau's specializations include

[12] Northwest Fisheries Science Center, Celebrating 70 Years of Cutting Edge Fisheries Research (Seattle, WA: Northwest Fisheries Science Center, 2002), 13.

[13] Gustavus A. Weber, *The Weather Bureau: Its History, Activities and Organization* (New York: D. Appleton and Company, 1922), 6.

weather observations and forecasts, climatology work, marine and agricultural meteorology, and weather-related road conditions, in addition to river observations and flood warnings. The Weather Bureau also owned and operated many telegraph and telephone lines to maintain communication with outlying and isolated stations.

View of the Northwest Fisheries Science Center's Manchester location. Image courtesy of NOAA.

During the Department of Agriculture's maintenance of the program, "weather forecasters began using more sophisticated methods including surface weather observations; kite experiments to measure temperature, relative humidity and winds in the upper atmosphere; and later, airplane stations."[14] The Weather Bureau was transferred to the Department of Commerce in 1940, in recognition of the service's inherent value to commerce, particularly with advances in technology and a greater accuracy in forecasting. The Weather Bureau was renamed the National Weather Service when it was reorganized under NOAA within the Department of Commerce in 1970.

The National Weather Service continues to operate throughout the nation, providing Americans with local and regional forecasts and severe weather alerts. Washington State is home to two regional weather forecast offices, in Spokane and Seattle.

Environmental Impacts of Euro-American Settlement and Expansion

Water defines the landscape of Western Washington, from the rugged coastline of the Pacific Ocean to the complex network of harbors and bays that comprise the Salish Sea. This natural environment has played a significant role in the lives of Pacific Northwest inhabitants and their activities throughout pre-history and history. Early on, the sea teemed with marine life, providing an abundant harvest for the region's native peoples. However, the arrival of Euro-Americans, who saw the region's natural resources as commodities, transformed the landscape "to fit their needs, desires, and visions of what the land should look like and what it should provide," according to Eric Ewert.[15] Loggers cleared forests for timber and to cultivate

[14] National Weather Service Public Affairs Office, *NOAA's National Weather Service Celebrates 140th Anniversary*, accessed April 18, 2011, http://www.weather.gov/pa/history/140anniversary.php,

[15] Eric C. Ewert, "Setting the Pacific Northwest State: The Influence of the Natural Environment," in *Northwest Lands, Northwest Peoples: Readings in Environmental History*, ed. Dale D. Goble and Paul W. Hirt (Seattle, WA: University of Washington Press, 1999), 4-5.

the land for agriculture. Fishermen harvested fish and shellfish for profit, depleting the once abundant supply. As scientists and environmentalists explore the changes to the natural landscape from human settlement and industry, debate surrounds the relative success or value of these modifications.

Undated image of a ship loaded with lumber at Port Blakely Mill Company. Image courtesy of the Washington State Digital Archives.

Logging, one of the first industries to so dramatically alter the landscape both physically and visually, quickly became Euro-Americans' primary venture. Settlers cleared forest land to create open space for agriculture, and used the timber for their homes and barns. Systematic logging and timber processing arrived in 1853 when Henry Yesler started the first steam-powered sawmill on the Puget Sound, in present-day Seattle. Pope and Talbot's mill went in at Port Gamble in the same year, soon followed by other mills in Seattle, Alki (now part of Seattle), and Port Ludlow. Logging required extensive physical labor, with loggers utilizing an ax and hand saw, skid roads, and animal power. Railroad construction provided another transportation method for shipping lumber, increasing the number of logging operations in the region, particularly following the arrival of Frederick Weyerhaeuser. Logging operations accelerated still further during WWII due to wartime need as well as the advent of new machinery, such as the chainsaw and logging trucks.

While logging still functions as a significant industry in the region, challenges from the environmental community have led timber companies to begin rethinking their forest management practices, emphasizing the renewable nature of forests rather than simply their value as a commodity.[16]

In addition to the region's forests, Euro-Americans also saw the economic value of the vast number of marine species concentrated in the Pacific Ocean and the Salish Sea. They harvested salmon as early as 1823 and only expanded, as companies began to pack and ship their catch for distribution around the nation and world.[17] The fishing and salmon industry falsely relied on an infinite supply of goods and exhausted the resource through overfishing. Silt deposited in riverbeds from log-

[16] Arthur R. Kruckeberg, "A Natural History of the Puget Sound Basin," in *Northwest Lands, Northwest Peoples: Readings in Environmental History*, ed. Dale D. Goble and Paul W. Hirt (Seattle, WA: University of Washington Press, 1999), 68.

[17] Carolyn Merchant, "The Changing Ethics of Ecosystem Management," in *Northwest Lands, Northwest Peoples: Readings in Environmental History*, ed. Dale D. Goble and Paul W. Hirt (Seattle, WA: University of Washington Press, 1999), 295.

ging and agricultural run-off also contaminated salmon spawning grounds, further limiting the number of salmon available each year. Competition came from the introduction of non-native species into the region. Land-use change, from forest to agriculture, not only altered the visual elements of the landscape but affected the natural habitats of local wildlife.

Environmental Stewardship

Ultimately, the history of Western Washington cannot be divorced from the region's physical landscape. The sense of place found in Washington is a product of the events that have happened here, the juxtaposition of the dramatic physical landscape with modern cities, and the people who choose to live here. Although many of the industries established by Euro-American settlement were insensitive to the environment, it is still valuable to recognize their role in shaping the present-day landscape as we continue to learn about and understand the natural history of the region.

Supplemental Material

CASE STUDIES

The following two case studies stem from activities at Gig Harbor. Work inventorying properties and public outreach brought us in contact with ongoing local efforts to find solutions to preserve and utilize their legacy of maritime properties and encourage ongoing maritime uses.

These two examples involve most variables from materials, private and public ownership, local certified government, agency involvement, adaptive reuse and land use changes that can be expected to be encountered at most maritime communities within the survey area. The work at Gig Harbor, in particular the collaborative efforts of all entities involved, represents emerging best practices for meeting environmental requirements and maintaining local practices and heritage.

Skansie Net Shed

The process and approach related to undertaking in-kind repairs to the **Skansie Net Shed** is an excellent example of jurisdictional cooperation.

View of the Skansie Netshed looking towards the Harbor. Image courtesy of Artifacts Consulting, Inc., 2011.

Built ca. 1910 along the western shore of Gig Harbor Bay in the heart of Gig Harbor, the small, one-story net shed stands on pilings over the water. An associated one-and-a-half story brick house stands just upland from the net shed. The site also retains two deep water mooring pilings and carriage structure for hull cleaning that operated in conjunction with the net shed.

The property played an integral role in the development of the Gig Harbor waterfront and commercial fishing in Puget Sound. The Skansie brothers were an important shipbuilding and commercial fishing family in Gig Harbor. The property retains all the components of a small commercial fishing operation including an upland residence to house the fisherman and their family, an overwater net shed for storage and maintenance of the fishing nets, a boat carriage for vessel repair, a net yard for net maintenance, deepwater moorage pilings for mooring the operation's fishing vessels, and a concrete bulkhead creating a clear definition between the shore and water. The house demonstrates the masonry skill of its builder, Andrew Skansie, and its masonry structure sets it apart from the rest of the community's predominately wood-framed residences. The net shed is an excellent example of vernacular architecture and a building type unique to small-scale commercial fish-

ing during the 20th century. The net shed is one of seventeen extant net sheds in Gig Harbor and these structures remain "the only surviving architectural connection between the community and what was once one of the most successful fishing fleets on the west coast."[1]

View of the Gig Harbor waterfront with the Ancich-Rainier Netshed in the foreground. Image courtesy of Artifacts Consulting, Inc., 2011.

The city purchased the land containing the net shed and the associated upland residence for public interpretive purposes. Deep water pilings associated with the net shed reside on state owned aquatic lands for which the city has a long-term lease. The City Historic Preservation Officer and Department of Natural Resources worked to retain the deep water pilings during environmental driven piling removal and clean-up activities in the harbor. With funding from a Washington State Historic Preservation Grant the city worked with the National Park Service to complete **Historic American Engineering Record documentation** of the historically significant net sheds within the harbor. The city listed the property to the local register and is currently working on listing the property to the NRHP. The City won a grant to stabilize and preserve the net shed and is currently working with DNR, DOE, and Corps of Engineers on in-kind materials for piling replacement and decking repairs. Work is anticipated to begin during the summer of 2011.

The net shed's pilings were placed by hand. During a low tide holes would be excavated in the shoreline to at least two feet in depth and the pilings tilted up into the holes. Most of the other net sheds and pier installations on the harbor used driven pilings. Consequently the Skansie net shed used more pilings and of a shorter length. Timber bents run across the pilings providing the supporting structure for the wood plank decking. The construction methodology of many, small, shallow pilings is defining to the character of the net shed. Likewise the planking runs perpendicular to the shoreline due to the piling and bent placement. On most other net sheds and piers the planks run parallel to the shoreline.

Due to these attributes in-kind replacement of the pilings was essential as it affected a series of other structural elements as well as the overall character of the net shed. Maintaining functional and visual character of the working deck necessitated in-kind replacement of the planking, at least along the outer edges. Treated woods could not be used as they adversely affected the natural environment, and often differed visually due to markings associated with the preservative treatment process.

[1] Skansie Net Shed, HAER no. WA-186-M; Todd Croteau, project leader/photographer; Shelly Leavens, Historian (Washington, D.C.: National Park Service, 2009).

Modern materials such as composites and recycled materials lacked the functional and visual character of the original wood decking.

Salvaged old growth Douglas fir planking from agricultural buildings that have collapsed or must be taken down is providing an alternative. The old growth materials provide the performance and visual character and do not adversely affect the natural environment. Reuse of these materials also keeps them out of land fills. As with piers along the harbor, the use of metal grating in the central portion of the deck with wood planking around the perimeter maintains the overall visual character while allowing day lighting down to the water to comply with environmental needs.

This process builds off a similar program being tested by the state and the **Washington Trust for Historic Preservation** in association with a **Heritage Barn Grant Program** to direct salvaged barn materials back into working agricultural heritage barns.

Historic Working Waterfront Environment

Land use designation at the local level helps other agencies understand local priorities and needs allowing them to help local government meet those needs. This applies to working waterfront areas. Undertakings at the local level afford the strongest public participation component and establish local stakeholders in making decisions about their community.

The City of Gig Harbor's recent designation of a small section of Gig Harbor as working waterfront provides the best local example of these efforts. This designation helps in defining waterfront character, view corridors, and benefits small local industries and heritage tourism. This provides a model for other communities to proactively manage their historic maritime use assets to benefit multiple aspects of their community.

The designated area encompasses the Eddon Boatyard including the **Eddon Boatyard Marine Railways**, **Eddon Boatyard Pier,** and several net sheds carved into the protected shoreline of Gig Harbor and shaped by the functions of a boat building shop constructed around a small marine railway, over water net sheds built, and their associated family-owned homes and working docks. These resources typify Gig Harbor's maritime connections to commercial fishing vessels, working boats and pleasure craft. As identified in the 2006 *Eddon Boatyard Historic Structures Report*, the cluster of family-owned homes and working docks that surround the boatyard reinforces its sense of place and historical context. For generations, Gig Harbor was ringed with working docks and tied up gill-netters, barges, and a variety of other working boats. Between the floating docks were small repair yards, storage sheds, boatworks, chandleries and family houses, many of which remain today.

The following links provide background on the designation:

Shoreline Master Program submitted to the Washington State Department of Ecology for review. For a description of the Historic Working Waterfront designation see page 26. A map of the designated area follows on page 28.

Inventory and Characterization Report refer to chapter 3.7 Historical/ Cultural Resources.

Shoreline Master Program Update provides links to the new designation "Historic Working Waterfront".

COMMUNITY MAPS

In order to illustrate the intrinsic connection between tourism and maritime heritage, community maps were developed for the following communities:

- Anacortes
- Bellingham
- Everett
- Friday Harbor
- Gig Harbor
- Grays Harbor
- Port Townsend
- Seattle
- Tacoma

These maps plot locations for properties included within this survey and have been incorporated within community maritime brochures.

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

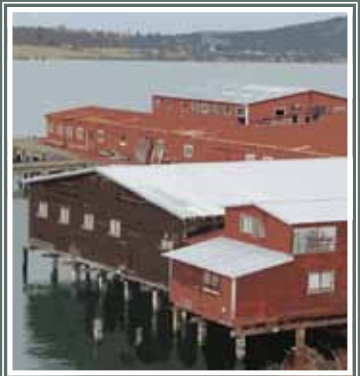
An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

Sebastian-Stuart Cannery, courtesy of Artifacts Consulting, Inc., 2011

Back Cover Image:

Anacortes waterfront, courtesy of Artifacts Consulting, Inc., 2011



This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

Anacortes

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

Anacortes is located on Fidalgo Island and serves as the gateway to the San Juan Islands. Prior to European and Euro-American exploration of the region, the Samish and Swinomish people lived on the island. The first Euro-Americans settled on the western shore of northern Fidalgo Bay in ca. 1865, and Amos Bowman officially named the community Anacortes in 1877 with the establishment of a post office. Anacortes grew slowly, with only 200 residences by January 1890; however, speculation that Anacortes could become the terminus for the transcontinental railroad had the population soaring to 2,000 by mid-March 1890.

