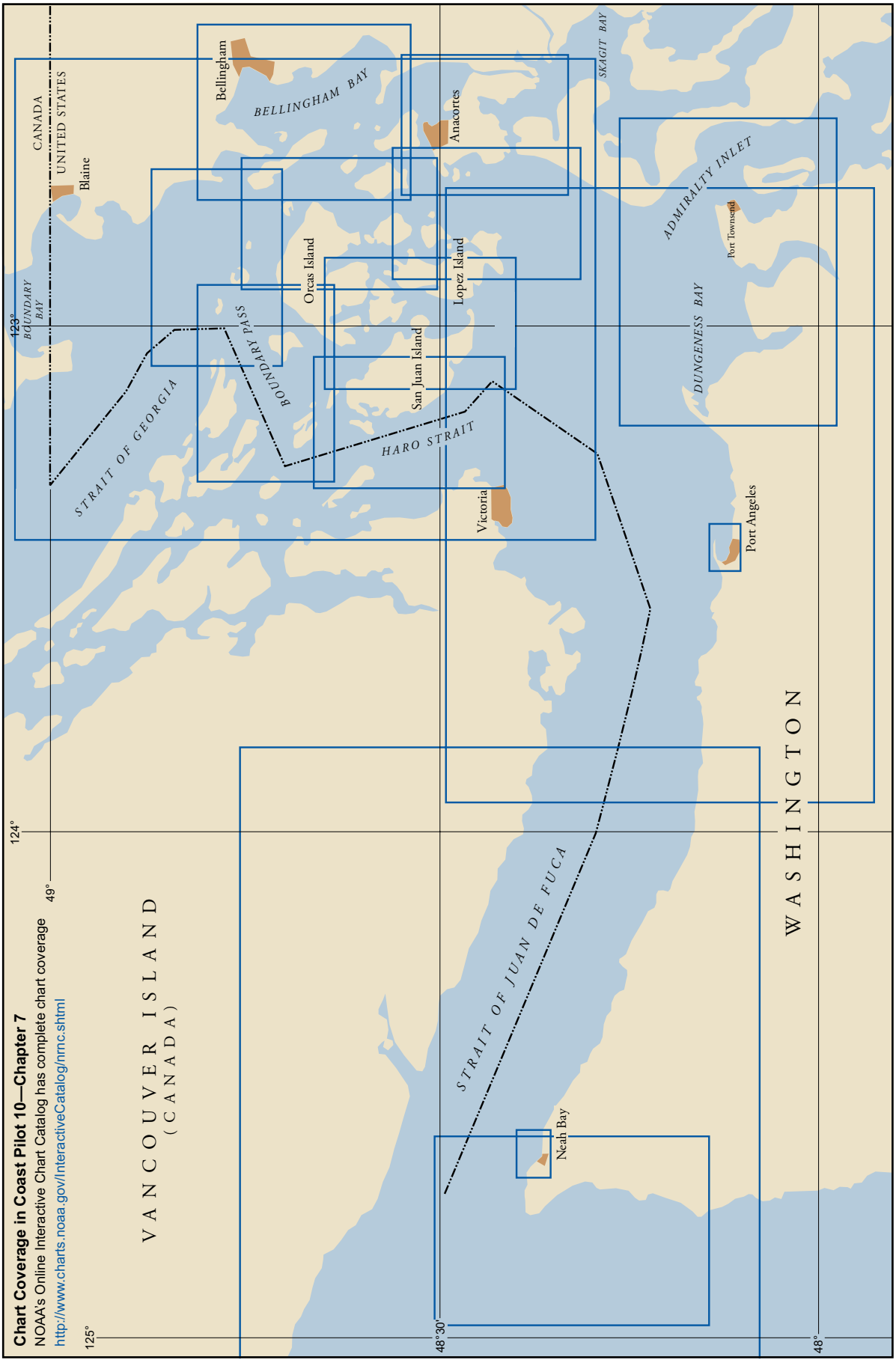
Chart Coverage in Coast Pilot 10—Chapter 7
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nmc.shtml
CANADA
UNITED STATES
Blaine
Bellingham
BELLINGHAM BAY
Anacortes
SKAGIT BAY
ADMIRALTY INLET
Port Townsend
DUNGENESS BAY
Orcas Island
Lopez Island
San Juan Island
BOUNDARY PASS
BOUNDARY BAY
STRAIT OF GEORGIA
HARO STRAIT
Victoria
Port Angeles
VANCOUVER ISLAND
(CANADA)
WASHINGTON
STRAIT OF JUAN DE FUCA
Neah Bay
123°
124°
125°
49°
48°30'
48°

Strait of Juan De Fuca and Georgia, Washington

(1) This chapter includes the Strait of Juan de Fuca, Sequim Bay, Port Discovery, the San Juan Islands and its various passages and straits, Deception Pass, Fidalgo Island, Skagit and Similk Bays, Swinomish Channel, Fidalgo, Padilla, and Bellingham Bays, Lummi Bay, Semiahmoo Bay and Drayton Harbor and the Strait of Georgia as far north as Burrard Inlet. The more important U.S. harbors described are Neah Bay, Port Angeles, Friday Harbor, La Connor, Anacortes, Bellingham and Blaine Harbor. Deep-draft vessels use the harbors at Port Angeles, Anacortes, and Bellingham, the principal cities in the area. The Canadian coasts are only briefly described. (See **Pub. 154, Sailing Directions (Enroute) for British Columbia**, published by the National Geospatial-Intelligence Agency, and the **Sailing Directions PAC 201, Juan de Fuca Strait and Strait of Georgia**, published by the Canadian Hydrographic Service, for detailed information on Canadian waters.)

(2) **Strait of Juan de Fuca** separates the south shore of Vancouver Island, Canada, from the north coast of the State of Washington. The entrance to the strait lies between parallels 48°23'N., and 48°36'N., on the meridian of 124°45'W. This important body of water is the connecting channel between the ocean and the interisland passages extending south to Puget Sound and north to the inland waters of British Columbia and southeastern Alaska.

(3) The commerce of this region is extensive, both foreign and domestic. Vast quantities of lumber, fish, grain and general merchandise are exported, while the manufacturing and shipbuilding industries are important. Several transcontinental railroads have their terminals on Puget Sound. There are many steamer lines, foreign and domestic, operating from this area to places across the Pacific or through the Panama Canal, in addition to the coastal vessels.

(4) At its entrance and for 50 miles east to Race Rocks, the strait is about 11 miles wide and then widens to about 16 miles for 30 miles east to Whidbey Island, its east boundary. The waters as a rule are deep until near the shore with few outlying dangers, most of which are in the east part. The shores on both sides are heavily wooded, rising rapidly to elevations of considerable height, and, except in a few places, are bold and rugged.

(5) The navigation of these waters is relatively simple in clear weather. The aids to navigation are numerous. In thick weather, because of strong and irregular currents, extreme caution and vigilance must be exercised. Navigators not familiar with these waters should take a pilot.

(6)

COLREGS Demarcation Lines

(7) The International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) apply on all the waters of the Strait of Juan de Fuca, Haro Strait, and Strait of Georgia. (See **33 CFR 80.1385** and **80.1390**, chapter 2.)

(8)

Traffic Separation Scheme

(9) There are traffic separation schemes in the approaches and within the Strait of Juan de Fuca, Puget Sound, Haro Strait, Boundary Pass and the Strait of Georgia. See **33 CFR 167.1** through **167.15**, chapter 2, for general regulations on the schemes. Limits and regulations detailing specific schemes can also be found in chapter 2 (reference the following table.)

(10)

Traffic Separation Scheme Regulations	
Strait of Juan de Fuca (approaches to)	33 CFR 167.1300 through 167.1303
Strait of Juan de Fuca	33 CFR 167.1310 through 167.1315
Puget Sound	33 CFR 167.1320 through 167.1323
Haro Strait, Boundary Pass, Strait of Georgia	33 CFR 167.1330 through 167.1332

(11) A V-AIS marks the precautionary area west-northwest of Cape Flattery and a lighted buoy marks the precautionary area between Race Rocks and Port Angeles and is equipped with a RACON. These ATONS assist in the separation of inbound and outbound vessels transiting the Strait of Juan de Fuca and eliminating, as much as possible, the cross-vessel traffic that can occur between the entrance to the Strait of Juan de Fuca at Cape Flattery and the pilot stations at Port Angeles and Victoria, British Columbia. It is recommended that all vessels navigate so as to leave these buoys to port.

(12) Vessels so desiring may while transiting the Strait of Juan de Fuca contact the Puget Sound Vessel Traffic Service by calling SEATTLE TRAFFIC on VHF-FM channel 5A to receive desired information on known traffic, aids to navigation discrepancies and locally hazardous weather conditions. In Admiralty Inlet, south of a line between Nodule Point on Marrowstone Island and Bush Point on Whidbey Island, vessels should use VHF-FM channel 14 to contact SEATTLE TRAFFIC. VHF-FM channel 13 should be used to make passing arrangements in U.S. waters and is Seattle Traffic's secondary frequency; however, because channel 13 is not used in Canadian waters as the primary bridge-to-bridge

(18)

Washington State Requirements—Reporting Oil Spills and Vessel Emergencies

All vessels must report oil spills or potential oil spills to both Washington State (800–258–5990) and the National Response Center (800–424–8802). Tank vessels and cargo and passenger ships 300 gross tons or larger must make notifications to Washington State for vessel emergencies, including a loss or serious degradation of propulsion, steering, means of navigation, electrical generating capability and seakeeping capability constituting a substantial threat of pollution affecting Washington State natural resources. In addition to any notifications to the USCG, the owner or operator must notify the state of any vessel emergency that results in the discharge or substantial threat of a discharge of oil to state waters or that may affect the natural resources of the state within one hour of the onset of the emergency.