Although not selected as the railroad terminus, Anacortes pursued other economic interests, including fishing and lumber. During the 1890s, Anacortes established itself in the salmon canning and codfish-curing industries, with at least a dozen fish-processing plants by the 1900s—at one time it boasted nearly a quarter of the salmon canneries in Puget Sound. By 1937, Anacortes established the first tuna cannery in the Sound, the Sebastian Stuart Company (formerly the Salina Fisheries Company Cannery).

Industry expanded in Anacortes, particularly on the waterfront where businesses took advantage of shipping and rail connections. Lumber soon became the second major industry—Anacortes contained 6 shingle mills and 5 saw mills by 1903. Companies like the Anacortes Box and Lumber Company (1905), E.K. Wood Mill (1923), and the Anacortes Pulp Mill (1925) dominated the landscape. Other industries grew in the community in the mid-twentieth century when many of the canneries and lumber-related businesses closed, such as refineries built by Shell and Texaco, marinas, and tourist-based operations, like whale-watching.

The Anchorage
The Anchorage building, built in 1900, became Marine Supply & Hardware under the ownership of E. "Mike" Demopoulous, an early Anacortes entrepreneur, in ca. 1913.

Curtis Wharf
Little remains of the once vibrant Curtis Wharf, a former hub of commercial and passenger maritime transportation. Built in 1903 by Melville Curtis, the wharf at one point included a feed mill, ice house, creamery, and several warehouses.

Robinson Fisheries Building
Built in 1912, the Robinson Fisheries Building was used as a codfish plant, one of the largest in Puget Sound. It is the only surviving plant of its kind in Anacortes. The building is now associated with Lovric's Marina.

Sebastian Stuart Company
Built in 1915, the now vacant Sebastian Stuart Company building originally served as a salmon cannery. In 1937, tuna canning operations were added in the facility, establishing the first tuna cannery in the Puget Sound.

W. T. Preston
Built in 1939 at the Lake Union Drydock in Seattle, the snagboat *W. T. Preston* cleared marine passages until her retirement in October 1981. Located in Anacortes, the *W. T. Preston* is a National Historic Landmark (NHL) and operates as a museum vessel.

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

The Ocean Hunter moored at Bellingham Bay, courtesy of Artifacts Consulting, Inc., 2011

Back Cover Image:

Old City Hall, now the Whatcom Museum, courtesy of Artifacts Consulting, Inc., 2011

This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

Bellingham

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

Bellingham served as a major industrial, education and distribution center for Northwest Washington. Visited in the 1790s by both Francisco Eliza and Captain George Vancouver, the name Bellingham Bay, assigned by Vancouver in honor of Sir William Bellingham, stuck. By 1852 the Roeder Saw Mill, along Whatcom Creek, was turning out lumber that was used to construct Fort Bellingham. In 1854 Captain Henry Roeder built the H. C. Page, a small schooner, for shipping local materials, including coal, to markets. The 1857 Fraser River Gold Rush brought speculation and more development. The mud tideflats were gradually platted, and by the early 1900s, developers began to infill the mudflat streets and dredge the Whatcom Waterway. By the 1890s salmon canneries abounded, including the Pacific American Fisheries Cannery, one of the largest operations in the world.

The small villages of New Whatcom, Sehome and Fairhaven united in the early 1900s to become Bellingham. Several boat builders operated in the city, including H. B. Kirby, Bellingham Marine Railway & Boat Building, and Westlake & Son. Morse Hardware Company and Northwest Hardware Company both served as ship chandlers.

Dock and wharf construction expanded with packing plants, saw and shingle mills, plywood, an industrial alcohol plant, and the largest sulfite pulp mill in the U.S. Shipyard construction during World War II produced auxiliary naval craft and cargo boats. The municipal dock at the head of the Whatcom Waterway provided an iconic point of arrival and departure for passenger ferries. Several steamship lines served the community, including the Pacific Steamship Lines and Puget Sound Freight Lines.

Whatcom County Courthouse
Built ca. 1858 by entrepreneurs Charles E. and Thomas G. Richards for use as a store during the Fraser River Gold Rush of 1858, the building became a courthouse when Whatcom County purshased it in 1863.

Old Grainery Building
Built in ca. 1928, the Old Grainery Building, located adjacent to the waterway and the northern tracks of the railroad, functioned as an egg production and distribution center for the Washington Egg & Co-Operative Poultry Association.

Reid Boiler Works
Built in 1912, the building houses the Reid Boiler Works. Founded in 1899, the company supplied boilers to Fairhaven houses and illustrates early industrial development in the community.

Morse Hardware Company
Founded in 1884, the Morse Hardware Company was the first wholesale firm in Bellingham. The company built this building in 1901 after establishing a successful trade to Alaska during the Alaskan and Klondike gold rushes.

Bellingham International Maritime Museum
In addition to on-site vessel restoration, the museum features exhibits on Pacific American Fisheries, Bellingham Shipyards, and Uniflite. For more information visit: www.bimm.us

336 A MARITIME RESOURCE SURVEY *For Washington's Saltwater Shores*

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

Image of one of many steel truss bridges around Everett, allowing road and rail traffic to pass over the area's numerous waterways, courtesy Artifacts Consulting, Inc., 2011.

Back Cover Image:

Building on the waterfront in Everett, courtesy of Artifacts Consulting Inc., 2011

ARTIFACTS

This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

Everett

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

As the first point where the Great Northern railroad reaches salt water, and with a branch line to the Northern Pacific, Everett grew quickly as a major shipping and transfer point. Overseas goods were loaded on trains for Midwest and East Coast destinations. Industry expanded along the waterfront, taking advantage of great shipping and rail connections. By 1904 the city boasted 10 saw mills, a paper mill, 12 shingle mills—the Clough-Hartley mill in particular would grow over the next decade to become one of the world's largest—2 flour mills, a smelter, one of the nation's only arsenic plants, a creosoting works, iron works and four foundries, as well as breweries and bottling works, creameries, and ice and cold storage plants for shipping perishable items.

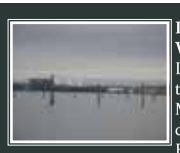
Fishing has long been an important part of Everett's maritime history and economy. Proximity to good fishing grounds, coupled with a sheltered harbor, provided secure moorage facilities and sheds for repairing and storing nets and fishing gear. Fish and oyster markets operated along Hewitt Avenue, just uphill from the harbor.

Several steamship companies, including the Pacific Steamship Co. and Alaska Pacific Co., made regular stops at Everett, helping to expand the city's role as a wholesale and distribution centers. Supporting this maritime commerce was a large steel shipbuilding plant and several boat yards, including Ole A. Pederson, Bayside Boat Works, and Everett Marine Ways Inc. The Bayside Hardware Company served as a ship chandler, supplying commercial vessels that stopped at Everett. By the 1950s the port could receive nine oceangoing vessels and ranked second in the state in shipping tonnage handled.

Hibulb Cultural Center
Scheduled to open in 2011, the Hibulb Cultural Center and Natural History Preserve's mission is to preserve, revive and interpret the culture and history of the Tulalip Tribes.

Fishing Vessels
Abundant fishing and the rapid growth of fish processing industries attracted early immigrants from Northern and Eastern Europe. Everett still acts as an active port for commercial fishing vessels such as the ones pictured.

Port of Everett
Created in 1918, the port has evolved over its long history. The deep-water port's multiple terminals continue to accommodate ocean-going trade vessels, including modern container ships, along with railroad traffic.



Industrial Waterfront
Looking northeast toward the Cascade Mountains, the industrial waterfront of Everett is still a defining part of the landscape. These buildings are part of a sawmill complex located with easy shipping access.

Snohomish River Bridge
This ca. 1920s steel truss pivot bridge was designed to rotate on its midpoint, highlighted by the bridge house, to allow water-based traffic to pass. The Everett vicinity has many historic bridges.

338

A MARITIME RESOURCE SURVEY *For Washington's Saltwater Shores*

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

Lime Kiln Lighthouse on San Juan Island, courtesy of Artifacts Consulting, Inc., 2010.

Back Cover Image:

American Camp, San Juan Island National Park, courtesy of Artifacts Consulting Inc., 2010

This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

Friday Harbor

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

Friday Harbor is located on San Juan Island, the second largest, but most populous, island in the San Juan Islands archipelago. Prior to European and Euro-American exploration of the region, the Northern Straits Salish people lived on the islands. European exploration of the islands occurred in the late 18th century, first by Spanish Captain Francisco de Eliza in 1791 and 1792, then by British Captain George Vancouver in 1792. The Treaty of 1846 established land south of the 49th parallel as held by the United States. Border disputes over the San Juan Islands between the U.S. and the British resulted in an 1859 confrontation on San Juan Island, known as the Pig War.

By the mid-1800s, the Hudson's Bay Company (HBC) had arrived on San Juan Island, importing sheep in 1853 to graze on prairie land on the island's southern tip. More HBC employees and settlers arrived on the island, many settling at the site of present-day Friday Harbor with its protected harbor. Friday Harbor became the county seat of the islands in 1873.

The communiy at Friday Harbor continued to grow and became incorporated in 1909. The harbor became a key shipping location for the island, with ships and steamers arriving to haul local produce, fish, lime, and timber back to the mainland. A bustling commercial corridor and a waterfront with large wharves and warehouses accommodated the growing seaport.

Competition from other markets led to a declining island economy through the mid-20th century. However, a thriving tourist industry has revitalized the community, bringing numerous visitors to Friday Harbor each year.

Jensens Shipyard Albert Jensen & Sons Shipyard opened in 1910. Since then, they have produced more than 150 boats and have long been known regionally for their quality work. It still operates as a boatyard and marina.

Spring Street Historic street corridor, running uphill from the ferry landing through the heart of old Friday Harbor. The street is lined with landmark buildings. Memorial Park is located at the base of the road at the intersection of Front & Spring.

Whale Museum The Whale Museum promotes stewardship of whales and the Salish Sea ecosystem through research and education. The museum is located in downtown Friday Harbor, 3 blocks from the ferry landing.

Friday Harbor Laboratories A marine biology field station for UW, the station has provided hands-on research experience to students since 1904. Although the station has had various locations on the island, it has remained a fixture in Friday Harbor.

San Juan County Courthouse Built in 1906, the San Juan County Courthouse replaced earlier temporary wooden buildings. Designed by W. P. White in the Second Renaissance Style and executed in red brick.

340 A MARITIME RESOURCE SURVEY *For Washington's Saltwater Shores*

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

The Julie Ann returning to a net shed in Gig Harbor, courtesy of Artifacts Consulting, Inc., 2010

Back Cover Image:

The Ancich-Rainier Net Shed, built in 1954, courtesy of Artifacts Consulting Inc., 2010

This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

Gig Harbor

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

In 1838 the United States launched a full-fledged expedition with the Great United States Exploring Expedition commanded by Lt. Charles Wilkes. The Wilkes Expedition extensively explored the bays and inlets of the Puget Sound and it was during this expedition that the bay of Gig Harbor received its name. One of the expedition's small boats, called the captain's gig, took shelter in the harbor during a storm, thus earning the bay its name of Gig Harbor.

Euro-American settlement of the Gig Harbor waterfront began to develop following the harbor's rediscovery by three fishermen –Samuel Jerisich, Peter Goldsmith, and John Farrago—seeking shelter in 1867. Of the three men who took shelter for a night in the harbor, Samuel Jerisich, a Slavonian, decided to return to settle there. At the time, a Nisqually village existed alongside a small creek at the head of the bay. Samuel Jerisich and his wife settled on the west side of the bay, building a small one-room cabin and living off fish and produce from their small farm. Other settlers soon arrived in the area, predominately Yugoslavian, German, and Scandinavian families, and settled close to the shore.

Gig Harbor developed around fishing and lumber. By the 1880s a saw mill was set up along the waterfront, and the city grew as the home port to large purse seiners following fish runs between Mexico and the Arctic. The harbor provided an important anchorage center for boat building and fishing net storage facilities. By the 1910s, regular steamer travel entered the bay, providing a connection with markets in Tacoma. A logging railroad and stage line connection with Burley also connected to the bay.

Skansie Net Shed One of the oldest net sheds in the community, the Skansie net shed was built by Andrew and Bertha Skansie for the family fishing operation ca. 1910. The Skansies used the large yard next to the net shed for stretching out their nets for repairs.

Morin Net Shed Martin and Mary Morin built this net shed for their family's fishing operation in the 1950s. The Morins used the net shed for repairing and storing their nets and moored their purse seiner, the *Defiance*, at the dock.

Thunderbird 1 The hull of Thunderbird 1, a plywood sloop designed by naval architect Ben Seaborn and built by Ed Hoppen, is on display at the Harbor History Museum in Gig Harbor. The sloop features a v-shaped hull allowing for the stiffness of multilayered plywood.

Eddon Boatyard Open to the public for tours, the restored Eddon Boatyard seeks to pass on maritime heritage through hands-on experiences, such as boatbuilding demonstrations and restoration projects. For more information visit: www.gigharborboatshop.org.

Washington Egg & Poultry Co-op Constructed in 1925 the building served as the warehouse for the farmer membership organization. In 1957, the Haub Brothers purchased the building and converted it to a commercial marina and other marine-related trades.

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

Vessels moored at Hoquiam, courtesy Artifacts Consulting, Inc., 2011.

Back Cover Image:

Social hall in Aberdeen, courtesy of Artifacts Consulting Inc., 2011

This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

Grays Harbor

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

Captain Robert Gray's entry into Grays Harbor aboard the Columbia in 1792 helped establish the U.S. presence and claim to the Oregon Territory, as well as providing the harbor name. Euro-American settlers arrived at the locations of present day Aberdeen and Hoquiam on Grays Harbor in the mid-1800s. Established as separate towns, over the years they grew together to form a single industrial and commercial center in Grays Harbor.

The fishing and lumber industry shaped the waterfront of Grays Harbor and spurred many ancillary trades. Fishermen operated in the Pacific and harvested shellfish from the bay. Industrial development and railroad connections arrived with the growth of the lumber industry. Smaller maritime related businesses migrated up rivers and the dredging of the harbor and tide flat infill solidified the link between ocean-going trade and city commerce. Communities developed along the hills overlooking Grays Harbor, with worker cottages along the base of the hills.

Fishing was an important early industry. In 1878 George Hume built the small Aberdeen Packing Plant, a fish cannery at Sam Benn's Point. By 1911 the addition of a clam cannery, and several specialty trades flourished including: Grays Harbor Packing Co., Pacific Fisheries & Packing Co., Sea Beach Packing Works, Inc., Wishkah Fish Co., Atlas Fish Company, McLane Fish Company and the Hoquiam Machine Works.

Lumber was an economic mainstay in Grays Harbor. By 1900 the Northwestern Lumber Company would become the largest plant on the West Coast. The mill supplied lumber to a shipyard and four woodworking and box factories.

Historic Waterfront
Located on Grays Harbor's protected waters, Hoquiam once had many shipyards like this one, building and repairing all sorts of vessels including large multi-masted ships.

Polson Museum
Built in 1924 for Arnold Polson and his bride, the Polson Museum now serves as a community history museum. Harbor history is interpreted through an extensive photo collection. Listed on the National Register of Historic Places.

Pakonen & Sons Boat Works
Built as the Chris Endressen Boatyard ca. 1900, the operation was sold in the 1940s and became the Pakonen & Son Boat Works. Excellent example of a family-owned, historic shipyard.

Breakwater Seafood Building
Built in ca. 1905, the former Breakwater Seafood Market is one of Aberdeen's oldest buildings. Originally a logging company office, it later became a seafood market. Damaged by fire in 2007, it is under renovation.

Goldberg Building
Built in 1910, this former industrial building reflects the early boom growth of Aberdeen and Hoquiam as mill towns, a result of nearby timber stands and access to water- and rail-based shipping.

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

Point Wilson Light; US Coast Guard/ automated, closed to public; current buildings from 1913 but original light activated 1879, courtesy Artifacts Consulting, Inc., 2011.

Back Cover Image:

Port Townsend Boat Haven, courtesy of Artifacts Consulting Inc., 2011

This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

Port Townsend

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

Known as the Key City of Puget Sound, Port Townsend was named in honor of Marquis of Townshend by Captain George Vancouver (1757-1798) in 1792. Vancouver identified Port Townsend as a safe harbor on the northeast tip of the Olympic Peninsula. Euro-American settlement occurred on the bay on April 24, 1851, with the arrival of Alfred A. Plummer (1822-1883) and Charles Bachelder. Additional settlers and their families arrived in the community and Port Townsend was appointed the county seat of Jefferson County upon its establishment in 1852. The community's population and significance continued to grow, particularly when the Washington Territory's Port of Entry moved from Olympia to Port Townsend in 1854. Following a petition to incorporate submitted by Port Townsend residents, the Washington Territorial Legislature passed an act incorporating the city of Port Townsend on January 16, 1860.

The city developed as an early point of lumber shipping to San Francisco and became the headquarters for the U. S. Customs Service once it was transferred from Olympia. By the 1910s the city also boasted the headquarters for the marine hospital service on the Salish Sea as well as a quarantine service and a deepwater harbor.

The maritime trade supported a shipwright and ship chandlers. Chandlers included Ship chandlers Jones & Crouten and the Olympic Hardware Company. Several steamship lines including Alaska Pacific Steamship Company, Alaska Steamship Company, Dodwell & Company, Hastings Steamboat Company, Pacific Coast Steamship Company made regular calls at Port Townsend. Boat builders included the Madison Street Marine Ways at the foot of Madison.

Hudson Point - Signal Tower
Built in 1941 by the U.S. Navy for use as a signal tower, parachute repair shop, and auditorium. In 1978 the buildng was converted into a sail loft and continues in use with maritime-related trades.

Hastings Building
The Hastings Estate Company constructed the building in 1889. The elaborate Queen Anne-style Hastings Building remains under Hastings ownership and continues to visually anchor Port Townsend's downtown.

Marine Science Center
Originally used as a warehouse and docking facility by Fort Worden, the building now houses the Port Townsend Marine Science Center aquarium exhibit. For more informaiton visit: www.ptmsc.org/

Port Townsend Post Office, Customs and Court House
The building, built in 1893, stands prominently on the bluff overlooking the harbor. Views from Union Wharf back illustrate the commanding presence of this building.

Quincy Street Ferry Dock
Built in 1947 by Olympic Ferries, Inc., the dock served as the ferry terminal for the Port Townsend—Keystone route. Although no longer in use, the structure remains a visually defining component of the waterfront.

346 A MARITIME RESOURCE SURVEY *For Washington's Saltwater Shores*

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

Sailboats moored on Lake Union, courtesy Artifacts Consulting, Inc., 2011.

Back Cover Image:

Working waterfront in Duwamish, courtesy of Artifacts Consulting Inc., 2011

ARTIFACTS

This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

Seattle

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

Seattle's sheltered deep water harbor and central location within the Salish Sea contributed to the city's growth as a major distribution center. By 1897 Seattle shipped more cargo than unprocessed materials. The Klondike gold rush cemented the city's already growing role as a supply point for Alaska. Residential neighborhoods were built on the hills overlooking tide flats. By 1890 the city boasted a multitude of boat builders.

Several ship chandlers supported commercial vessels making port of calls at Seattle. In 1893 the Great Northern Railway connected with Seattle via Everett, providing the city with a transcontinental link. The 1897 Yukon River gold rush ushered in a frenzy of activity along the waterfront.

In 1911 the State Legislature authorized the creation of the Port of Seattle. Over the next decade the port constructed two of the longest piers in the world to receive ships bound for Alaska and arriving from Asia. By 1914, the city had grown to become its own market in which imports outpaced exports. The ship canal locks, completed in 1916 and linking Lake Union with Elliott Bay, were second in size to the Panama Canal locks.

During World War I, more than 20 shipyards operated along the waterfront, and Harbor Island was created at the mouth of the Duwamish into an industrial center. Civil unrest followed the post-war economic slowdown and 1929 financial collapse, which led to several waterfront strikes. During World War II the shipyards expanded again to keep pace with wartime demand, producing supply tenders, aircraft carriers and cargo ships.

Pike Place Market
The market exemplifies a commercial center relying upon goods brought in by ship and rail for sale. The route along Western Avenue providing a link up the steep hill remains intact today maintaining the waterfront link.

Fishermen's Terminal
Built in 1913 by the Port of Seattle to house the local fishing fleet, Fishermen's Terminal still hosts many commercial fishing vessels as well as dining and shopping attractions. Located on Salmon Bay.

Chittenden Locks
Built in 1914-15, the Administration Building overlooks the Hiram M. Chittenden Locks (aka, Ballard Locks), which allow boats to pass between the saltwater of Salmon Bay eastward into the freshwater of Lake Union and Lake Washington.

Swiftsure
The Lightship "Swiftsure" is a National Historic Landmark. Formerly known as LV #83 or "Relief," this vessel never served at the Swiftsure Bank station, but it is similar to the types of vessels which formerly marked Umatilla Reef and Swiftsure Bank.

Alki Point Lighthouse
Built in 1913, this lighthouse marks the south end of Elliott Bay. Still in use by the Coast Guard, Alki Point Lightstation includes a lighthouse and two keeper's houses. Public access to this site is limited.

A HERITAGE RESOURCE SURVEY

Washington's unique maritime heritage encompasses a diverse breadth of stories and resources, including Native American canoe cultures, coastal communities, commerce and trade, navigation and lifesaving, and a rich shipbuilding industry that predates statehood. The heritage resource survey identified many of these key historic resources and their accompanying stories within the project boundaries to inform an overarching narrative of the area's maritime history. Property types surveyed included, but were not limited to: docks, marinas, wharfs, piers, net sheds, vessels, and shipyards.

An historic resource survey documents a community's (or in this instance, a region's) historic resources. This process includes field work to physically record the resource as well as background research to place the individual property within its historic context. This research, coupled with the evaluation of the property's physical characteristics and integrity, provides the basis for determining the property's historical, architectural or cultural significance.

Front Cover Image:

The *Odyssey* moored on Tacoma's historic waterfront, courtesy of Artifacts Consulting, Inc., 2011.

Back Cover Image:

Tacoma Industrial Waterfront, courtesy of Artifacts Consulting Inc., 2011

This map provides a sampling of surveyed maritime resources within the community, as well as previously documented resources, such as buildings and sites listed in the Washington and National Registers of Historic Places

For more information on this project and other heritage projects throughout Washington State, contact:

Department of Archaeology and Historic Preservation

Allyson Brooks

State Historic Preservation Officer

Allyson.Brooks@dahp.wa.gov

(360) 586-3065

www.dahp.wa.gov

Tacoma

A GUIDE TO HISTORIC MARITIME RESOURCES

PRESERVE AMERICA

The Washington Department of Archaeology and Historic Preservation (DAHP) received a Preserve America grant to survey and document Washington's historic maritime resources. DAHP hired Artifacts Consulting, Inc. of Tacoma to conduct the survey and compile the inventory. The project boundaries encompassed the state of Washington's saltwater shores from Whatcom County in the north to Grays Harbor County in the south. This dynamic region featured a variety of cultural resources and a unique story shaped by both Native-and Euro-American inhabitants and navigational, commercial, and recreational uses.

Preserve America encourages local community efforts to preserve our cultural and national heritage. The program promotes a greater shared understanding of our nation's unique history, strengthens regional and local identities, nurtures active community involvement in the preservation of our country's cultural and national heritage resources, and supports the economic vitality of our communities.

An important element of Preserve America is its matching-grants program. These grants support planning, development, and implementation of innovative activities and programs in heritage tourism. Preserve America matching-grant projects include activities and programs such as surveying and documenting historic resources, interpreting historic sites, planning, marketing, and training.

Commencement Bay's sheltered, deep water anchorage contributed to the growth of Tacoma's maritime role as a major shipping and distribution center. In 1873 the Northern Pacific railroad's transcontinental line reached Tacoma. This prompted a wave of commercial and industrial growth. Warehouses along the Foss Waterway provided transition space between rail cars and ships. Due to the 1878 spur line, connecting Tacoma to the Wilkeson Coal Mines, Tacoma became one of the region's most important coaling stations for steamships operating along the Salish Sea. Multiple industries developed along the waterfront. In 1886, the Stampede pass tunnel was completed and shortened the transcontinental railroad increasing Tacoma's role as a distribution point for outbound wheat shipments.

Infill of the tideflats significantly expanded the city's industrial waterfront. The former Puyallup River delta became a series of dredged waterways, including the Hylebos, Milwaukee, Foss, Middle, and Sitcum. Specialty trades developed that catered to maritime shipping operations. Brass foundries supplying boat yards included Atlas Foundry Co. and Gawley Foundry & Machine Works.

During World Wars I and II, shipbuilding along the waterfront expanded. Over the course of WWII the Seattle-Tacoma Shipbuilding Company built 8 of the smaller aircraft carriers. Following World War II, industrial lands built over the former tideflats encompassed more than 300 acres. Steamship lines provided regular connections with oversea vessels. By 1967 more than 55 steamship lines utilized the port's deep-water facilities.

Star Iron & Steel Co.
Also known as the Fick Foundry, the former Star Iron & Steel Co. offered blacksmithing services and manufactured marine and logging machinery. The company appears to have been operating here by 1912 .

Balfour Dock
Built in 1901, the Balfour Dock originally served as a waterside storage facility. The Working Waterfront Maritime Museum, located in the Balfour Dock building, provides educational and interpretive information on early maritime history in Tacoma.