Tug Escorts for Laden Tankers

Any laden oil tanker, whether enrolled or registered, proceeding east of a line extending from Discovery Island Light (British Columbia, CN) south to New Dungeness Light (Washington State, US) must be escorted by a tug or tugs with an aggregate shaft horsepower equivalent to five percent of the deadweight tons of that tanker. For additional details see Washington state law at 88.16 Revised Code of Washington (RCW).

Emergency Response Tug at Neah Bay

An industry-funded emergency response tug is located at Neah Bay at the entrance to the Strait of Juan de Fuca. The tug is available 24 hours a day and can be underway within twenty minutes of a decision to deploy. The purpose of the tug is to assist vessels having propulsion and steering failures or that are directed by either the U.S. or Canadian Coast Guards to obtain towing assistance. Among other capabilities, the tug is intended to be able to make up to, stop, hold, and tow a drifting or disabled vessel of 180,000 metric dead weight tons in severe weather conditions. The tug can be contacted through the USCG VTS or the Puget Sound Marine Exchange.

Washington State Vessel Inspections

The Washington State Department of Ecology regulates cargo and passenger vessels and tank vessels operating in Washington waters. A cargo vessel is any self-propelled vessel in commerce that is 300 gross tons or more. A passenger vessel is any vessel 300 gross tons or more with a fuel capacity of at least 6,000 gallons that carries passengers for compensation. A tank vessel is a ship that is constructed or adapted to carry, or that carries, oil in bulk as cargo or cargo residue. Washington State Ecology inspectors may conduct vessel inspections on regulated cargo, passenger, and fishing vessels when in Washington waters. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/guidance-for-oil-industry/vessel-information.

Oil Transfer Requirements

Safe bunkering procedures must be followed during fueling operations. For vessels 300 gross tons or greater, Washington State Ecology inspectors may conduct inspections of these regulated oil transfers on vessels receiving fuel for propulsion within Washington waters. Details can be found in state regulations at Washington Administrative Code (WAC) 317-40. Additional information—
www.ecology.wa.gov/regulations-permits/guidance-technical-assistance/requirements-for-bunkering.

Tank vessels delivering oil in bulk to a non-recreational vessel or facility within Washington waters must meet state oil transfer requirements. They may also be subject to Washington State oil transfer inspections for these regulated oil transfers. Details can be found in WAC 173-184. Additional information—
www.ecology.wa.gov/regulations-permits/compliance-enforcement/oil-transfers.

For a transfer of more than 100 gallons of bulk oil to a facility or non-recreational vessel, the delivering vessel must submit an Advance Notice of Transfer (ANT) report to Ecology. This ANT must be submitted 24 hours prior to the transfer for facilities or within the timeframe required by local USCG Captain of the Port. The ANT report can be made either: online using the state website at: *https://secureaccess.wa.gov/ecy/ants*, by e-mail to *OilTransferNotifications@ecy.wa.gov*, or by fax to 360–407–7288 or 800–664–9184.

Contingency Plan Requirements

Tank vessels and cargo and passenger ships 300 gross tons or larger transiting Washington waters must either have a Washington State Department of Ecology approved oil spill contingency plan or be a member of a non-profit cooperative that provides oil spill response capabilities consistent with their Washington State approved contingency plan. The non-profit cooperative for the Columbia River is the Maritime Fire & Safety Association (MFSA) and for Puget Sound and Grays Harbor is Washington State Maritime Cooperative. Also available is the National Response Corporation, a multiple vessel plan. Additional information—
www.ecology.wa.gov/regulations-permits/plans-policies/contingency-planning-for-oil-industry.

radiotelephone channel, vessels are encouraged to use channel 5A to make passing arrangements in the Strait of Juan de Fuca. Preliminary calls to SEATTLE TRAFFIC on VHF-FM channel 16 are not required or desired. (See Traffic Separation Schemes, chapter 1, for additional information.)

(13) The Canadian Government recommends that ships conduct themselves in accordance with the navigational procedures set forth in the Ship Routing Regulations when navigating in or near the traffic separation scheme in Canadian waters. Mariners are advised that the Canadian Ship Routing Regulations are based upon the International Maritime Organization's "General Principles of Ships' Routing," except for a relaxation that permits vessels engaged in fishing to proceed in any direction in or near traffic lanes and on the high seas. (Canadian Ship Routing Regulations are published in the Annual Edition of Canadian Notices to Mariners.)

(14) Complete details of the traffic separation schemes and the vessel traffic management and information system for the coastal waters of southern British Columbia are given in the following:

(15) Pub. No. 154, Sailing Directions Enroute, British Columbia, published by the National Geospatial-Intelligence Agency;

(16) Sailing Directions PAC 201, Juan de Fuca Strait and Strait of Georgia, published by the Canadian Hydrographic Service, and

(17) Annual Edition of Canadian Notices to Mariners, published by the Canadian Coast Guard.

(19)

Vessel Traffic Service

(20) The U.S. Coast Guard operates **Puget Sound Vessel Traffic Service (PSVTS)** in the U.S. waters of the Strait of Juan de Fuca and the Strait of Georgia, Rosario Strait, Puget Sound, Hood Canal, Possession Sound, the San Juan Islands Archipelago and navigable waters adjacent to these areas; the system is mandatory. Vessel operating procedures and designated radiotelephone frequencies are published in **33 CFR 161**, chapter 2, and/or the **Puget Sound Vessel Traffic Service User Manual**, available online at *uscg.mil/d13/psvts*. Mariners should consult these sources for applicable rules and reporting requirements. The PSVTS is a full-service VTS providing Information Service, Traffic Organization Service and Navigation Assistance Services to vessels operating in the VTS area. The system is designed to prevent collisions and groundings and to protect the navigable waters concerned from environmental harm resulting from such collisions and groundings.

(21) A **Cooperative Vessel Traffic Service (CVTS)** has been established in the Strait of Juan de Fuca region, based on an agreement between the United States and Canada. Operated by the U.S. Coast Guard and the Canadian Coast Guard, the system is intended to enhance safe and expeditious vessel movement and to minimize risk of pollution to the marine environment; the system is mandatory. Regulations which apply to the CVTS can be found in **33 CFR 161.1** through **161.23** and **161.55**, chapter 2. The CVTS exchange lines delineating the service boundaries and frequency change lines between Vessel Traffic Center management authorities are detailed in the **Puget Sound VTS User's Manual** which can be found at *www.pacificarea.uscg.mil/VTSPugetSound/*.

(22) Mariners are advised that **Ferry Routes** may differ from the established Vessel Traffic Services, Traffic Separation Schemes and Cooperative Vessel Traffic Management Systems for the entire Strait of Juan de Fuca and Puget Sound area.

(23) In accordance with the Cooperative Vessel Traffic Service, the United States and Canada, in cooperation with industry and the British Columbia Coast Pilots have established a **Special Operating Area (SOA)** at the intersection of Haro Strait and Boundary Pass in the vicinity of Turn Point Light (48°41'20"N., 123°14'15"W.). This area enhances order and predictability and the efficient and safe movement of goods and services and further reduces the risk of accidents with respect to vessels transiting the boundary waters of Haro Strait and Boundary Passage in the vicinity of Turn Point on Stuart Island, Washington. Complete information on this special operating area can be found in the **Puget Sound Vessel Traffic Service User's Manual**.

(24)

Regulated navigation area

(25) Due to heavy vessel concentrations, the waters of the Strait of Juan de Fuca, the San Juan Islands, the Strait of Georgia and Puget Sound, and all adjacent waters, are a regulated navigation area. (See **33 CFR 165.1** through **165.13** and **165.1301**, chapter 2, for regulations.)

(26)

Caution

(27) Since logging is one of the main industries of the region, free-floating logs and submerged deadheads or sinkers are a constant source of danger in the Strait of Juan de Fuca and Puget Sound. The danger is increased during freshets and after storms and unusually high tides. **Deadheads** or **sinkers** are logs that have become adrift from rafts or booms, have become waterlogged and float in a vertical position with one end just awash, rising and falling with the tide.

(28)

Currents, Cape Flattery to Race Rocks

(29) The currents may attain velocities of 2 to 4 knots, varying with the range of tide, and are influenced by strong winds. East of Race Rocks, in the wider portion of the strait, the velocity is considerably less. At Race Rocks and Discovery Island the velocity may be 6 knots or more.

(30) The **flood current** entering the Strait of Juan de Fuca sets with considerable velocity over Duncan and Duntze Rocks, but, instead of running in the direction of the channel, it has a continued set toward the Vancouver Island shore which is experienced as far as Race Rocks.