Fireboat Station
Built in 1929, Fire Station #18 or Fireboat Station is the smallest in Tacoma. Designed in the Arts & Crafts Style, this building's fire and rescue crews served the port zone. The building is listed on the National Register.

Browns Point Light Station
This property includes multiple structures, built between 1903 – 1950s. Marks the eastern entry to Commencement Bay. First light erected here in 1887. The Modernistic concrete lighthouse tower dates from 1933.

Fort Nisqually
Marking one of the earliest European settlements on the Salish Sea, Fort Nisqually is interpreted today as a living history museum from its location within Point Defiance Park.

SURVEYED PROPERTIES

The following table provides a list of every property included within this survey, with the following information identified: Historic ID, Site City, Site Address, National Register of Historic Places (NRHP) Eligibility, Stabilization Needs, Community Role, Interpretive Needs, and whether the property is located on Department of Natural Resources (DNR) Aquatic Lands. For more information on the Physical Assessment categories within the table (Stabilization Needs, Community Role, Interpretive Needs, and DNR Aquatic Lands) please refer back to "Physical Assessment" on page 93.

To access further information on each of the surveyed properties, please visit the Washington Information System for Architectural and Archaeological Records Data (WISAARD) tool on the website for the Washington Department of Archaeology & Historic Preservation (DAHP). Simply copy the following link into your web browser and add in the Historic ID number following the '=' sign to bring up the field form for each property.

https://fortress.wa.gov/dahp/wisaard/dahpreports/historicpropertyreport.aspx?id=

For more information on how to use WISAARD, visit **http://www.dahp.wa.gov/learn-and-research/find-a-historic-place** to access the "How to Use WISAARD" Tutorial.

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159239	Aberdeen	03708 E Island Ln W, Aberdeen, WA 98520	No		2,4a	2	
158915	Aberdeen	404 S F St, Aberdeen, WA 98520	No		1,4,4b	2	Yes
158916	Aberdeen	418 S F St, Aberdeen, WA 98520	No		1,2,4,4b	2	Yes
158912	Aberdeen	421 S Michigan, Aberdeen, WA 98520	No	1	1		
158917	Aberdeen	422 S F St, Aberdeen, WA 98520	No		1,2,4,4b	2	
158919	Aberdeen	506 S F St, Aberdeen, WA 98520	Yes		1,2,4,4b	1	
158918	Aberdeen	801 E Market, Aberdeen, WA 98520	No		1		
158922	Aberdeen	Cedar St, Aberdeen, WA 98520	No		1,2,4,4b	2	Yes
158914	Aberdeen	E River St, Aberdeen, WA 98520	No		1,2,4,4b		
158913	Aberdeen	E River St, Aberdeen, WA 98520	Yes		1		
158910	Aberdeen	E Wishkah St, Aberdeen, WA 98520	No		2,4	2	Yes
158921	Aberdeen	S F St, Aberdeen, WA 98520	No	1	1,2,4,4a	2	Yes
158920	Aberdeen	S F St, Aberdeen, WA 98520	No		1,2,4,4b	2	
158911	Aberdeen	S Monroe St, Aberdeen, WA 98520	No		2		
159419	Aberdeen	W Curtis St, Aberdeen, WA	No		2		Yes
159420	Aberdeen	W Curtis St, Aberdeen, WA	No		2		Yes
158981	Allyn	18500 E State Route 3, Allyn, WA 98524	Yes		3		
158980	Allyn	5058 E Grapeview Loop Rd, Allyn, WA 98546	Yes				

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159313	Allyn	E Drum St, Allyn, WA 98524	No		3,4a	1 & 2	
158982	Allyn	E Treasure Island Rd, Allyn, WA 98524	Yes		4,4b	2	Yes
159114	Anacortes	1502 5th St, Anacortes, WA 98221	No	1	1,4,4a	2	
159116	Anacortes	202 Commercial Ave, Anacortes, WA 98221	No		2		
159115	Anacortes	2nd St, Anacortes, WA 98221	No				
159110	Anacortes	3022 Oakes Ave, Anacortes, WA 98221	Yes		2,4,4a	2	Yes
159111	Anacortes	3027 Oakes Ave, Anacortes, WA 98221	No				Yes
159112	Anacortes	3027 Oakes Ave, Anacortes, WA 98221	No		2,4a	2	Yes
159113	Anacortes	3027 Oakes Ave, Anacortes, WA 98221	No		2,4a	2	Yes
159024	Bainbridge Island	125 Parfitt Way, Bainbridge Island, WA 98110	No		1		
159206	Bainbridge Island	9507 NE South Beach Dr, Bainbridge Island, WA 98110	No		2,4a	2	Yes
159081	Bayview	11117 3rd St, Bayview, WA 98273	Yes		3	1	
159080	Bayview	11130 Bayview Edison Rd, Bayview, WA 98273	No		1,2,4,4a	2	
159082	Bayview	12615 C St, Bayview, WA 98273	No		3		

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159122	Bellingham	1000 Harris Ave, Bellingham, WA 98225	Yes		1	1	
159154	Bellingham	1021 State St, Bellingham, WA 98225	Yes	1	1		
159124	Bellingham	1100 Harris Ave, Bellingham, WA 98225	Yes		1	1	
159125	Bellingham	1101 Harris Ave, Bellingham, WA 98225	Yes		1	1	
159123	Bellingham	1208 11th St, Bellingham, WA 98225	No		1,3		
159153	Bellingham	201 Prospect St, Bellingham, WA 98225	Yes		3	1 & 2	
159118	Bellingham	210 McKenzie Ave, Bellingham, WA 98225	No				
159119	Bellingham	210 McKenzie Ave, Bellingham, WA 98225	No		2	2	
159120	Bellingham	210 McKenzie Ave, Bellingham, WA 98225	No		2	2	
159159	Bellingham	2182 Chuckanut Dr, Bellingham, WA 98229	No		2,4,4a	2	
159151	Bellingham	245 Chuckanut Dr, Bellingham, WA 98229	No		3	1	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159121	Bellingham	555 Harris Ave, Bellingham, WA 98225	No		1	1 & 2	
159117	Bellingham	Harris Ave, Bellingham, WA 98225	No		2,4,4a	2	Yes
159215	Bellingham	N Harbor Loop Dr, Bellingham, WA 98225	Yes		2,4a	2	Yes
159126	Bellingham	W Harbor Loop Dr, Bellingham, WA 98225	Yes				Yes
159127	Bellingham	W Harbor Loop Dr, Bellingham, WA 98225	Yes		2,4a	2	Yes
159430	Birch Bay	8076 Birch Bay Dr, Birch Bay, WA 98230	Yes		2,4c	1 & 2	
159426	Blaine	Blaine, WA	Yes		4a	1 & 2	Yes
159427	Blaine	Blaine, WA	Yes		4a	1 & 2	Yes
159427	Blaine	Blaine, WA	Yes		4a	1 & 2	Yes
159427	Blaine	Blaine, WA	Yes		4a	1 & 2	Yes
159428	Blaine	Blaine, WA	Yes		4a	1 & 2	
159428	Blaine	Blaine, WA	Yes		4a	1 & 2	
159423	Blaine	Blaine, WA	No			1 & 2	
159423	Blaine	Blaine, WA	No			1 & 2	
159425	Blaine	Blaine, WA	No		2,4a	1 & 2	Yes
159429	Blaine	Blaine, WA	Yes		1,4b	1 & 2	
159426	Blaine	Blaine, WA	Yes		4a	1 & 2	Yes
159421	Blaine	Gulf Rd, Blaine, WA	No		2,4a	1 & 2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159160	Blanchard	3606 Legg Rd, Blanchard, WA 98232	No		1,3		
159161	Blanchard	3685 Legg Rd, Blanchard, WA 98232	No		1,3		
159157	Bow	14010 MacTaggart Ave, Bow, WA 98232	Yes		1		
159158	Bow	14011 MacTaggart Ave, Bow, WA 98232	No		1		
159085	Bow	5742 Gilkey Ave, Bow, WA 98232	No		1,3		
159155	Bow	5778 Cain's Dr, Bow, WA 98232	No		2,4	2	
159156	Bow	5787 Cain's CT, Bow, WA 98232	No		2	2	
159084	Bow	5800 Cain's Ct, Bow, WA 98232	No		2,4	2	
159083	Bow	5800 Cain's CT, Bow, WA 98232	Yes				
159399	Bremerton	300 Washington Beach Ave, Bremerton, WA 98337	Yes			1 & 2	Yes
159398	Bremerton	Bremerton, WA	No			2	
159400	Burton	Burton, WA	No		3	2	
159401	Burton	Burton, WA	Yes			2	
159214	Camano Island	1880 SW Camano Dr, Camano Island, WA 98282	Yes		4c	1 & 2	
159213	Camano Island	78 Ustalady Rd, Camano Island, WA 98282	Yes			2	
159391	Clallam Bay	42 Rice St, Clallam Bay, WA 98326	Yes		1,3	1	
159397	Clallam Bay	81 Frontier St, Clallam Bay, WA	No		1,2		

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159392	Clallam Bay	Clallam Bay, WA	Yes		1,4a	1 & 2	
159393	Clallam Bay	Hwy 112, Clallam Bay, WA 98381	No				
159394	Clallam Bay	Washington St, Clallam Bay, WA 98381	No		2		
159395	Clallam Bay	Washington St, Clallam Bay, WA 98381	No		2		
159396	Clallam Bay	Washington St, Clallam Bay, WA 98381	No		2		
158923	Cosmopolis	S Bank Rd, Cosmopolis, WA 98537	No		2		
159369	Coupeville	Coupeville, WA	Yes		2,4c	1 & 2	
159364	Coupeville	1 NW Front St, Coupeville, WA	Yes		2	1 & 2	
159354	Coupeville	10 NW Front St, Coupeville, WA 98239	No		2,4b	1 & 2	
159358	Coupeville	11 NW Front St, Coupeville, WA 98239	No		2	1 & 2	
159332	Coupeville	1124 Engle Rd, Coupeville, WA 98239	No			1	
159333	Coupeville	1124 Engle Rd, Coupeville, WA 98239	No			1	
159342	Coupeville	1124 Engle Rd, Coupeville, WA 98239	Yes			1	
159343	Coupeville	1124 Engle Rd, Coupeville, WA 98239	Yes			1	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159344	Coupeville	1124 Engle Rd, Coupeville, WA 98239	Yes			1	
159345	Coupeville	1124 Engle Rd, Coupeville, WA 98239	Yes			1	
159353	Coupeville	12 NW Front St, Coupeville, WA 98239	No		2,4b	1 & 2	
159247	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159241	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159242	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159244	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159245	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159248	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159314	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159315	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159316	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159317	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159318	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159319	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159320	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159321	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159322	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159323	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159324	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159325	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159327	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159328	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159329	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159330	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159331	Coupeville	1276 Engle Rd, Coupeville, WA 98239	No			1 & 2	
159336	Coupeville	1276 Engle Rd, Coupeville, WA 98239	Yes			1 & 2	
159337	Coupeville	1276 Engle Rd, Coupeville, WA 98239	Yes			1 & 2	
159338	Coupeville	1276 Engle Rd, Coupeville, WA 98239	Yes			1 & 2	
159339	Coupeville	1276 Engle Rd, Coupeville, WA 98239	Yes			1 & 2	
159340	Coupeville	1276 Engle Rd, Coupeville, WA 98239	Yes			1 & 2	
159341	Coupeville	1276 Engle Rd, Coupeville, WA 98239	Yes			1 & 2	
159334	Coupeville	1280 Engle Rd, Coupeville, WA 98239	No			1	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159335	Coupeville	1280 Engle Rd, Coupeville, WA 98239	No			1	
159346	Coupeville	1280 Engle Rd, Coupeville, WA 98239	Yes			1	
159368	Coupeville	1280 Engle Rd, Coupeville, WA 98239	Yes			1 & 2	
159365	Coupeville	13 NW Front St, Coupeville, WA 98239	Yes		2	1 & 2	
159366	Coupeville	15 NW Front St, Coupeville, WA 98239	Yes		2	1 & 2	
159352	Coupeville	16 NW Front St, Coupeville, WA 98239	No		2,4b	1 & 2	
159357	Coupeville	17 NW Front St, Coupeville, WA 98239	No		2	1 & 2	
159367	Coupeville	19 NW Front St, Coupeville, WA 98239	Yes		2	1 & 2	
159361	Coupeville	2 NW Front St, Coupeville, WA 98239	Yes		2,4b	1 & 2	
159359	Coupeville	21 NW Front St, Coupeville, WA 98239	Yes		2	1 & 2	
159351	Coupeville	22 NW Front St, Coupeville, WA 98239	No		2,4b	1 & 2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159350	Coupeville	24 NW Front St, Coupeville, WA 98239	No		2,4b	1 & 2	
159347	Coupeville	26184 State Route 20, Coupeville, WA 98239	No		2	2	
159348	Coupeville	26184 State Route 20, Coupeville, WA 98239	No		2	2	
159360	Coupeville	4 NW Front St, Coupeville, WA 98239	Yes		2,4b	1 & 2	
159356	Coupeville	5 NW Front St, Coupeville, WA 98239	No		2	1 & 2	
159355	Coupeville	8 NW Front St, Coupeville, WA 98239	No		2,4b	1 & 2	
159363	Coupeville	Coupeville, WA	Yes			2	
159371	Coupeville	Coupeville, WA	Yes		2,4a	1 & 2	Yes
159362	Coupeville	Front St, Coupeville, WA 98239	Yes		2,4c	2	
159349	Coupeville	Zylstra Rd, Coupeville, WA 98239	Yes			2	
159259	Deer Harbor	11 Jack and Jill Pl, Deer Harbor, WA 98245	No		1	1 & 2	
159264	Deer Harbor	Upper Deer Harbor Rd, Deer Harbor, WA 98243	No			2	
159048	Des Moines	22030 Cliff Ave, Des Moines, WA 98198	No				

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159049	Des Moines	22030 Cliff Ave, Des Moines, WA 98198	Yes		3	1	
159374	Dungeness	Cline Spit Rd, Dungeness, WA	No		4a	2	
159373	Dungeness	Towne Rd, Dungeness, WA	Yes		3	1	
159377	Dungeness	Twin View Dr, Dungeness, WA	Yes			1 & 2	
158927	Eagle Harbor	403 Madison Ave, Eagle Harbor, WA 98110	No		1		
159251	Eastsound	109 North Beach Rd, Eastsound, WA 98245	Yes		2		
159252	Eastsound	109 North Beach Rd, Eastsound, WA 98245	Yes		2		
159275	Eastsound	1400 Rosario Rd, Eastsound, WA 98245	Yes		1,4c	1 & 2	
159185	Eastsound	162 Arcady Rd, Eastsound, WA 98245	Yes				
159250	Eastsound	181 North Beach Rd, Eastsound, WA 98245	No		3	1	
159274	Eastsound	218 Main St, Eastsound, WA 98245	Yes		4b	1 & 2	
159278	Eastsound	242 Main St, Eastsound, WA 98245	Yes		3,4b	1 & 2	
159268	EaStsound	245 Main St, Eastsound, WA 98245	Yes		2	2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159280	Eastsound	65 North Beach Rd, Eastsound, WA 98245	Yes		2		
159288	Eastsound	653 Crescent Beach Dr, Eastsound, WA 98245	Yes	1	1	2	
159045	Edmonds	14725 Norma Beach Rd, Edmonds, WA 98026	No		2,4,4a	2	Yes
159044	Edmonds	16111 76th Pl, Edmonds, WA 98026	No		4,4a		Yes
159198	Edmonds	Point Wells Rd, Edmonds, WA	No		2,4b	2	
159210	Everett	1001 Hewitt Ave, Everett, WA 98201	No				
159063	Everett	1011 Hewitt Ave, Everett, WA 98201	No		1,2		
159066	Everett	1016 14th St, Everett, WA 98201	No				Yes
159067	Everett	1016 14th St, Everett, WA 98201	No		1,2,4a	2	Yes
159076	Everett	1202 Cherry Ave, Everett, WA 98201	No		4,4a		
159211	Everett	14th St, Everett, WA 98201	No		1,2,4a	2	Yes
159212	Everett	14th St, Everett, WA 98201	No		1,2,4a	2	Yes
159068	Everett	1520 W Marine View Dr, Everett, WA 98201	No		1,2,4		Yes
159062	Everett	2600 Federal Ave, Everett, WA 98201	No		2,4b	2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159061	Everett	2600 Federal Ave, Everett, WA 98201	Yes				Yes
159064	Everett	2815 Federal Ave, Everett, WA 98201	No		1,2		
159072	Everett	2916 State St, Everett, WA 98201	Yes		1,2,4,4b	2	
159163	Everett	300 W Marine View Dr, Everett, WA 98201	No		2,4	2	Yes
159069	Everett	3120 Hewitt Ave, Everett, WA 98201	Yes		1,2		
159070	Everett	3210 Hewitt Ave, Everett, WA 98201	Yes		1,2		
159071	Everett	3210 Hewitt Ave, Everett, WA 98201	Yes		1,2		
159073	Everett	3816 Railway Ave, Everett, WA 98201	No		1,4,4b	2	
159074	Everett	3850 Railway Ave, Everett, WA 98201	No		1,4,4b	2	
159164	Everett	4020 34th Ave, Everett, WA 98201	No		2,4,4a	2	
159065	Everett	McKenzie Ave, Everett, WA 98201	No		2	2	Yes
159075	Everett	Railway Ave, Everett, WA 98201	No		2,4,4b	2	Yes
159209	Everett	W Marine View Dr, Everett, WA 98207	No		1,2,4a	2	Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159370	Freeland	E Shoreview Dr, Freeland, WA 98249	No		2,4a	1 & 2	
159189	Friday Harbor	10 First St, Friday Harbor, WA 98250	No		2	1 & 2	
159086	Friday Harbor	105 Spring St, Friday Harbor, WA 98250	Yes		1,2		
159262	Friday Harbor	125 Second St N, Friday Harbor, WA 98250	No			2	
159088	Friday Harbor	125 Spring St, Friday Harbor, WA 98250	No		1,2		
159249	Friday Harbor	1293 Turn Point Rd, Friday Harbor, WA 98250	Yes		2,4a	1 & 2	
159269	Friday Harbor	1293 Turn Point Rd, Friday Harbor, WA 98250	Yes		2,4a	1 & 2	
159267	Friday Harbor	150 Nichols St, Friday Harbor, WA 98250	Yes		2	1	
159253	Friday Harbor	153 First St, Friday Harbor, WA 98250	No			2	
159087	Friday Harbor	160 Harrison St, Friday Harbor, WA 98250	No			2	
159089	Friday Harbor	160 Harrison St, Friday Harbor, WA 98250	No			2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159261	Friday Harbor	209 Spring St, Friday Harbor, WA 98250	No		1,2		
159190	Friday Harbor	260 First St, Friday Harbor, WA 98250	Yes			2	
159273	Friday Harbor	28 West St, Friday Harbor, WA 98250	Yes	1,2		1	
159188	Friday Harbor	3 Front St, Friday Harbor, WA 98250	No		2	1 & 2	
159187	Friday Harbor	35 First St, Friday Harbor, WA 98250	No		1,2		
159265	Friday Harbor	350 Court St, Friday Harbor, WA 98250	Yes		3	1 & 2	
159263	Friday Harbor	506 Guard St, Friday Harbor, WA 98250	No			2	
159186	Friday Harbor	60 Second St S, Friday Harbor, WA 98250	No		1,2		
159270	Friday Harbor	62 First St, Friday Harbor, WA 98250	Yes		3	1 & 2	
159272	Friday Harbor	80 First St, Friday Harbor, WA 98250	No		2	1 & 2	
159260	Friday Harbor	85 Front St, Friday Harbor, WA 98250	No			1 & 2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159254	Friday Harbor	95 Nichols St, Friday Harbor, WA 98250	No			2	
159176	Friday Harbor	Cattle Point Rd, Friday Harbor, WA 98250	Yes		4a	1 & 2	
159294	Gig Harbor	2788 Harborview Dr, Gig Harbor, WA 98335	Yes		4b	2	Yes
159295	Gig Harbor	2788 Harborview Dr, Gig Harbor, WA 98335	Yes		4b	2	Yes
159005	Gig Harbor	2809 Harborview Dr, Gig Harbor, WA 98335	No		4b	2	
159293	Gig Harbor	2907 Harborview Dr, Gig Harbor, WA 98335	Yes		2,4a	2	Yes
159003	Gig Harbor	2915 Harborview Dr, Gig Harbor, WA 98335	No				
159296	Gig Harbor	2915 Harborview Dr, Gig Harbor, WA 98335	No		2	2	
159002	Gig Harbor	3108 Harborview Dr, Gig Harbor, WA 98335	Yes		2		
159001	Gig Harbor	3202 Harborview Dr, Gig Harbor, WA 98335	Yes			2	
159000	Gig Harbor	3313 Harborview Dr, Gig Harbor, WA 98332	No		2		

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
158996	Gig Harbor	3617 Harborview Dr, Gig Harbor, WA	Yes		2	2	Yes
159199	Gig Harbor	4121 Harborview Dr, Gig Harbor, WA 98335	Yes			1 & 2	
159200	Gig Harbor	4121 Harborview Dr, Gig Harbor, WA 98335	Yes			1 & 2	
159006	Gig Harbor	7003 Craig Ln, Gig Harbor, WA 98335	No		4b	2	Yes
158997	Gig Harbor	8212 Dorotich St, Gig Harbor, WA 98335	No			2	
158998	Gig Harbor	8215 Dorotich St, Gig Harbor, WA 98335	No			2	
159008	Gig Harbor	Cascade Ave, Gig Harbor, WA 98335	No		4b	2	Yes
159009	Gig Harbor	Cascade Ave, Gig Harbor, WA 98335	No		4b	2	Yes
159010	Gig Harbor	Cascade Ave, Gig Harbor, WA 98335	No		4b	2	Yes
159012	Gig Harbor	Cascade Ave, Gig Harbor, WA 98335	No		4b	2	Yes
159007	Gig Harbor	Cascade Ave, Gig Harbor, WA 98335	Yes		4b	2	Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159011	Gig Harbor	Cascade Ave, Gig Harbor, WA 98335	Yes		4b	2	Yes
159203	Gig Harbor	Gig Harbor, WA	No		2,4a	2	Yes
158995	Gig Harbor	Harborview Dr, Gig Harbor, WA 98332	No		2,4a	2	Yes
159201	Gig Harbor	Harborview Dr, Gig Harbor, WA 98332	Yes			1 & 2	
159202	Gig Harbor	Harborview Dr, Gig Harbor, WA 98332	Yes			1 & 2	
159004	Gig Harbor	Harborview Dr, Gig Harbor, WA 98335	Yes		2,4,4a	2	Yes
158903	Grayland	1504 State Route 105, Grayland, WA 98547	No		4,4a	2	
158902	Grayland	1767 State Route 105, Grayland, WA 98547	Yes		1	1	
158926	Hoodsport	N U.S. Highway 101, Hoodsport, WA	No			2	Yes
158925	Hoodsport	State Route 101, Hoodsport, WA	No		2,4a	2	Yes
158924	Hoodsport	State Route 101, Hoodsport, WA	Yes				
159414	Hoquiam	01301 1/2 B St, Hoquiam, WA 98550	No				Yes
159415	Hoquiam	01303 C St, Hoquiam, WA 98550	No	1	2,4a	2	Yes
159418	Hoquiam	1303 C St, Hoquiam, WA 98550	No				Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159416	Hoquiam	1502 Riverside Ave, Hoquiam, WA 98550	No				
159417	Hoquiam	1502 Riverside Ave, Hoquiam, WA 98550	No		4b	2	
158908	Hoquiam	1611 Riverside, Hoquiam, WA 98550	Yes		3		
158909	Hoquiam	1941 Riverside, Hoquiam, WA 98550	No	1,2	1,3		
158904	Hoquiam	600 N St, Hoquiam, WA 98550	Yes		1,2		
158905	Hoquiam	825 Queen, Hoquiam, WA 98550	No		2,4,4a		
158907	Hoquiam	8th & Levee St, Hoquiam, WA 98550	Yes		1,4	2	Yes
158906	Hoquiam	B St, Hoquiam, WA 98550	No				Yes
159205	Keyport	15498 Washington Ave N, Keyport, WA 98345	No		2,4a	2	Yes
158993	Keyport	1842 NE Grandview Blvd, Keyport, WA 98345	No		4,4a	2	Yes
159204	Keyport	Washington Ave NE, Keyport, WA 98345	No		2,4a	2	Yes
158929	Kingston	25931 Washington Blvd, Kingston, WA 98346	Yes		1,2		
159150	La Conner	103 E Morris St, La Conner, WA 98257	Yes		1		