(39)

METEOROLOGICAL TABLE – COASTAL AREA OFF SEATTLE, WA
Between 48°N to 50°N and 122°W to 129°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	3.6	2.8	2.3	1.2	0.8	0.6	0.3	0.3	0.5	1.7	3.1	3.4	1.6
Wave Height > 9 feet [1]	17.4	18.0	16.8	15.0	6.7	6.1	1.9	2.1	4.7	16.0	24.0	30.5	12.3
Visibility < 2 nautical miles [1]	11.4	10.4	8.1	7.1	6.6	6.7	9.2	14.0	12.0	13.2	11.7	12.1	10.3
Precipitation [1]	24.4	24.4	19.6	16.7	13.5	10.8	7.5	5.8	9.2	16.6	24.0	24.9	15.6
Temperature > 69° F	0.0	0.0	0.0	0.1	0.5	1.6	3.0	2.8	1.2	0.3	0.0	0.0	0.9
Mean Temperature (°F)	44.0	45.3	46.1	48.7	52.8	56.3	58.8	59.3	58.2	53.7	48.3	45.5	52.1
Temperature < 33° F [1]	3.3	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.9	0.4
Mean RH (%)	84	84	82	82	82	82	84	85	84	84	83	84	83
Overcast or Obscured [1]	46.3	43.3	34.5	32.8	32.7	33.1	32.6	32.9	30.6	36.5	38.4	41.3	35.8
Mean Cloud Cover (8^{ths})	6.2	6.0	5.5	5.5	5.4	5.5	5.1	5.0	4.7	5.4	5.9	6.0	5.5
Mean SLP (mbs)	1014	1015	1014	1016	1017	1017	1018	1017	1017	1016	1014	1014	1016
Ext. Max. SLP (mbs)	1041	1057	1041	1060	1044	1042	1048	1040	1050	1041	1043	1048	1060
Ext. Min. SLP (mbs)	951	974	967	977	987	988	993	990	973	967	966	964	951
Prevailing Wind Direction	SE	SE	SE	NW	NW	NW	NW	NW	NW	SE	SE	SE	NW
Thunder and Lightning [1]	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.2

[1] Percentage Frequency

The flood current velocity is greater on the north shore of the strait than on the south.

(31) The **ebb current** is felt most along the south shore of the strait, and between New Dungeness Light and Crescent Bay there is a decided set south and west, especially during large tides. With the wind and swell against the current, a short choppy sea is raised near the entrance to the strait.

(32) The current movement is complicated by a large daily inequality. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(33) **Tide rips** occur off the prominent points and in the vicinity of the banks. These are particularly heavy off Cape Flattery, Race Rocks, Dungeness Spit and Point Wilson, at times becoming dangerous to small vessels.

(34)

Weather, Straits of Juan De Fuca and Georgia

(35) Winds are strongest from October through March. This results from the numerous winter storms that move through these waters; this is also an area where storms tend to intensify. As low-pressure systems approach the coast, winds strengthen and back to the southeast quadrant, sometimes reaching gale force. After the storm passes, winds veer to the southwest or northwest. Gales usually last less than 1 day, whereas the interval between storms normally varies from 1 to 5 days or up to 2 weeks when a strong high-pressure system settles in. These systems can also present local wind problems in the Georgia Strait. The mountainous terrain of this region plays an important part in determining the direction and speed of the wind. There are normally two wind seasons; winter lasts from October through March, while a summer regime covers the other 6 months.

(36) From October through March, winds at the Pacific entrance to the Strait of Juan de Fuca blow mostly out of the southeast through southwest. Gales blow on 4 to 6 days per month. They can come from any direction; however, southeast winds are consistently the strongest, averaging about 18 knots. Strong southeast winds raise dangerous confused seas off Cape Flattery, when they meet the long, rolling southwest swells that frequent these waters. The frequent strong winds from a south quarter make the Vancouver coast between Cape Cook and Port San Juan a dangerous lee shore. When gales blow from the southwest through west, it is usually safer inside the Strait than out. In general, winds are strongest and gales more frequent in the west end of the Strait. In the open water of the middle of the Strait, winter winds blow mostly out of the east through southeast. Gales occur on about 2 to 4 days per month in the east half. The south shore is protected from the southeast gales; Port Angeles provides good shelter. An approaching storm often sets up strong east winds in the central part of the Strait. This, in turn, sets up a drainage of air from the Georgia Strait, so that winds near the east entrance are frequently from the north through northeast. As the storm moves inland, it produces a reversal of this flow. Winds blow from the west through most of the strait, backing to the southwest in the east. Winds near the west entrance have reached 65 knots with gusts to 90 knots. In the strait, 50-knot winds and 80-knot gusts have been reported.

(37) Summer winds at sea blow mainly from the southwest through northwest around the subtropical Pacific high. Heating of the North American continent helps draw air into the Strait of Juan de Fuca. This sea breeze reinforces the prevailing flow and results in winds up to 30 knots in the late afternoon. The land breeze opposes the normal flow, and calms are often the rule in early morning. Southwest through west winds are most frequent in the Strait of Juan de Fuca.

(38) In few parts of the world is the vigilance of the mariner more called upon than when entering the Strait of Juan de Fuca from the Pacific in fog. Sea fog is the most common type, and it is at its worst from about July through October. Local land fog extends the visibility hazard into the winter. Fog is most frequent at the west end of the Strait. Here, visibilities drop to less than 0.75 mile (1.4km) on about 55 days annually, compared to about 35 days in the east end. Dense fog sometimes hangs over the ocean entrance to the Strait for days at a time; this is most likely during calms or light breezes. It gives the appearance of a wall, and ships entering often run into clear, bright weather before they pass Tatoosh Island. Often the fog is carried east on the west sea breeze. When this happens, the fog usually penetrates farther east along the south shore. It is much more likely to reach Port Angeles or Port Townsend than Victoria. In spring, the east penetration of an infrequent fog is usually limited to Crescent or Freshwater Bays. Often when thick weather prevails in the Strait of Juan de Fuca, skies are clear north of Race Rocks.

(40)

Pilotage, Strait of Juan de Fuca and Puget Sound

(41) Pilotage is compulsory for all foreign vessels and U.S. vessels engaged in foreign trade. Pilotage is optional for U.S. vessels engaged in the coastwise trade with a federally licensed pilot on board.

(42) Puget Sound Pilots serve all U.S. ports and places east of 123°24'W., including Port Angeles, Puget Sound, and adjacent inland waters. The office address is Puget Sound Pilots, 2003 Western Avenue, Suite 200, Seattle, WA 98121; telephone, 206–448–4455 (24 hours), 206–728–6400; Fax 206–448–3405. Pilot station address is 305 Ediz Hook Road, P.O. Box 788, Port Angeles, WA 98362; telephone, 800–221–0234, 360–457–7944; fax 360–452–8566.

(43) Port Angeles has been designated as the pilotage station for all vessels enroute to or from the sea. The pilot station is located on Ediz Hook about 0.7 mile west of Ediz Hook Light. There are two pilot boats; both are 22 meters in length with white hulls and orange houses. The standard day and night signals are displayed. The pilot station and pilot boats are equipped with radar to locate and track vessels; radio communication can be made by calling “Puget Sound Pilots” on VHF-FM channel 13.

(44) Pilotage should be arranged between 0800 and 1700 at least 24 hours in advance of inbound ETA through the vessel’s agent, by direct telephone communication with Puget Sound Pilots at the previously mentioned telephone numbers or the Marine Exchange of Puget Sound (telephone: 206–443–3830 or Telex 6734358 “Matex”). If subsequent conditions make it necessary, an amended estimated time of arrival should be made. Inbound vessels are requested to reaffirm their estimated time of arrival to the pilot boarding station when they are passing Cape Flattery and again when they are one hour away.

(45) Loaded petroleum tankers requiring a pilot should proceed to position 48°09'54"N.,123°24'19”W., (1.5 miles north of the east end of Ediz Hook); all other vessels to position 48°09'24"N.,123°24'00"W., (1.0 mile north of the east end of Ediz Hook). A pilot ladder should be rigged in compliance with SOLAS regulations on the leeward side about 1 meter above the water. When approaching the boarding area, vessels are requested to monitor VHF-FM channel 13 and maintain a steady course and speed of about 6 knots when the pilot boat comes alongside.

(46)

Towage

(47) Tugs are stationed at Port Angeles. Arrangements are usually made in advance through ships’ agents.

(48)

Quarantine, customs, immigration and agricultural quarantine.

(49) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(50) Quarantine is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(51)

Strait of Juan de Fuca (Canada)

(52)

Strait of Juan de Fuca (Canada)

(53) Carmanah Point is described in the previous chapter. **Bonilla Point**, the north entrance point at the west end of the strait, is about 1.8 miles east-southeast from Carmanah Light. Inland of Bonilla Point, which slopes gradually to the sea, the mountains attain heights of over 3,500 feet and are heavily wooded. A reef extends 0.5 mile off the point, and the shores should be given a berth of at least 1.5 miles.

(54) From Bonilla Point the coast trends in a southeast direction for 9.5 miles to Owen Point. It is nearly straight, rocky, and bluff, with high mountains rising immediately behind it; all are heavily wooded.

(55) **Port San Juan** offers the first anchorage on the north shore within the entrance to the Strait of Juan de Fuca. The port is conspicuous from seaward, appearing as a deep gap between two mountain ranges.

(56) The entrance between **Owen Point** and **San Juan Point**, 1.7 miles wide and 3.5 miles long, is 13 miles northeast of Cape Flattery Light. It is marked by a lighted whistle buoy.

(57) The port is open to southwest winds, and a heavy sea rolls in when a moderate gale is blowing from that direction. Though it is possible that a vessel with good ground tackle could ride out a gale if anchored in the most sheltered part, it is recommended that with any indication of southwest gales a vessel should weigh anchor immediately and, if the vessel’s draft is 16 feet or less, seek shelter in Neah Bay; vessels of deeper draft should proceed to Port Angeles.

(58) Anchorage may be had in 6 to 9 fathoms anywhere in Port San Juan; a good position is in 5½ fathoms about 1 mile from the beach at the head of the port.

(59) **Cerantes Rocks**, about 300 yards southwest from San Juan Point, include several high pinnacle rocks with a few trees growing on them. About 800 yards north of these rocks and 300 yards from shore is another reef partly uncovered.

(60) **Port Renfrew** is a settlement on the southeast side of Port San Juan, about 2 miles northeast of San Juan Point. A T-head pier has depths of 15 feet alongside.

(61) From Port San Juan the coast trends southeast for 23.5 miles to Sheringham Point. This stretch of coast presents no prominent features. The country is thickly wooded, and the land rises to a considerable elevation. The points, some of which are bare on their extremities, are not prominent nor are they easily identified, except from close inshore.

(62) A Canadian Armed Forces **firing** and **practice exercise area** is established in the vicinity of Sheringham Point and San Simon Point about 8 miles to the west. (See Annual Edition of Canadian Notices to Mariners for area limits, types of practices, warning signals, etc.)

(63) Between Port San Juan and Race Rocks, fish traps and broken piles are reported to extend 0.5 mile offshore in places.

(64)

Sheringham Point to Discovery Island

(65) **Sheringham Point** is marked by a light. Victoria marine radio station VAK is at Sheringham Point.

(66) From Sheringham Point the coast continues in a series of bays and inlets for 16.5 miles to Race Rocks.

(67) **Beechey Head**, 11.5 miles east-southeast of Sheringham Point, is bold, wooded and steep-to. Vessels bound up the strait and passing outside Race Rocks should give Beechey Head a berth of 2 miles.

(68) **Race Rocks**, 5 miles east of Beechey Head, are a cluster of bare low rocks from 0.5 mile to almost 1.5 miles from shore. Foul ground extends for 0.5 mile in all directions from the light; dangerous overfalls and races occur during bad weather. A light and sound signal are on the largest rock of the group, and a lighted buoy marks the southeast rock of the group. The tidal currents in Race Passage and in the vicinity of Race Rocks attain a velocity of 4 to 6 knots at times, and dangerous tide rips are formed.

(69) **Firing practice** and **exercise areas** of the Canadian Armed Forces are east of Race Rocks in the approaches to Esquimalt and Victoria Harbors. (See the Annual Edition of Canadian Notices to Mariners.)

(70) Foul ground, due to dumping of heavy steel wire mesh material, is 3.2 miles west from Race Rocks Light.

(71) East of Race Rocks the Strait of Juan de Fuca expands to a width of about 16 miles and extends for 30 miles east-northeast to the entrance to Admiralty Inlet on the south and Rosario Strait on the north.

(72) A 25-fathom bank lies 8.5 miles southeast of Race Rocks along the steamer track from Race Rocks Light to Point Wilson Light. The west edge of this bank is sometimes sharply defined by a line of ripples with glassy calm water to the east.

(73) **Bentinck Island**, 1 mile northwest of Race Rocks Light, is fringed with kelp on its south and east sides. **Pedder Bay, Parry Bay** and **Royal Roads**, separated by William Head and **Albert Head**, form the coast between Bentinck Island and the west entrance to Esquimalt Harbor.

(74) A **027°43'–207°43' measured nautical mile** has been established on the northwest shore of Parry Bay. Range beacons, consisting of fluorescent orange diamond-shaped daymarks, mark the northeast and southwest ends of the measured course.

(75) A **prohibited area** has been established in Parry Bay by the Canadian Government. No vessel may anchor in the area without permission.

(76) **William Head** is a comparatively low promontory extending about 0.5 mile northeast of **Ned Point**. Close west of William Head is **Quarantine Cove**, on the east shore of which are the conspicuous red brick buildings of the former quarantine station, now used as a penitentiary. Unauthorized vessels should not approach William Head within 200 yards.

(77) Anchorage affording protection from west weather may be had in 7 fathoms about 0.5 mile north of William Head and about 1,200 yards from the mainland.

(78) **Constance Bank**, 6.8 miles east of William Head Light, has general depths of 8 to 13 fathoms. It is about 2 miles long and 1 mile wide, within the 20-fathom curve. The bottom is rocky, and tide rips form in this vicinity. Vessels should not attempt to anchor on the bank.

(79) **Albert Head** is 3.3 miles northeast of William Head. **Fisgard Island**, on the west side of the entrance to Esquimalt Harbor, is marked by a light. Its red sector covers **Scroggs Rocks** off the east entrance point. Scroggs Rocks are marked by a light.

(80) **Esquimalt Harbor**, about 3 miles north-northeast of Albert Head, affords safe and ample anchorage and can be entered at any time. The entrance channel has general depths of 8 fathoms. Depths within the entrance gradually decrease for 1.5 miles north to **Cole Island**, above which the head of the harbor dries.

(81) **Victoria Harbor**, landlocked and well protected, is about 2 miles east-southeast of Esquimalt Harbor and can accommodate large vessels. A U.S. Immigration station is in Victoria.

(82) Victoria Harbor is entered between **Macaulay Point** on the west and the breakwater extending from **Ogden Point** on the east; the breakwater is marked by a light. Vessels requiring a pilot are requested to notify **"Pilots Victoria"** by radio station **VAK** at least 6 hours in advance of their estimated time of arrival. The harbor extends for more than 0.5 mile north to **Shoal Point** on the east side, and thence trends east to **James Bay**. From the north part of James Bay, the upper harbor, which is

crossed by three bridges, extends about 0.8 mile north-northwest to **Selkirk Water**, the west extremity of which is connected to **Portage Inlet**.

(83) **Brotchie Ledge**, the only outlying danger, about 200 yards long within the 5-fathom curve, lies 0.6 mile south of Ogden Point. The ledge has a least depth of 12 feet and is marked by a light.

(84) **Clover Point**, 2 miles east-southeast of the entrance to Victoria Harbor, is low, bare of trees, and steep-to. Strong tide rips form off the point.

(85) **Trial Islands**, 4 miles east of Victoria Harbor, are bare and rocky; from most directions the two islands appear as one. The islands are marked by a light. The south and larger island is 80 feet high, and from **Staines Point**, its south extremity, a rocky ledge that uncovers 2 feet extends about 100 yards. Severe tide rips form off Staines Point, especially on the flood tidal current, which attains a velocity of 3 to 6 knots during large tides. The point should be given a wide berth.

(86) **Discovery Island**, 2 miles east-northeast of **Gonzales Point**, lies off the junction of Haro Strait and the Strait of Juan de Fuca. The island is wooded, and near its southeast tip, **Pandora Hill** attains a height of about 125 feet. The island is marked by a light on the east side. The shores on all sides of the island are fringed with rocks in some places extending as far as 600 yards offshore.

(87)

Strait of Juan de Fuca (east end)

(88)

Strait of Juan de Fuca (east end)

(89) **Hein Bank**, with a least depth of 2½ fathoms, lies 8.5 miles southeast of Discovery Island; it is about 2 miles long in a north direction, within the 10-fathom curve, and 0.8 mile wide. The shoalest part of the bank is covered with thick kelp in the summer. It is marked by a lighted buoy.

(90) **Smith Island**, 5 miles west of Whidbey Island and 8 miles east-southeast of Hein Bank, is irregular in shape and about 0.5 mile long. The east end is low but rises abruptly to an elevation of 55 feet at its west end, terminating in a white perpendicular cliff composed of sand and gravel. A rocky bank, covered with kelp, extends about 2 miles west of the island over depths of 3 to 6 fathoms. A rock that bares at lowest tides is about 0.3 mile west of Smith Island. Strong currents set in and around the shoal area, especially on the flood, and deep-draft vessels should keep well outside the 10-fathom curve to avoid being set into danger. **Smith Island Light** (48°19'14"N., 122°49'51"W.), 55 feet above the water, is shown from a 50-foot skeleton tower on a multi-pile structure with a white and black dayboard. The light is obsured from 068° to 084°.

(91) A **restricted area** of an air-to-surface weapon range is west of Smith Island. (See **33 CFR 334.1180**, chapter 2, for limits and regulations.)

(92) **Minor Island**, small, low, and rocky, lies 1 mile northeast of Smith Island and at lowest tide is connected with it by a gravel and boulder spit.

(93) The northernmost part of the western shore of **Whidbey Island** forms the east end of the Strait of Juan de Fuca. This part of the island has a uniform sandy shore backed by low and rolling upland of farm and wooded areas. A marina at Oak Harbor, on the east side of the island, has electricity, gasoline, diesel fuel and pumpout facility.

(94) **Naval restricted areas** are adjacent to the northernmost part of the west shore of Whidbey Island. (See **33 CFR 334.1200**, chapter 2, for limits and regulations.)

(95) The aerolight (48°20.9'N., 122°40.2'W.) at Ault Field is conspicuous.

(96)

Neah Bay

(97) On the south side of the Strait of Juan de Fuca the coast trends east for 4 miles from Cape Flattery to **Koitlah Point**, the west point of Neah Bay. The shores are rugged, and the country is heavily timbered.

(98) **Neah Bay**, about 5 miles east of Cape Flattery, is used extensively by small vessels as a harbor of refuge in foul weather. Its proximity to Cape Flattery and ease of access at any time make the anchorage very useful. It is protected from all but east weather.

(99) **Baada (Baadah) Point**, the east entrance point to Neah Bay, is rocky and grass covered for some distance back from the shore. **Waadah Island**, 0.3 mile north of Baada Point, is 0.5 mile long, high, and wooded. A light marks the north and south end of the island. A stone breakwater extends from the west side of the bay to about the middle of Waadah Island. A reef and foul ground extend 0.2 mile from the southwest side of the island. A reef that bares, marked by a lighted bell buoy, extends 500 yards northwest from **Dtokoah Point**, southeast of the entrance.