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159152	La Conner	111 E Morris St, La Conner, WA 98257	Yes		1	1	
159149	La Conner	115 N 1st St, La Conner, WA 98257	No		1,4,4a		
159243	La Conner	128 First St, La Conner, WA 98257	No		2,4	1 & 2	
159147	La Conner	128 S 1st St, La Conner, WA 98257	Yes		1,4,4b	2	
159128	La Conner	1320 Conner Way, La Conner, WA 98257	No		2,4a	2	Yes
159148	La Conner	301 S 1st St, La Conner, WA 98257	Yes		1	1	
159246	La Conner	602 S 3rd St, La Conner, WA 98257	Yes		3	1	
159141	La Conner	604 S 1st St, La Conner, WA 98257	Yes		1,4,4b		Yes
159144	La Conner	608 S 1st St, La Conner, WA 98257	No		1,4,4b		Yes
159142	La Conner	610 S 1st St, La Conner, WA 98257	No		1,4,4b		Yes
159140	La Conner	612 S 1st St, La Conner, WA 98257	Yes		1,4,4b		Yes
159138	La Conner	614 S 1st St, La Conner, WA 98257	No		1,4,4b		Yes
159136	La Conner	618 S 1st St, La Conner, WA 98257	Yes		1,4,4b		Yes
159145	La Conner	619 S 1st St, La Conner, WA 98257	No		1	1	
159134	La Conner	620 S 1st St, La Conner, WA 98257	No				Yes
159143	La Conner	621 S 1st St, La Conner, WA 98257	No		1	1	
159146	La Conner	622 2nd St, La Conner, WA 98257	Yes		1,3		
159135	La Conner	622 S 1st St, La Conner, WA 98257	Yes		2,4	1 & 2	Yes
159139	La Conner	701 S 1st St, La Conner, WA 98257	Yes		1	1	
159131	La Conner	702 S 1st St, La Conner, WA 98257	Yes		1,2,4,4b		Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159137	La Conner	705 S 1st St, La Conner, WA 98257	No		1	1	
159130	La Conner	712-714 S 1st St, La Conner, WA 98257	No		1,2,4,4b		Yes
159133	La Conner	713-719 S 1st St, La Conner, WA 98257	Yes		1	1	
159129	La Conner	720 S 1st St, La Conner, WA 98257	Yes		1,2,4,4b		Yes
159132	La Conner	721 S 1st St, La Conner, WA 98257	Yes		1	1	
159405	Lake City	Silcox Dr, Lake City, WA 98498	Yes				Yes
159407	Lakewood	Lakewood, WA	Yes				Yes
159411	Lakewood	Lakewood, WA	Yes				Yes
159406	Lakewood	Silcox Dr, Lakewood, WA 98498	Yes				Yes
158964	Lilliwaup	36500 N U.S. Highway 101, Lilliwaup, WA 98555	Yes	1	1,4,4b		
158963	Lilliwaup	N U.S. Highway 101, Lilliwaup, WA 98555	No		1,4,4a	2	
158953	Lilliwaup	N US Highway 101, Lilliwaup, WA 98555	No		4,4b	2	Yes
159422	Lummi Island	2200 N Nugent Rd, Lummi Island, WA 98262	Yes		2,4c	2	
159424	Lummi Island	Legoe Bay Rd, Lummi Island, WA 98262	No	1	2,4a	1 & 2	
159021	Manchester	2371 Denniston Ln, Manchester, WA 98366	No		4,4c	2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159165	Marysville	115 Cedar Ave, Marysville, WA 98270	No		1		
159162	Marysville	7225 Totem Beach Rd, Marysville, WA 98271	Yes		3	2	
159376	Maynard	282500 Block Highway 101, Maynard, WA	No			2	
159238	Moclips	00059 Otis Ave, Moclips, WA 98562	Yes		?		Yes
158897	Moclips	59 Otis Ave, Moclips, WA 98562	No		4		
159054	Mukilteo	608 Front St, Mukilteo, WA 98275	Yes		4,4a		
159055	Mukilteo	608 Front St, Mukilteo, WA 98275	Yes		4,4a		
159056	Mukilteo	608 Front St, Mukilteo, WA 98275	Yes		4a	1 & 2	
159057	Mukilteo	608 Front St, Mukilteo, WA 98275	Yes		4a	1 & 2	
159060	Mukilteo	834 2nd St, Mukilteo, WA 98275	Yes			2	
159053	Mukilteo	917 Webster St, Mukilteo, WA 98275	Yes		1,2,4		
159059	Mukilteo	Front St, Mukilteo, WA 98275	No		4	2	
159389	Neah Bay	Waddah Pl, Neah Bay, WA 98381	No		2,4a	2	
159224	Nordland	10541 Flagler Rd, Nordland, WA 98358	Yes			1 & 2	
159218	Nordland	10541 Flagler Rd, Nordland, WA 98358	Yes				

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159221	Nordland	10541 Flagler Rd, Nordland, WA 98358	Yes				
159228	Nordland	10541 Flagler Rd, Nordland, WA 98358	Yes				
159234	Nordland	10541 Flagler Rd, Nordland, WA 98358	Yes				
159235	Nordland	10541 Flagler Rd, Nordland, WA 98358	Yes				
159236	Nordland	10541 Flagler Rd, Nordland, WA 98358	Yes				
159106	Nordland	7120 Flagler Rd, Nordland, WA 98358	No		1,3	2	
159107	Nordland	7180 Flagler Rd, Nordland, WA 98358	No		1,2,4,4b	2	
159109	Nordland	E Beach Park Rd, Nordland, WA 98339	No		3,4,4c	1	
159105	Nordland	Flagler Campground Rd, Nordland, WA 98358	No				
159230	Nordland	Flagler Rd, Nordland, WA 98358	No				
159231	Nordland	Flagler Rd, Nordland, WA 98358	No				
159232	Nordland	Flagler Rd, Nordland, WA 98358	No				
159216	Nordland	Flagler Rd, Nordland, WA 98358	Yes				
159219	Nordland	Flagler Rd, Nordland, WA 98358	Yes				

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159220	Nordland	Flagler Rd, Nordland, WA 98358	Yes				
159225	Nordland	Flagler Rd, Nordland, WA 98358	Yes				
159226	Nordland	Flagler Rd, Nordland, WA 98358	Yes				
159229	Nordland	Flagler Rd, Nordland, WA 98358	Yes				
159233	Nordland	Flagler Rd, Nordland, WA 98358	Yes				
159237	Nordland	Flagler Rd, Nordland, WA 98358	Yes				
159222	Nordland	Hwy 116, Nordland, WA 98358	No		3,4c	1 & 2	
159223	Nordland	Hwy 116, Nordland, WA 98358	No		4a	2	
159108	Nordland	Marrowstone Point Rd, Nordland, WA 98339	Yes		4,4a	1 & 2	
159255	Olga	107 Doe Bay Rd, Olga, WA 98279	No		2	2	
159191	Olga	7025 Olga Rd, Olga, WA 98279	Yes				
159279	Olga	7034 Olga Rd, Olga, WA	Yes		2	1 & 2	
159307	Olympia	1218 West Bay Dr NW, Olympia, WA	Yes		2,4a	2	Yes
159310	Olympia	208 West Bay Dr NW, Olympia, WA	Yes			2	
159309	Olympia	5028 Meridian Rd NE, Olympia, WA	No		2,4a	2	Yes
159308	Olympia	5420 South Bay Ter NE, Olympia, WA 98516	No		2,4a	2	Yes
159311	Olympia	7232 Sandy Point Beach Rd NE, Olympia, WA 98516	No		4c	2	
159306	Olympia	915 Washington St NE, Olympia, WA 98501	No		2,4a	2	Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159271	Orcas	8368 Orcas Rd, Orcas Island, WA 98280	Yes		4b	2	
159276	Orcas Island	155 Channel Rd, Orcas Island, WA	Yes		2,4a	2	
159266	Orcas Island	4319 Deer Harbor Rd, Orcas Island, WA 98245	Yes		3	1	
159277	Orcas Island	4362 Crow Valley Rd, Orcas Island, WA 98245	No		2	1 & 2	
159184	Orcas Island	525 Deer Harbor Rd, Orcas Island, WA	No		2,4a	2	Yes
159258	Orcas Island	653 Deer Harbor Rd, Orcas Island, WA 98245	No		4b	2	
159257	Orcas Island	884 Deer Harbor Rd, Orcas Island, WA	No		3	1 & 2	
159256	Orcas Island	Deer Harbor Rd, Orcas Island, WA	No		4a	2	Yes
159291	Orcas Island	Doe Bay Rd, Orcas Island, WA	No		2,4c	2	
159287	Orcas Island	Doe Bay Rd, Orcas Island, WA	Yes		2	2	
158899	Pacific Beach	21 2nd St S, Pacific Beach, WA 98571	No		3	1	
158898	Pacific Beach	59 Main St, Pacific Beach, WA 98571	Yes		1,2	1	
159388	Port Angeles	121 E Railroad Ave, Port Angeles, WA 98362	Yes		1,2,4b	1 & 2	Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159386	Port Angeles	125 W Front St, Port Angeles, WA 98362	Yes		1,2	1	Yes
159380	Port Angeles	1301 Marine Dr, Port Angeles, WA 98363	No		2		
159383	Port Angeles	138 W Railroad Ave, Port Angeles, WA 98362	No		1,2	1 & 2	Yes
159378	Port Angeles	1902 Marine Dr, Port Angeles, WA 98362	No		2,4b	2	
159379	Port Angeles	1902 Marine Dr, Port Angeles, WA 98362	No		2,4b	2	
159382	Port Angeles	215 W First St, Port Angeles, WA 98362	No		1,2	1	
159390	Port Angeles	314 W Front St, Port Angeles, WA 98362	No		3	1	
159381	Port Angeles	704 Marine Dr, Port Angeles, WA 98363	No		2		
159385	Port Angeles	704 Marine Dr, Port Angeles, WA 98363	Yes		1,2		
159387	Port Angeles	Marine Dr, Port Angeles, WA 98363	No		2,4a	2	Yes
159097	Port Hadlock	21 Water St, Port Hadlock, WA 98339	No		1		

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159094	Port Hadlock	31 Water St, Port Hadlock, WA 98339	No				
159095	Port Hadlock	31 Water St, Port Hadlock, WA 98339	No		1	2	
159104	Port Hadlock	310 Hadlock Bay Rd, Port Hadlock, WA 98339	No		2,4a	2	
159102	Port Hadlock	32 Water St, Port Hadlock, WA 98339	No		2,4	2	
159099	Port Hadlock	42 Water St, Port Hadlock, WA 98339	No		2,4	2	Yes
159227	Port Hadlock	Port Hadlock, WA	No		2	2	Yes
159166	Port Ludlow	360 Quarry Rd, Port Ludlow, WA 98365	No		2,4a	2	
158985	Port Ludlow	622 Olympus Blvd, Port Ludlow, WA 98365	Yes		4b	2	
158986	Port Ludlow	624 Olympus Blvd, Port Ludlow, WA 98365	Yes		4b	2	
159167	Port Ludlow	736 Olympus Blvd, Port Ludlow, WA 98365	No				
158987	Port Orchard	1343 SW Bay St, Port Orchard, WA 98366	No		2,4,4a	2	
159022	Port Orchard	2965 Harvey St, Port Orchard, WA 98366	No	1			

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
158989	Port Orchard	405 Bay St, Port Orchard, WA 98366	No		2,4,4a	2	
158999	Port Orchard	4282 Beach Dr, Port Orchard, WA 98366	No		3,4,4a		Yes
159019	Port Orchard	7767 E Hilldale Rd, Port Orchard, WA 98366	Yes			1 & 2	
159018	Port Orchard	7767 E Hilldale Rd, Port Orchard, WA 98366	Yes				
159023	Port Orchard	9003 E Main St, Port Orchard, WA 98366	No		3	2	
158928	Port Orchard	9969 SE Southworth Dr, Port Orchard, WA 98366	No		3,4,4c		Yes
159207	Port Townsend	100 Mill Rd, Port Townsend, WA 98368	Yes				Yes
159091	Port Townsend	1012 Water St, Port Townsend, WA 98368	Yes		2	2	
159090	Port Townsend	1102 Water St, Port Townsend, WA 98368	No		2	2	
159092	Port Townsend	111 Quincy St, Port Townsend, WA 98368	No		2,4,4b	2	Yes
158979	Port Townsend	154 Hwy 20, Port Townsend, WA 98368	No			2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
158976	Port Townsend	154 Highway 20, Port Townsend, WA 98368	No	1,2	1	2	
158978	Port Townsend	162 Highway 20, Port Townsend, WA 98368	No		1,2		
158977	Port Townsend	281732 Highway 101, Port Townsend, WA 98368	No		2		
158971	Port Townsend	282332 Highway 101, Port Townsend, WA 98368	No		2		
159372	Port Townsend	282532 Hwy 101, Port Townsend, WA 98368	No		2	2	
158973	Port Townsend	282532 Highway 101, Port Townsend, WA 98368	Yes				
159096	Port Townsend	327 Jackson St, Port Townsend, WA 98368	Yes		1	1 & 2	
159077	Port Townsend	3710 Discovery Rd, Port Townsend, WA 98368	Yes		2		
159098	Port Townsend	410 Washington St, Port Townsend, WA 98368	Yes		2	1 & 2	
159208	Port Townsend	532 Battery Way, Port Townsend, WA 98368	No			2	Yes
159078	Port Townsend	Fort Worden State Park, Port Townsend, WA 98368	No	1		1	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159079	Port Townsend	Fort Worden State Park, Port Townsend, WA 98368	Yes			1	
158972	Port Townsend	Highway 101 N, Port Townsend, WA 98368	Yes	1	1,2,4,4b	1	
159103	Port Townsend	Hudson St, Port Townsend, WA 98368	Yes				
159100	Port Townsend	Jackson St, Port Townsend, WA 98368	No				
159101	Port Townsend	Jackson St, Port Townsend, WA 98368	No		2	1 & 2	
159217	Port Townsend	Jefferson St, Port Townsend, WA	Yes		1	1 & 2	
159409	Port Townsend	Port Townsend, WA	Yes			2	Yes
159410	Port Townsend	Port Townsend, WA	Yes			2	Yes
159093	Port Townsend	Quincy St, Port Townsend, WA 98368	Yes	1	4,4a		Yes
158991	Poulsbo	17296 Lemolo Shore Dr, Poulsbo, WA 98370	No	1	4,4a		
158992	Poulsbo	17304 Lemolo Shore Dr, Poulsbo, WA 98370	No	1	4,4a		