(100) The buildings of **Neah Bay Coast Guard Station**, 0.4 mile southwest of Baada Point, are prominent from the entrance.

(101) The entrance to the bay is between Waadah Island and Baada Point. A depth of 17 feet can be carried into the bay. Anchorage is in 20 to 35 feet, mud bottom.

(102) The west shore of Neah Bay is high and precipitous and bordered by craggy rock outcroppings. The shore east of the village of Neah Bay is a low sand beach to Baada Point.

(103) The village of **Neah Bay**, on the southwest shore of the bay, is the site of considerable sport fishing.

(104) The Makah Indian T-head pier with a 300-foot face, and the ruins of a T-head pier no longer visible, are about 375 and 500 yards southwest of Baada Point. Caution is advised in the vicinity of the pier in ruins, as submerged piles may exist. The Coast Guard pier is 0.5 mile southwest of Baada Point.

(105) Two cooperative fish piers, 1 mile and 1.2 miles southwest of Baada Point, have facilities for icing and supplying fishing boats. Limited berthage, electricity, gasoline, diesel fuel, water and ice are available. Both piers have reported depths of 12 feet off the ends. There are many small-craft floats extending along the south shore of the bay. A marina is about 1 mile southwest of Baada Point on the south shore and has 200 slips; gasoline, diesel fuel, water, electricity, pump-out and a launching ramp are available.

(106) A paved highway extends along the Strait of Juan de Fuca to Port Angeles; telephone service is available.

(107)

Seal Rock to Twin Rivers

(108) From Neah Bay to Clallam Bay, the coast for more than 14 miles is rugged and the back country high and heavily wooded.

(109) **Seal Rock** and **Sail Rock**, about 2 miles east of Neah Bay and about 600 yards offshore, are very prominent. Seal Rock, the westerly of the two, is 100 feet high with a flat top showing east, light in color. Sail Rock, 0.2 mile east of Seal Rock, is lower and more pointed. Covered rocks extend from Seal Rock to shore, and there are patches of kelp in this area.

(110) A marina is along the shore near Sail Rock. Berths, gasoline, water, ice provisions, and a 3-ton lift are available. Mariners are advised to exercise caution in approaching the marinas because of the numerous rocks and ledges. The floats at the marina bare at low water. **Sail River** empties near Seal and Sail Rocks. **Sekiu River**, about 6.5 miles southeast of Sail River, has some logging operations. The bridge over the river shows prominently through the trees.

(111) **Clallam Bay**, about 15 miles southeast of Neah Bay, is a broad open bight about 2 miles long and 1 mile wide. It affords anchorage in 6 to 10 fathoms, sandy bottom, and is used to some extent in south or thick weather.

(112) **Slip Point**, the east point of the bight, is high and wooded; there is a light-colored streak like a landslip down its face, which is visible for a long distance. A reef, extending 0.2 mile west of the point, is marked by a bell buoy.

(113) **Sekiu** is a resort and sport fishing town on the west end of Clallam Bay and south of Sekiu Point. The town has berths, gasoline, water, ice, launching ramps and limited marine supplies. A marine railway that can handle craft to 24 feet long is at the town. **Clallam Bay**, a small town on the east side of Clallam Bay, has no waterfront facilities.

(114) In entering Clallam Bay, give Slip Point a berth of more than 0.2 mile to avoid the reef projecting west of it. Storm-bound vessels generally anchor abreast the rocky point near the middle of the long semicircular beach on the south shore of the bay.

(115) **Pillar Point**, 6.7 miles east-southeast of Slip Point, is bold, 700 feet high, wooded up to its summit, with a dark pillar-shaped rock more than 100 feet high lying close under its east face. The rock shows prominently from west. Good anchorage may be had in 9 to 12 fathoms, sticky bottom, about 0.8 mile southeast of Pillar Point. This anchorage offers good shelter from the heavy west swell but gives no protection from the brisk east and northeast winds that prevail in winter.

(116) **Twin Rivers** are two small streams that flow into the strait about 7 miles east of Pillar Point. An earthfilled barge-loading facility, 0.3 mile west of West Twin River, has a reported depth of 15 feet alongside. The facility is owned by a cement company and used for barging clay to Seattle.

(117)

Low Point to Angeles Point

(118) Shoal water makes out a considerable distance from **Low Point** (48°09.6'N., 123°49.5'W.), 5 miles east of Twin Rivers, and vessels should not approach this point closer than 0.8 mile. Many boulders that uncover are west of the point. A salmon pen, about 2.4 miles west of the point and 0.6 mile from the nearest shore, is marked by two private lighted buoys.

(119) **Agate Bay**, 3.5 miles east of Low Point, is clear and deep; 10 fathoms can be carried to within 0.2 mile of the shore.

(120) **Crescent Bay**, 4.2 miles east of Low Point, is a small semicircular bight 1 mile in diameter. The east part is shoal, and near the west shore the remains of a wharf should be avoided. This is not a good landing place in north weather. The anchorage is of limited extent and suitable only for small vessels. **Crescent Rock**, covered ¼ fathom and marked by a buoy, is 0.4 mile north of the west entrance point of Crescent Bay. The rock extends 0.4 mile in east direction, with a narrow channel between it and the point. The channel has a reported depth of 10 fathoms and is not recommended without local knowledge. A reef extends about 400 yards northwest from **Tongue Point**, the east entrance point of Crescent Bay. A shoal, covered 1¼ fathoms, is about 0.3 mile west of Tongue Point. Except for crabs and fish, the 1¼-fathom shoal is a marine sanctuary for other shellfish and sealife. A wreck is off the entrance about 0.3 miles north of Tongue Point.

(121) **Observatory Point** is 3 miles east of Tongue Point. Between these points is a wooded ridge which, because of the lower land behind it, makes this area appear as an island when raised from east or west. The ridge attains an elevation of 1,135 feet and is known as **Striped Peak**. A rock, 20 feet high, is close off Observatory Point; the rock and the point are almost joined at low water.

(122) **Freshwater Bay**, about 4 miles east of Crescent Bay, is a broad open bight, affording anchorage in 6 to 10 fathoms. The bay and adjacent waters are designated as an **emergency explosives anchorage**. (See **33 CFR 110.1** and **110.230 (a)(1)** and **(b)**, chapter 2, for limits and regulations.) A park with a launching ramp is along the southwest shore of Freshwater Bay.

(123) **Angeles Point**, on the east side of Freshwater Bay, is low, sandy, and covered with alders. The **Elwha River** empties into the strait at this point.

(124) A microwave tower, marked by aircraft warning lights and a good landmark by day and night, is on Angeles Point.

(125)

Caution

(126) The U.S. Navy advises that the precautionary area, located within a 1-mile radius centered around a point in about 48°15'36"N., 123°15'48"W., approximately 9 miles north-northeast of Ediz Hook, is used by naval vessels to conduct equipment calibration tests. Surface vessels or submerged submarines will occasionally be maneuvering in circles in this area for several hours or days. When these operations are in progress, the test facility located on the east end of Ediz Hook will be manned and reference lights consisting of a lazy "T" bar, 1 sec flashing yellow, 2/sec flashing red, and a high intensity spot will be lit. The group of lights is visible from the north side of Ediz Hook with the "T" bar to the west and spot light to the east. The naval vessels will be participating in the Seattle Vessel Traffic System on VHF-FM channel 5A. The Navy Test Facility Port Angeles will monitor VHF-FM channels 16 and 69. Mariners transiting this area are requested to proceed with caution.

(127) A **Vessel Traffic Service** has been established in the Strait of Juan de Fuca, east of Port Angeles, and in the adjacent waters. (See **33 CFR 161.1** through **161.55**, chapter 2, for regulations, and the beginning of this chapter for additional information.)

(128)

Port Angeles

(129) **Port Angeles**, 6.5 miles east of Freshwater Bay and 56 miles from Cape Flattery, is entered between **Ediz Hook**, a low and narrow sandspit 3 miles long, and the main shore to the south. The harbor, about 2.5 miles long, is easy of access by the largest vessels, which frequently use it when refueling, making topside repairs, waiting for orders or a tug and when weather-bound.

(130) The harbor is protected from all except east winds, which occasionally blow during the winter. During southeast winter gales, the wind is not usually felt but some swells roll in. The depths are greatest on the north shore and decrease from 30 to 15 fathoms in the middle of the harbor; from the middle, the depths decrease regularly to the south shore, where the 3-fathom curve in some places in the east part is nearly 0.2 mile from the beach. A rock covered 5 fathoms is at 48°07'22"N., 123°13'18"W. A shoal with a least depth of 2¼ fathoms is 330 yards northwest of the northwest corner of the easternmost pier on the waterfront; a buoy is 200 yards east of the shoal.

(131) Extra caution in navigating the waters inside Ediz Hook should be exercised because of the large number of submerged deadheads or sinkers in the area. Deadheads or sinkers are logs that have become adrift from rafts or booms, have become waterlogged and float in a vertical position with one end just awash, rising and falling with the tide.

(132)

Anchorage

(133) Puget Sound Vessel Traffic Service requires advance notification of watch supervisor for all vessels using Port Angeles anchorage; telephone 206–217–6050. The best anchorage is off the wharves, in 7 to 12 fathoms, sticky bottom.

(134) A **non-anchorage area** has been established in the east part of Port Angeles Harbor. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(135) Extensive log booming grounds in the north part of the harbor extend more than 1 mile from the west shore. Care must be taken when anchoring at night to avoid the rafted logs; the booming grounds are charted.

(136) **Ediz Hook Light** (48°08'24"N., 123°24'09"W.), 50 feet above the water, is shown from a skeleton tower, 0.3 mile west of the east extremity of Ediz Hook; a mariner-radio-activated sound signal is at the light, initiated by keying the microphone five times on VHF-FM channel 81A. A 170-foot Coast Guard VTS radar tower is about 0.1 mile west-southwest of the light. Shoals extend to about 75 yards east of the east extremity of Ediz Hook. A lighted buoy is about 150 yards east of the outer limits of the shoals. A Coast Guard radio station (NOW) is at the air station. A shoal, with a least depth of 7 fathoms and marked by a lighted buoy, is about 3.4 miles west-northwest of Ediz Hook Light. An aquaculture site, marked by private lights, is off the south side of Ediz Hook about 800 yards west-southwest of the light.

(137) **Port Angeles** is on the south shore of the harbor. Logs, lumber, plywood, newsprint, pulp, shakes and shingles and petroleum products are the principal commodities handled.

(138)

Pilotage, Port Angeles

(139) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Port Angeles is provided by the Puget Sound Pilots. They monitor VHF-FM channel 13. (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, early this chapter.) The pilot station is about 0.7 mile west from Ediz Hook Light. A pier for berthage of the pilot boats is on the south side of Ediz Hook, adjacent to the pilot station.

(140)

Towage

(141) Tugs to 1,200 hp are stationed at Port Angeles, and tugs to 5,000 hp are available from Seattle with advance notice.

(142)

Quarantine, customs, immigration and agricultural quarantine

(143) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(144) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(145) Port Angeles is a **customs port of entry**.

(146)

Coast Guard

(147) Port Angeles Coast Guard Air Station/Sector Field is on Ediz Hook, about 0.3 mile west of the east extremity.

(148)

Harbor regulations

(149) The Port of Port Angeles Terminal Manager's office is in Port Angeles at the foot of Cedar Street.

(150)

Wharves

(151) The major piers described, both private and port operated, extend along the south and west sides of the harbor. The alongside depths of the facilities described are reported depths—for information on the latest depths contact the port authorities or the private operators.

(152)

Port-operated facilities

(153) Port Terminal No. 1 (48°07'30"N., 123°26'24"W.): 956-foot berthing space on north side with an additional 425 feet to dolphins; 610 foot berthing space on south side, 42 feet at the end; deck height, 17 feet; 17,000 square feet covered storage; 96,000 square feet open storage; shipment of general cargo, lumber, logs, pulp and other forest products; berthing space for top side repair of large ocean going vessels.

(154) Port of Port Angeles, Terminal No. 3 (W of Port Terminal 1): 480-foot berthing space; 41 to 45 feet alongside; deck height, 17 feet; receipt and shipment of general cargo, shipment of logs and lumber.

(155)

Privately operated facilities

(156) Black Ball Ferry Transport (48°07'21"N., 123°25'45"W.): Terminus of passenger and automobile ferry connecting Port Angeles and Victoria, BC; ferry makes two trips daily from March to May and October to January. From May to October it makes 4 trips daily. Visit *northolympic.com* for the current schedule. Operated by Black Ball Transport, Inc.

(157) Diashowa America, Port Angeles Mill Dock (48°07'57"N., 123°27'33"W.): 640-foot total berthing space with dolphins; 28 feet alongside; deck height, 10 feet; shipment of lumber; owned and operated by Merrill and Ring, Inc. **Note:** Vessels moor portside-to at this wharf; a tug is recommended for both docking and undocking.

(158) Diashowa America, Port Angeles Barge Dock (48°08'08"N., 123°27'37"W.): 570-foot berthing space with dolphins; 36 to 40 feet alongside; deck height, 17½ feet; approximately 28,000 square feet covered storage; receipt of fuel oil for plant consumption; shipment of paper products; owned by Diashowa; operated by Diashowa America and BP Marine Americas. A 25-foot shoal is charted about 100 feet east of the face of the Wharf; a tug is recommended when undocking.

(159) In addition to the facilities mentioned, there are several small piers and wharves at which tugs and other floating equipment moor. Many log dumps are in the harbor.

(160)

Supplies

(161) Water, ice and marine supplies are available. Groceries are nearby. Diesel oil and gasoline are available at the port boat haven. Bunkering is available by barge.

(162)

Repairs

(163) Port Angeles has several companies and facilities to perform major topside repairs to large oceangoing vessels; the nearest drydocking facilities are in Seattle/Tacoma or Bellingham.

(164)

Small-craft facilities

(165) **Port Angeles Boat Haven**, operated by the port, is a large, well-equipped small-craft basin in the southwest part of the harbor that can accommodate a large fleet of fishing boats and pleasure craft. The basin is marked by lights. In 2007, the controlling depth in the entrance and basin was 16 feet with 12 feet alongside the berths. About 660 berths, electricity, gasoline, diesel fuel, water, ice, a pump-out station, launching ramps, marine supplies and winter wet storage are available. A boatyard at the east end of the basin has a marine railway that can handle craft to 100 tons; a 225-ton lift is also available. Hull and engine repairs can be made at the yard, and electronic repair work can be arranged. The **harbormaster** controls the moorings in the basin (360–457–4505).

(166) A **121°16'-301°16'** 200-yard **measured course** is in the southwest part of the harbor close north of Port Angeles Boat Haven.

(167)

Communications

(168) Port Angeles is served by U.S. Highway 101. It is connected by ferry to Victoria, BC. The airport is 2.5 miles west of the city.

(169)

Dungeness Bay to Partridge Bank

(170) From Port Angeles the coast trends east for 13 miles to the end of **Dungeness Spit**, which borders the west side of **Dungeness Bay**. This bay affords shelter in west winds, but is open east; in north weather, the protection afforded is only fair. It is a dangerous place in winter gales, especially from the southeast. The bay is formed by a sandspit extending northeast 4 miles and forming, in

addition to Dungeness Bay, a small lagoon at the head of the harbor that can be entered by light-draft vessels with local knowledge.

(171) A **075°–255° measured nautical mile** has been established on the strait side of Dungeness Spit; the range markers are in the small lagoon at the head of the harbor.

(172) **New Dungeness Light** (48°10'54"N., 123°06'37"W.), 67 feet above the water, is shown from a 63-foot white conical tower on a dwelling on the outer end of the spit.

(173) From the end of the spit a shoal extends northeast for 0.8 mile from the light. This has been reported as extending farther north, and it should be passed with caution. A lighted buoy marks the shoal but it may be submerged during periods of strong current; vessels should not pass between the buoy and the light. A shoal makes out about 1 mile from the south side of the bay.

(174) The best anchorage is in 5 to 9 fathoms, sticky bottom, about 1 mile southeast of the light, clear of the cable area.

(175) **Dungeness** is a small town on the south shore of the bay. The ruins of a former wharf extend about 1,000 yards out across the flats.

(176) **Sequim Bay**, 6 miles southeast of Dungeness Bay, is a landlocked bay 3.8 mile long. The bay is separated from the Straits by **Travis Spit**, a sandspit that extends west from the northeast corner of the bay almost to the west shore. A narrow channel marked by daybeacons and a light at the entrance leads around Travis Spit and west of a shoal area called The Middle Ground into the bay. Depths in the marked channel are about 9 feet; local knowledge is advised. The area between the light at the entrance and Gibson Spit on the west shore reportedly bares at minus tide and several groundings are known to occur; caution is advised. Strong currents that tend to follow the channel have also been reported. Anchorage inside Sequim Bay can be had anywhere in 6 to 21 fathoms, muddy bottom.

(177) A marina is located on the west side of the bay just north of **Pitship Point**. Lights mark the breakwater entrance. Depths in the entrance are reported to be 12 feet, with 7 feet alongside the piers. Services include transient berths, electricity, gasoline, diesel fuel, water, ice, launching ramp and a pump-out station. The harbormaster controls moorage in the basin and can be contacted at 360–417–3440; VHF-FM is not monitored. A marine research center of the Battelle Memorial Institute, is on the west side of the entrance to the harbor abreast the sandspit. Some log rafts are made up in the bay. **Sequim Bay State Park** is at the southwest end of the bay. A seasonal mooring float is at the park.

(178) **Protection Island**, a prominent feature in approaching Discovery Bay, is 200 feet high near its western extremity, 1.5 miles long and sparsely wooded; its north shore consists of bare, light bluffs. The east end and south shore are clear of dangers, but off **Kanem Point**, its southwest end, a shoal extends southwest for over 0.2 mile, and depths of 5 fathoms and less are found 0.5 mile west of the point. **Dallas Bank** extends north from Protection Island; the 10-fathom curve lies about 2.5 miles from the north point. North of the 10-fathom curve the bank drops off abruptly to depths of over 20 fathoms. **Miller Peninsula**, about 6 miles long and 3 to 5 miles wide, separates Sequim Bay and Discovery Bay.

(179) **Discovery Bay** is 2 miles south-southeast of Protection Island. The bay trends in a southeast direction for about 8 miles. The entrance is masked from seaward by Protection Island, which protects it from northwest winds. Strong southeast gales have been observed and can have winds higher than outside the bay. There are no outlying dangers, and the depths are great. There is good anchorage with excellent holding ground at the head of the bay in 20 fathoms. **Cape George** is at the east entrance point of Discovery Bay. A private marina is also located at Cape George. The nearest marinas to Discovery Bay providing electricity and fuel are in Sequim Bay and Port Townsend.

(180) **Diamond Point** is the west point at the entrance to Discovery Bay. A wharf in ruins is just inside the point.