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
158990	Poulsbo	17650 Fjord Dr, Poulsbo, WA 98370	No		4	2	
158988	Poulsbo	18920 4th Ave NE, Poulsbo, WA 98370	No			2	
159181	Roche Harbor	248 Reuben Memorial Dr, Roche Harbor, WA 98250	Yes		2,4c	2	Yes
159180	Roche Harbor	248 Reuben Memorial Dr, Roche Harbor, WA 98250	Yes		2,4c	2	
159182	Roche Harbor	248 Reuben Memorial Dr, Roche Harbor, WA 98250	Yes		2,4c	2	
159169	Roche Harbor	Reuben Memorial Dr, Roche Harbor, WA 98250	Yes			1 & 2	
159170	Roche Harbor	Reuben Memorial Dr, Roche Harbor, WA 98250	Yes			1 & 2	
159175	Roche Harbor	Reuben Memorial Dr, Roche Harbor, WA 98250	Yes		2	1 & 2	
159174	Roche Harbor	Reuben Memorial Dr, Roche Harbor, WA 98250	Yes		3	1	
159286	Rosario	114 Twin House Ln, Rosario, WA	Yes			2	
159285	Rosario	98 Twin House Ln, Rosario, WA	Yes			2	
159289	Rosario	Rosario Rd, Rosario, WA	No	1,2	4c	1 & 2	
159290	Rosario	Rosario Rd, Rosario, WA	Yes			1 & 2	
159282	Rosario	Rosario Rd, Rosario, WA	Yes				

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159281	Rosario	Rosario Rd, Rosario, WA	Yes		1	2	
159284	Rosario	Rosario Rd, Rosario, WA	Yes	1	1	2	
159283	Rosario	Rosario Rd, Rosario, WA	Yes		1,4c	1 & 2	
159173	San Juan Island	1567 West Side Rd, San Juan Island, WA 98250	Yes			1 & 2	
159177	San Juan Island	1567 West Side Rd, San Juan Island, WA 98250	Yes		1	1 & 2	
159178	San Juan Island	1567 West Side Rd, San Juan Island, WA 98250	Yes		4a	1 & 2	
159179	San Juan Island	50 San Juan Park Rd, San Juan Island, WA 98250	No			1	
159168	San Juan Island	50 San Juan Park Rd, San Juan Island, WA 98250	Yes			1	
159183	San Juan Island	Cattle Point Rd, San Juan Island, WA 98250	No		4a	1 & 2	
159172	San Juan Island	Cattle Point Rd, San Juan Island, WA 98250	Yes			1 & 2	
159171	San Juan Island	West Valley Rd, San Juan Island, WA 98250	Yes			1 & 2	
158968	Seabeck	470 Allan King Rd, Seabeck, WA 98380	Yes			2	
158967	Seabeck	532 Allan King Rd, Seabeck, WA 98380	Yes			2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
158966	Seabeck	608 Allan King Rd, Seabeck, WA 98380	No			2	
158965	Seabeck	705 Wyatt Ln, Seabeck, WA 98380	No			2	
159413	Seattle	1010 Valley St, Seattle, WA	Yes			2	Yes
159408	Seattle	1010 Valley St, Seattle, WA 98109	Yes			2	Yes
159412	Seattle	1010 Valley St, Seattle, WA 98109	Yes			2	Yes
159026	Seattle	1109 Elm Pl, Seattle, WA 98116	Yes				
159027	Seattle	1123 Harbor Ave, Seattle, WA 98116	Yes	1,2	1		
159197	Seattle	1530 Westlake Ave N, Seattle, WA 98109	No			2	Yes
159058	Seattle	1807 E Hamlin St, Seattle, WA 98112	Yes		2,4,4c	2	
159029	Seattle	2000 W Emerson Pl, Seattle, WA 98119	No		2,4a	2	Yes
159030	Seattle	2000 W Emerson PL, Seattle, WA 98119	No		2,4a	2	Yes
159028	Seattle	2000 W Emerson Pl, Seattle, WA 98119	Yes		2,4a	2	Yes
158950	Seattle	2246 Alki Ave, Seattle, WA 98116	Yes		1	2	
158949	Seattle	2464 Alki Ave, Seattle, WA 98116	Yes	1	1	2	
159196	Seattle	2750 W Commodore Way, Seattle, WA 98199	Yes		2,4a	2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159035	Seattle	2916 SW Avalon Way, Seattle, WA 98126	No		2	2	
159034	Seattle	2916 SW AVALON WAY, Seattle, WA 98126	Yes				
158941	Seattle	3201 Alki Ave SW, Seattle, WA 98116	Yes		4a	1 & 2	Yes
158942	Seattle	3201 Alki Ave SW, Seattle, WA 98116	Yes		4a	1 & 2	
158943	Seattle	3201 Alki Ave SW, Seattle, WA 98116	Yes		4a	1 & 2	
159193	Seattle	3201 Alki Ave SW, Seattle, WA 98116	Yes		4a	1 & 2	
159036	Seattle	3310 Harbor Ave, Seattle, WA 98126	No		2		
159040	Seattle	3525 6th Ave, Seattle, WA 98119	No	1	1,2	1	
159192	Seattle	3527 Chelan Ave SW, Seattle, WA 98106	Yes		2	1	Yes
159042	Seattle	3800 W Marginal Way, Seattle, WA 98106	No		2,4a	2	Yes
159043	Seattle	3800 W Marginal Way, Seattle, WA 98106	Yes		2,4a	2	Yes
159194	Seattle	3838 W Marginal Way SW, Seattle, WA 98106	No		2,4a	2	Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159032	Seattle	4025 13th Ave, Seattle, WA 98119	No		4,4a		Yes
158945	Seattle	4029 Beach Dr SW, Seattle, WA 98116	Yes		1,4		
158946	Seattle	4109 Beach Dr, Seattle, WA 98116	Yes		4		
159046	Seattle	500 S Myrtle St, Seattle, WA 98108	Yes		2,4,4a,4b	2	
159047	Seattle	500 S Myrtle St, Seattle, WA 98108	Yes		2,4a	2	Yes
159195	Seattle	500 S Myrtle St, Seattle, WA 98108	Yes		2,4a	2	
159041	Seattle	600 W Ewing St, Seattle, WA 98119	No		1,2	1	
159037	Seattle	660 W Ewing St, Seattle, WA 98119	Yes		2	1	
159050	Seattle	701 S Orchard St, Seattle, WA 98108	Yes		1,4,4b	2	
159051	Seattle	7551 8th Ave, Seattle, WA 98108	No	1	4,4b		
158951	Seattle	8603 Fauntleroy Way, Seattle, WA 98136	Yes		3,4,4c		
158948	Seattle	8700 Golden Gardens Dr, Seattle, WA 98117	Yes		3,4,4c		
159025	Seattle	Alki Ave SW, Seattle, WA 98116	No				Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159052	Seattle	E Marginal Way S, Seattle, WA 98108	No		4,4a		
159402	Seattle	Northwest Seaport South Lake Union, Seattle, WA	Yes			2	Yes
159403	Seattle	Northwest Seaport South Lake Union, Seattle, WA	Yes			2	Yes
159404	Seattle	Northwest Seaport South Lake Union, Seattle, WA	Yes			2	Yes
159038	Seattle	SW Andover St, Seattle, WA 98106	No		2		Yes
159039	Seattle	SW Andover St, Seattle, WA 98106	Yes		2	2	Yes
159375	Sequim	Marine Dr, Sequim, WA 98382	No		4a	2	
158955	Shelton	204 E Railroad Ave, Shelton, WA 98584	Yes				Yes
158974	Shelton	220 E Wilson Rd, Shelton, WA 98584	No		2		
158975	Shelton	3371 E Harstine Island Rd N, Shelton, WA 98584	Yes		3	1	
158957	Shelton	701 E Pine St, Shelton, WA 98584	No				Yes
158958	Shelton	701 E Pine St, Shelton, WA 98584	No		2,4a	2	Yes
159312	Shelton	E Pine St, Shelton, WA 98584	No		2,4a	2	
158983	Silverdale	3473 NW Byron, Silverdale, WA 98383	No		2		

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
158984	Silverdale	9220 Bay Shore Dr, Silverdale, WA 98383	No		1,2,4,4b	2	
158994	Steilacoom	Champion St, Steilacoom, WA 98388	Yes		3		
159292	Sunrise Beach	Sunrise Beach Dr NW, Sunrise Beach, WA 98332	No				
159015	Sunrise Beach	Sunrise Beach Dr, Sunrise Beach, WA 98332	No			2	
158939	Tacoma	1002 E F St, Tacoma, WA 98421	No		2,4b	2	Yes
158937	Tacoma	1017 E D St, Tacoma, WA 98421	Yes		1,2	2	Yes
158934	Tacoma	1118 E D St, Tacoma, WA 98421	No		1,2		Yes
158944	Tacoma	1448 Paul Ave, Tacoma, WA 98421	No		2		
159033	Tacoma	1950 Marine View Dr, Tacoma, WA 98422	No		2,4		
159302	Tacoma	201 Tulalip St NE, Tacoma, WA 98422	Yes		4a	1 & 2	Yes
159300	Tacoma	201 Tulalip St NE, Tacoma, WA 98422	Yes		4a	1 & 2	
159301	Tacoma	201 Tulalip St NE, Tacoma, WA 98422	Yes		4a	1 & 2	
159303	Tacoma	201 Tulalip St NE, Tacoma, WA 98422	Yes		4a	1 & 2	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159304	Tacoma	201 Tulalip St NE, Tacoma, WA 98422	Yes		4a	1 & 2	
159305	Tacoma	201 Tulalip St NE, Tacoma, WA 98422	Yes		4a	1 & 2	
158931	Tacoma	2201 Ruston WAY, Tacoma, WA 98402	No		2,4		Yes
159031	Tacoma	2218 Marine View Dr, Tacoma, WA 98422	No		2		
158930	Tacoma	2761 Ruston Way, Tacoma, WA 98402	No		2	2	Yes
159299	Tacoma	302 E Eleventh St, Tacoma, WA 98402	Yes		1,2,4		Yes
158935	Tacoma	401 E 15th St, Tacoma, WA 98421	No		2,4	2	Yes
158947	Tacoma	4700 Marine View Dr, Tacoma, WA 98422	No		4	2	
158940	Tacoma	501 E 11TH St, Tacoma, WA 98421	Yes		1		Yes
158932	Tacoma	540 E D St, Tacoma, WA 98421	No		2		Yes
159020	Tacoma	8355 6th Ave, Tacoma, WA 98465	Yes		3	1 & 2	
159017	Tacoma	8612 6th Ave, Tacoma, WA 98465	No		2	2	
158936	Tacoma	E 15th St, Tacoma, WA 98421	Yes		2,4	2	Yes
158933	Tacoma	E D St, Tacoma, WA 98421	No		1,4	2	Yes

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159013	Tacoma	E Day Island Blvd, Tacoma, WA 98466	Yes		3,4	2	
158938	Tacoma	E F St, Tacoma, WA 98421	No				Yes
159297	Tacoma	McCarver St, Tacoma, WA 98402	No		3	1 & 2	Yes
159298	Tacoma	Tacoma, WA	Yes			1 & 2	Yes
158962	Tahuya	NE Dewatto Beach Rd, Tahuya, WA 98588	No	1	4c	2	Yes
158961	Tahuya	NE Dewatto Beach Rd, Tahuya, WA 98588	Yes				Yes
158969	Union	12190 E State Route 106 Ave, Union, WA 98592	Yes				
158970	Union	12190 E State Route 106, Union, WA 98592	Yes		3	1 & 2	
158954	Union	4961 E Highway 106, Union, WA 98592	No		4,4c	2	
158956	Union	E State Route 106, Union, WA 98592	No			1	
158960	Union	E State Route 106, Union, WA 98592	No				
158959	Union	E State Route 106, Union, WA 98592	No				
159016	University Place	8924 19th St W, University Place, WA 98466	Yes	1	1	1	

Table 5.11: Surveyed Properties

Historic ID	Site City	Site Address	NRHP Eligibility	Stabilization Needs	Community Role	Interpretive Needs	On DNR Aquatic Lands
159014	University Place	9007 19th St W, University Place, WA 98466	No		2,4		Yes
158900	Westport	2201 Westhaven Dr, Westport, WA 98595	No				
158901	Westport	2201 Westhaven DR, Westport, WA 98595	Yes			1 & 2	
159240	Westport	W Westhaven Dr, Westport, WA 98595	No		2,4a	1 & 2	Yes

BIBLIOGRAPHY

American Association for State and Local History. *Fort Worden*. National Register of Historic Places Nomination, Washington DC: National Park Service, 1976.