(181) The shore from Cape George for 3 miles to **McCurdy Point** consists of high, bare, clay bluffs, wooded on top, attaining a height of 400 feet near the northeast end. A shoal covered 11 feet extends 0.6 mile northwest of McCurdy Point; it is marked by a buoy. Vessels are cautioned not to pass between the buoy and the point.

(182) From McCurdy Point, the shore trends east for 3.5 miles to **Point Wilson**, the west point at the entrance to Admiralty Inlet, and consists of high, bare, clay bluffs, sparsely wooded on top, decreasing in height near McCurdy Point, and ending abruptly close west to Point Wilson.

(183) **Point Wilson Light** (48°08'39"N., 122°45'17"W.), 51 feet above the water, is shown from a white octagonal tower with a black top on a white building with a red roof, on the east extremity of the low point.

(184) Shoals extend 0.5 mile northwest of Point Wilson to the 5-fathom curve over irregular bottom; these are generally indicated by kelp. The east edge of the shoals rises rather abruptly from deep water. Heavy tide rips extend north of these shoals, being especially heavy with a west wind and ebb current. A lighted buoy marking the shoals is about 0.7 mile northwest of Point Wilson Light.

(185) In approaching Point Wilson in thick or foggy weather, soundings should be taken continuously.

(186) **Point Partridge**, the Westernmost point of Whidbey Island, has a yellow face and is prominent from the north or south; it is rounding and not easily identified from the west. **Point Partridge Light** (48°13'29"N., 122°46'10"W.), 105 feet above the water, is shown from a skeleton tower on the west extremity of the point. A rocky ledge, marked by a lighted bell buoy, extends 0.5 mile west from the point. In the summer, the ledge is usually marked by kelp.

(187) The west shore of Whidbey Island, between Admiralty Head and Point Partridge, is mostly a sandy beach rising sharply to bluffs 100 to 250 feet high, backed by pine trees. The shoreline is generally strewn by logs.

(188) **Admiralty Head**, 80 feet high, on Whidbey Island, is the east entrance point of Admiralty Inlet and the southeast extremity of a succession of light bare bluffs that extend north of Point Partridge, where they attain their highest elevation. About 0.5 mile north of Admiralty Head an abandoned lighthouse tower 39 feet high stands on top of a bluff.

(189) From Point Partridge the northwest coast of Whidbey Island extends north-northeast for 11.5 miles to Deception Pass. It is free of offlying dangers but should not be approached closer than 1 mile.

(190) A **Small Arms Safety Zone** operated by Naval Air Station Whidbey Island is located about 5 miles north-northeast of Point Partridge. The zone is in operation 7 days a week; red flashing lights and flags are displayed during live exercises. Mariners should exercise extreme caution when transiting the area.

(191) **Partridge Bank**, within the 10-fathom curve, is about 3 miles long and 1.5 miles wide; the southeast end reaches within 2 miles of Point Partridge. The north and east sides fall off abruptly to 20 and 30 fathoms. The shallowest part, 2½ fathoms, is near the north side about midway between the ends; it is marked by a buoy. A lighted bell buoy is about 0.6 mile south-southeast of the 2½ fathom spot. A considerable part of the bank is covered with kelp, which is usually drawn under by currents. The kelp generally extends to the 7-fathom curve, except toward the east end where the shoal narrows, and no kelp exists beyond a depth of 4 fathoms; kelp density varies by season.

(192)

San Juan Islands

(193) The waters of the **San Juan Islands** embrace the passages and bays north of the east end of the Strait of Juan de Fuca. These passages are used extensively by pleasure craft, especially in July, August and September. Some tugs and barges use the larger passes. Automobile ferries, operated by the State of Washington, are on regular round-trip runs from Anacortes through Thatcher Pass, Cayou Channel, Wasp Passage, San Juan Channel and Spieden Channel and across Haro Strait to Sidney, BC. The island ferry landings are at Upright Head, Lopez Island; on the east side of the entrance to Blind Bay, Shaw Island; Orcas, Orcas Island; and Friday Harbor, San Juan Island. Oceangoing vessels normally use Haro and Rosario Straits and do not run the channels and passes in the San Juan Islands. Many resorts and communities have supplies and moorage available for the numerous pleasure craft cruising in these waters. Well-sheltered anchorages are numerous.

(194) The directions that follow are intended for use only in clear weather; in thick weather or at night strangers should take a pilot for large vessels. Small craft should not attempt navigation under these conditions without local knowledge. Sailing craft should not attempt the passages against the current unless the wind is fair and fresh. A reliable auxiliary engine for sailboats is an absolute necessity. The tidal currents have great velocity in places, causing heavy tide rips that are dangerous. Because of the variable direction and velocity of the currents, compass courses are of little value, and, where followed, allowance must be made for the set of the current.

(195) **Haro Strait** and **Boundary Pass** form the westernmost of the three main channels leading from the Strait of Juan de Fuca to the southeast end of the Strait of Georgia; it is the one most generally used. Vessels bound from the west to ports in Alaska or British Columbia should use the Haro Strait/Boundary Pass channel, as it is the widest channel and is well marked. Vessels bound north from Puget Sound may use Rosario Strait or Haro Strait; the use of San Juan Channel by deep-draft vessels is not recommended.

(196) A **Vessel Traffic Service** has been established in the Strait of Juan de Fuca, east of Port Angeles, and in the adjacent waters. (See **33 CFR 161.1** through **161.55**, chapter 2, for regulations, and the beginning of this chapter for additional information.)

(197) Haro Strait extends north from the south end of San Juan Island for about 18 miles to Turn Point Light on Stuart Island, thence Boundary Pass leads northeast for 13 miles to its junction with the Strait of Georgia between East Point, the east end of Saturna Island, BC, and the west end of Patos Island, the small United States island; both of which are marked by lights. These waterways have widths from 1.5 to 5 miles, and the depths are generally great.

(198) No difficulty will be experienced in navigating Haro Strait and Boundary Pass in clear weather; strangers should take a pilot in thick weather.

(199) The east shore of the passage will be described in detail, with only a brief general description of the west shore. More complete detail of the west shore is contained in Pub. 154, Sailing Directions (Enroute) for British Columbia, published by the National Geospatial-Intelligence Agency Hydrographic/Topographic Center, and the Sailing Directions, British Columbia Coast (South Portion) Vol. 1, published by the Canadian Hydrographic Service.

(200) The International Boundary between the United States and Canada passes through Haro Strait and Boundary Pass.

(201) In accordance with the Cooperative Vessel Traffic Service, the United States and Canada, in cooperation with industry and the British Columbia Coast Pilots, have established a **Special Operating Area** at the intersection of Haro Strait and Boundary Pass in the vicinity of Turn Point Light (48°41'18"N., 123°14'12"W.). This special area will help reduce the risk of incidents between both commercial and recreational vessels transiting the boundary waters of Haro Strait and Boundary Pass. For the boundaries and rules regarding the **Special Operating Area**, see **Cooperative Vessel Traffic Service (CVTS)** at the beginning of this chapter.

(202)

Tidal currents

(203) In Haro Strait and Boundary Pass, the flood current sets north; the ebb current sets in the opposite direction. The ebb usually runs longer and has a greater velocity. At the north entrance to Boundary Pass, the flood sets east along the north and south sides of Sucia Islands and across Alden Bank; the velocity is about 1 to 2 knots. The Current has moderate velocity between Sucia and Orcas Islands. There is a large, daily inequality in the current. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book. Heavy, dangerous tide rips occur between East Point on Saturna Island and Patos Island and for two miles north in the Strait of Georgia. Tide rips also occur on the ebb between Henry Island and Turn Point, as well as around Turn Point where the ebb may attain a velocity of 6 knots during large tides. The flood current sets east from Discovery Island across the south end of Haro Strait until close to San Juan Island. This east set is especially noticeable during the first half of the flood. Heavy tide rips occur north of Middle Bank as well as on the Bank and around Discovery Island.

(204) **Middle Bank**, with a least depth of 10 fathoms, is in the south approach to Haro Strait. The bank is about 3.5 miles long, and the least depth is in its northeast part and 5.7 miles southwest of Cattle Point Light on the southernmost tip of San Juan Island. Heavy tide rips, dangerous to small craft, form in the vicinity of this bank in bad weather.

(205) **Beaumont Shoal**, covered 9 fathoms, lies 3 miles northwest of the northwest corner of Middle Bank and is marked by a lighted buoy. A second small bank with a least depth of 7 fathoms lies 1 mile to the north. In bad weather, heavy tide rips form over these banks.

(206) **San Juan Island**, the largest of the group, is about 13 miles long, rugged, and partly wooded. **Mount Dallas**, the highest of several hills on the island, rises abruptly from the middle of the west side to a height of 1,080 feet. In most places the shores are free of outlying dangers. The north end of the island is indented by several small bays that, with the exception of Roche Harbor, are shoal and of no commercial importance.

(207) From **Eagle Point**, the west shore of San Juan Island trends northwest and forms the east side of Haro Strait. This shore is steep-to and rocky, and beyond 400 yards offshore it is free of danger; however, the depths off this shore are too great for anchoring.

(208) **Kanaka Bay**, a small cove used by fishing boats, is 2.5 miles northwest of Eagle Point.

(209) **Lime Kiln Light** (48°30'57"N., 123°09'09"W.), 45 feet above the water, is shown from a 31-foot white octagonal tower with a black cupola and red roof, attached to a square white building on the west side of San Juan Island. Two dwellings are about 150 yards southeast of the light. Rocks awash lie close inshore about 1 mile southeast of the light.