Bartley, Nancy. "Canoe Culture Flourishes." *Seattle Times,* August 3, 2009: B1.

Blanchard, Norman C. with Stephen Wilen. *Knee-Deep in Shavings: Memories of Early Yachting & Boatbuilding on the West Coast*. Victoria, B.C.: Horsdal & Schubart, 1999.

BOLA Architecture + Planning, National Register of Historic Places, *Fort Lawton Historic District*, Seattle, King County, Washington, National Register #45KI00670.

Chapman, Patrick F. *The Willits Brothers and Their Canoes: Wooden Boat Craftsmen in Washington State, 1908-1967*. Jefferson, NC: McFarland & Company, Inc., 2005.

Chasan, Daniel Jack. *The Water Link: A History of Puget Sound as a Resource*. Seattle, WA: Washington Sea Grant Program, University of Washington, 1981.

Clallam County Historical Society and Irwin C. Harper. National Register of Historic Places. *Fort Hayden.* Crescent Bay, Clallam County, Washington. National Register #45CA00233.

Clifford, Mary Louise Clifford and J. Candace. *Women Who Kept the Lights: An Illustrated History of Female Lighthouse Keepers*. Williamsburg, VA: Cypress Communications, 1993.

Colson, Elizabeth. *The Makah Indians, A Study of an Indian Tribe in Modern American Society*. Minneapolis: University of Minnesota Press, 1953.

Darby, Andrew. *Harpoon: Into the Heart of Whaling*. Cambridge, MA: Da Capo Press, 2008.

Delanty, H. M. *Along the Waterfront*. Grays Harbor, WA: Self-published, 1943.

Delgado, James. National Register of Historic Places. Arthur Foss (Tugboat). Seattle, King County, Washington. National Register #45KI00674.

Dietrich, William. "A Century with Kids." *The Seattle Times,* June 9, 2006.

Dolin, Eric Jay. *Leviathan: The History of Whaling in America*. New York: W. W. Norton and Company, 2007.

Findlay, Jean Cammon and Robin Paterson. *Mosquito Fleet of South Puget Sound*. Charleston, SC: Arcadia Publishing, 2008.

Fowler, Chuck, and Capt. Mark Freeman. *Tugboats on Puget Sound*. San Francisco, CA: Arcadia Publishing, 2009.

Fowler, Chuck, and Puget Sound Maritime Historical Society. *Tall Ships on Puget Sound*. San Francisco, CA: Arcadia Publishing, 2007.

Garfield, Leonard, and Harriet Fish. *Aircraft Warning Service Observation Tower*. National Register of Historic Places Nomination, Washington DC: National Park Service, 1993.

Goddard, Pliny Earle. *Indians of the Northwest Coast*. New York: Cooper Square Publishers, 1972.

Goetzmann, William H. *New Lands, New Men: America and the Second Great Age of Discovery*. New York: Viking, 1986.

Governor's Office of Indian Affairs, Makah Tribe. Accessed November 16, 2010. http://www.goia.wa.gov/Tribal-Information/Tribes/makah.htm.

Governor's Office of Indian Affairs, Quileute Nation. Accessed November 16, 2010. http://www.goia.wa.gov/Tribal-Information/Tribes/quileute.htm.

Governor's Office of Indian Affairs, Quinault Nation. Accessed November 16, 2010. http://www.goia.wa.gov/Tribal-Information/Tribes/quinault.htm.

Governor's Office of Indian Affairs. Accessed November 16, 2010. http://www.goia.wa.gov/Tribal-Information/map.htm.

Graff, Cory. Puget Sound Navy Museum. *Images of America: The Navy in Puget Sound*. San Francisco, CA: Arcadia Publishing, 2010.

Grover, David H. *The Unforgiving Coast: Maritime Disasters of the Pacific Northwest*. Corvallis, OR: Oregon State University Press, 2002.

Hanable, William S. *Lighthouses and Lifesaving on Washington's Outer Coast*. Charleston, SC: Arcadia Publishing, 2008.

Hansen, David M. National Register of Historic Places. *Fort Flagler*. Port Townsend, Jefferson County, Washington. National Register #45JE00084.

—. National Register of Historic Places. *Fort Ward Historic District*. Bainbridge Island, Kitsap County, Washington. National Register #45DT00008.

Harbor Master. *Tacoma Harbor Annua*l. Annual Report, Tacoma: Port of Tacoma, 1927.

Hasenoehrl, RaeJean. *Everett Fishermen*. San Francisco: Arcadia Publishing, 2008.

Hemphill, John A. *West Pointers and Early Washington*. Seattle, WA: West Point Society of Puget Sound, Inc., 1992.

Hermanson, Gideon. National Register of Historic Places. *USS Missouri.* Bremerton, Kitsap County, Washington. National Register #45KP00028.

Hitchman, James A. *The Port of Bellingham, 1920-1970*. Occasional Paper #1, Bellingham: Center for Pacific Northwest Studies, 1972.

Jefferson County Historical Society and Gerald A Hunt, National Register of Historic Places, *Old Fort Townsend State Park*, National Register #45JE00026.

Kushnarev, Evgenii G. *Bering's Search for the Strait*. Edited by E. A. P. Crownhart-Vaughan. Portland, OR: Oregon Historical Society Press, 1990.

Leonard Guss and Associates, Inc. *Volume II Research Report: Multipurpose Harbor Service Craft Requirements Study*. City of Tacoma, 1974.

LeWarne, Charles Pierce. *Utopies on Puget Sound 1885-1915*. Seattle, WA: University of Washington Press, 1975.

Lower Elwha Klallam Tribe. Accessed November 16, 2010. http://www.elwha.org/tsewhitzen/trading.html.

Mason, Otis T. "Pointed Bark Canoes of the Kutenai and Amur."

McKinney, Sam. *Sailing With Vancouver*. Victoria, British Columbia, Canada: Touch-Wood Editions, 2004.

Mills, Claudia E. and Colin O. Hermans. "Historical Centennial Timeline for the University of Washington's Friday Harbor Laboratories: 1903-2005." F*riday Harbor Laboratories*. Accessed November 9, 2010. http://faculty.washington.edu/cemills/FHLTimeline.html.

Morgan, Murray. *Puget's Sound: A Narrative of Early Tacoma and the Southern Sound.* Seattle, WA: University of Washington Press, 1979.

Neal, Carolyn and Thomas Kilday Janus. P*uget Sound Ferries: From Canoe to Catamaran*. Sun Valley, CA: American Historical Press, 2001.

Nelson, Humphrey. *The Little Man and the Little Oyster*. Belfair, WA: Mason County Historical Society, 1990.

Newell, Gordon R. *Ships of the Inland Sea: The Story of the Puget Sound Steamboats.* Portland, OR: Binfords & Mort, 1960.

—. *S O S North Pacific: Tales of Shipwrecks off the Washington, British Columbia and Alaska Coasts*. Portland, OR: Binfords & Mort, 1955.

Noble, Dennis. "The Coast Guard in the Pacific Northwest." Accessed October 19, 2010. The United States Coast Guard. 1976. http://www.uscg.mil/history/articles/CGPacNW.pdf.

—. *The Coast Guard in the Pacific Northwest*. Coast Guard Bicentennial Series. US Coast Guard, ca. 1990.

Olson, Ronald L. "The Quinault Indians." In *The Quinault Indians and Adze, Canoe and House Types of the Northwest Coast*. Seattle: University of Washington Press, 1967.

Olympic Coast National Marine Sanctuary. "The St. Nicholas Shipwreck." *Olympic Coast National Marine Sanctuary*. Accessed November 5, 2010. http://olympiccoast.noaa.gov/living/history_and_culture/shipwrecks/stnicholas.html.

Parametrix and Berk & Associates. *Washington State National Maritime Heritage Area Feasibility Study.* Feasibility Study, Department of Archaeology and Historic Preservation, Washington State, Olympia: Washington State Department of Archaeology and Historic Preservation, 2010.

Pethick, Derek. *First Approaches to the Northwest Coast*. Seattle: University of Washington Press, 1979.

Pickens, Steven J. *Ferries of Puget Sound*. Charleston, SC: Arcadia Publishing, 2005.

Poling, Sr., Jim. *The Canoe: An Illustrated History*. Woodstock, VT: The Countryman Press, 2000.

Puget Sound Maritime Historical Society. *Images of America: Maritime Seattle*. Chicago, IL: Arcadia Publishing, 2002.

Roberts, Bruce. *Pacific Northwest Lighthouses: Oregon to the Aleutians*. Old Saybrook, CT: The Globe Pequot Press, 1997.

Roy, Bruce Le, ed. *Historic Ports of Puget Sound*. Tacoma, WA: Washington State Historical Society, 1967.

Russell, Steven J. *Kalakala: Magnificent Vision Recaptured*. Seattle, WA: Puget Sound Press, 2002.

Scheina, Dr. Robert. "Coast Guard History." *Commandant's Bulletin*, August 4, 1985: 11-34.

Seattle Daily Times. "Rites to Be Held For Ted Geary." May 20, 1960: 42.

Sharff, Virginia, and Carolyn Brucken. *Home Lands: How Women Made the West*. Berkeley: University of California Press, 2010.

Slotemaker, Terry. *Fidalgo Fishing*. Anacortes, WA: Anacortes Museum, 2005.

Steven, Richard. "Instrumental Quileute Elder - Obituary." *Seattle Times*, October 8, 2009: B2.

Stork, Mike. *Foss Maritime Company*. San Francisco, CA: Arcadia Publishing, 2007.

Strobridge, Truman R. "Chronology of Aids to Navigation and the United States Lighthouse Service: 1716-1939." United States Coast Guard. December 14, 2009. http://www.uscg.mil/history/articles/h_USLHSchron.asp.

Swan, James G. *The Northwest Coast*. Seattle: University of Washington Press, 1977.

Tacoma Harbor Annual. Annual Report, Tacoma: Port of Tacoma, 1927.

The Center for Wooden Boats. http://www.cwb.org/south-lake-union/online-museum/boat-catalog/thunderbird-barbaree.

United States Coast Guard. *U.S. Coast Guard: A Historical Overview*. Accessed October 19, 2010. http://www.uscg.mil/history/articles/h_USCGhistory.asp.

—. *United States Coast Guard - Units by State*. Accessed November 5, 2010. http://www.uscg.mil/d13/units/state.asp.

—. "Women Lighthouse Keepers." Last modified April 13, 2011. http://www.uscg.mil/history/uscghist/Women_Keepers.asp.

US Navy. CNIC | *Naval Base Kitsap*. Commander, Navy Installations Command (CNIC). Accessed November 17, 2010. https://www.cnic.navy.mil/Kitsap/AboutCNIC/index.htm.

—. "History of Installation: Naval Base Kitsap Keyport." Accessed November 17, 2010. https://www.cnic.navy.mil/Kitsap/AboutCNIC/index.htm.

—. "History of the Installation: Manchester Fuel Facility." Accessed November 17, 2010. https://www.cnic.navy.mil/Kitsap/AboutCNIC/index.htm..

—. CNIC | *Naval Air Station Whidbey Island*. https://www.cnic.navy.mil/Whidbey/AboutCNIC/GeneralInformation/index.htm.

—. CNIC | *Indian Island*. Accessed November 17, 2010. https://www.cnic.navy.mil/Indian_Island/AboutCNIC/index.htm.

—. *Navy Yard Puget Sound*. National Register of Historic Places Nomination, Washington DC: National Park Service, Undated.

Viola, Herman J., and Carolyn Margolis. *Magnificent Voyagers: The U.S. Exploring Expedition, 1838-1842*. Washington, D.C.: Smithsonian Institution Press, 1985.

Washington State Department of Ecology. "Frequently Asked Questions: Shorelands and Environmental Assistance, Shoreline Master Programs." April 2010.

Washington State Department of Ecology. "Shoreline Master Program." Accessed May 2, 2011. http://www.ecy.wa.gov/programs.

Washington State Department of Natural Resources. "Aquatic Lands Habitat Conservation Plan. Accessed May 2, 2011. http://www.dnr.wa.gov/Research-Science/Topics/AquaticHCP.

Washington State Department of Natural Resources. "Available GIS Data." Accessed January 2011. http://fortress.wa.gov/dnr/app1/dataweb/dmmatrix.html.

Wells, R. E. *A Guide to Shipwreck Sites Along the Washington Coast*. Sooke, British Columbia: R. E. Wells, 1989.

Worthington, Gary. *Cama Beach: A Guide and a History*. Olympia, WA: TimeBridges Publishers, 2008.

Wright, E. W., ed. *Lewis & Dryden's Marine History of the Pacific Northwest*. New York: Antiquarian Press, Ltd., 1961.

Writers' Program of the Work Project Administration in the State of Washington. *Washington: A Guide to the Evergreen State*. Portland: Binford & Mort, 1941, revised 1950.

Zimmerman, Heinrich. *The Third Voyage of Captain Cook*. Fairfield, WA: Ye Galleon Press, 1988.