(210) **Smallpox Bay** and **Andrews Bay**, 1.5 miles northwest of Lime Kiln Light, offer protection for small craft from north and east weather.

(211)

Local magnetic disturbance

(212) Differences from the normal variation of as much as 4° have been observed in the vicinity of **Bellevue Point**, 1 mile north of Lime Kiln Light.

(213) During the June–October fishing season, many purse seiners operate in this area. At night these vessels anchor close inshore, generally between Cattle Point and Pile Point.

(214) **Hanbury Point** (48°34.7'N., 123°10.3'W.), 3.8 miles north of Lime Kiln Light, is the north entrance point to **Mitchell Bay**, one of a series of well-sheltered bays on the northwest coast of the island. A small islet 3 feet high is in the center of the bay about 350 yards southeast of the entrance. A rock about 100 yards west of the islet uncovers 6 feet. The only safe passage into the bay is north of the islet. **Snug Harbor**, a resort and yacht haven on the south side of Mitchell Bay, has about 70 berths with electricity, gasoline, water, ice and limited marine supplies. A launching ramp is available; engine repairs can be made to small craft. **Mosquito Pass**, available only to small craft with local knowledge, leads north from Hanbury Point to **Garrison Bay, Westcott Bay** and Roche Harbor.

(215) A large aquaculture facility, covered 3 feet and consisting of clam beds and suspended oyster racks, is in the middle of Westcott Bay about 1 mile above the entrance. Mariners should use caution in the area.

(216) **Henry Island** is close west of the north point of San Juan Island, from which it is separated by Mosquito Pass and Roche Harbor.

(217) **Kellett Bluff**, at the south end of Henry Island, is steep and rocky and prominent from either south or north. It is marked by a light. **Open Bay**, east of Kellett Bluff, offers good holding ground and protection for small boats from west, north and east weather.

(218) **Roche Harbor** has its main entrance between the north end of Henry Island and the west end of **Pearl Island**, which is marked by a light. Sandspits covered 17 and 18 feet extend into the channel from the islands on each side of the entrance. Entrance to the harbor can also be made from the south through Mosquito Pass between Henry Island and Bazalgette Point. The harbor has depths of 4 to 9 fathoms. It affords good anchorage and in the summer is used extensively by yachts. The harbormaster can be contacted on VHF-FM channel 78A.

(219) A large resort is on the east side of Roche Harbor. The resort operates a wharf with shed, floats with berths for over 450 craft, including over 150 transient berths, a hotel, cabins, a general store and restaurant. Electricity, gasoline, diesel fuel, water, ice, a launching ramp, pump-out station and marine supplies are available. The site

was once the largest lime works west of the Mississippi, and quarry tunnels and the ruins of the old mill are still prominent.

(220) A **customs office** is on the north side of the main dock. Two to three customs officers are here full time in the summer and on call from Friday Harbor in the winter to inspect visiting Canadian yachts. The customs officer also performs **immigration** and **agricultural quarantine** inspections. Weekend and after-hours custom service can be obtained from Blaine; a toll-free phone number is posted. Roche Harbor has a paved and lighted airstrip; daily air service is available year round to Seattle. A paved road leads to Friday Harbor.

(221) **Battleship Island**, small and 30 feet high, is about 0.2 mile west-northwest of McCracken Point, the north extremity of Henry Island, and is the west point in the approaches to Roche Harbor.

(222) **Danger Shoal**, with a least depth of 1 fathom, is in the fairway to Spieden Channel about midway between Battleship Island and Spieden Bluff. A lighted buoy is close southwest of the shoal, which is marked by kelp.

(223) A rock, marked by kelp and covered 11 feet, is about 200 yards northwest of **Barren Island**, 0.7 mile east of McCracken Point; it is marked by a buoy. Another rock (48°37'27"N., 123°09'31"W.), marked by kelp and covered 9 feet, is about 350 yards east.

(224) **Spieden Channel** leads east between Spieden Island on the north and Battleship, Henry and San Juan Islands on the south; the channel leads from Haro Strait to President Channel and San Juan Channel. The east entrance, the narrowest part, is 0.6 mile wide, and for 2 miles west of it the channel is free of danger. However, in the west entrance, which has an irregular bottom, are several dangers, but the fairway is deep throughout. The meeting of the flood currents, which flow east from Haro Strait and west from San Juan Channel, cause heavy tide rips and eddies. This channel is not recommended for sailing craft.

(225) **Spieden Island** lies with **Spieden Bluff**, its northwest end, 1.6 miles north-northeast of Battleship Island. The island is 2.5 miles long in an east direction with an extreme width of 0.5 mile. **Green Point**, the east end of which is marked by a light, is low and grassy. The south side of the island has few trees, but the north face is well wooded.

(226) There are several dangers southeast of Spieden Bluff. **Center Reef**, which bares, is 0.7 mile south of the bluff; it is marked off its south side by a buoy. **Sentinel Rock** and **Sentinel Island** are closer inshore; a rock midway between them is covered 5 feet.

(227)

Stuart Island to Fisherman Bay

(228) **Stuart Island** is northwest of Spieden Island and has two prominent hills near the middle, 640 feet high. **Turn Point** is the west extremity of Stuart Island. It is bold, steep-to and marked by **Turn Point Light** (48°41'20"N., 123°14'15"W.), 44 feet high on a 16-foot white concrete tower.

(229) **Reid Harbor** indents the southeast shore of Stuart Island and trends northwest about 1.5 miles. The harbor, which is landlocked and 400 yards wide, affords good anchorage in 4 to 5 fathoms, soft bottom. The State Parks and Recreation Commission maintains a small-craft pier and floats here. The harbor is free of danger, but from the east entrance point foul ground extends about halfway across the entrance. Enter in midchannel and anchor anywhere in the middle of the wider portion of the harbor. In 1996, a visible wreck was reported in the harbor entrance in about 48°40'12"N., 123°11'19"W.

(230) **Prevost Harbor**, on the north shore of Stuart Island about 1.5 miles east of Turn Point, affords good shelter and anchorage. A pier used by the Coast Guard and the county is on the west shore of the harbor. Mail is delivered to the island by air. The State Parks and Recreation Commission maintains a float landing for small boats.

(231) **Satellite Island** lies within Prevost Harbor, with reefs and shoals extending off its southeast extremity. Vessels should not pass east of the island. Enter in midchannel west of Satellite Island and anchor in 6 to 7 fathoms, muddy bottom, in the middle of the wider portion just within the entrance, keeping clear of a rock that uncovers 6 feet, 200 yards off the south shore.

(232) **Johns Pass**, between Stuart Island and **Johns Island** close east, is much used by fishing vessels and small boats. At the south end of the pass foul ground extends about 0.6 mile southwest from Stuart Island.

(233) **Waldron Island**, 6.5 miles east of Turn Point, is steep and rocky on the east side but flat with sandy beaches on the north and west sides. It is irregular in shape and 3 miles long. The highest point, 612 feet, is near **Point Disney**, its south end. On the north and east sides of the island is a high yellow sand bluff, terminating abruptly in **Point Hammond**.

(234) **Cowlitz Bay**, which indents the southwest shore of Waldron Island, is a broad, open bight affording anchorage in fair weather. Shoal water extends 0.5 mile south of **Sandy Point**, the west end of the island. **Mouatt Reef**, with a least depth of 3 feet and marked by kelp, is 0.4 mile offshore and 0.5 mile north of Point Disney. A wharf built out to a depth of 7 feet is on the shore northeast of Mouatt Reef.

(235) **Bare Island**, small, grassy, and bare of trees, is 0.5 mile north-northwest of Point Hammond, and **Skipjack Island**, 120 feet high and wooded, is about 1.2 miles northwest of Point Hammond. The passage between them should be avoided because of its high current velocity. A small, bare rock is off the east end of Skipjack Island, and a group of rocks awash are about midway between it and Bare Island. **Skipjack Island Light** (48°43'58"N., 123°02'21"W.), 18 feet above the water, is shown from a steel tower on the west side of the island.

(236) A rocky shoal with a least depth of 6 fathoms is about 2 miles north-northeast of Skipjack Island and is marked by an isolated danger lighted bell buoy.

(237) **Patos Island**, 4.3 miles north-northeast of Point Hammond, is 60 feet high and wooded except at its west end, toward which it gradually decreases in height; the island is a state park. **Active Cove**, between Patos Island and Little Patos Island, is reported to be a good anchorage for small vessels. There are several public mooring buoys available in the cove. Vessels without local knowledge should enter Active Cove from the west, as the southern-facing entrance experiences strong, swirling currents at almost all stages of tide. **Patos Island Light** (48°47'20"N., 122°58'17"W.), 52 feet above the water, is shown from a 38-foot white square frame tower on **Alden Point**, the west point of the island.

(238) **Sucia Islands**, consisting of one large and several smaller islands, are southeast of Patos Island and 2.5 miles north of Orcas Island. The heavily wooded large island is a marine state park and is 200 feet high. The west side is a series of steep, wooded cliffs broken by **Shallow Bay**. The entrance to the bay is marked by buoys. The bay is an excellent anchorage with mooring buoys available in the north part. **Echo Bay** indents the east side of the island. In west weather small vessels with local knowledge can find good anchorage in 4 to 5 fathoms near the head of the bay. At the head of **Fossil Bay**, on the south side of **Sucia Island**, there is a State Parks and Recreation Commission small-craft anchorage and float pier; water is available. The bays and coves around Sucia Island have been designated as Sensitive Eelgrass Areas. Vessels are encouraged to avoid anchoring in less than 30 feet of water. Numerous mooring buoys are available for recreational vessels.

(239) Reefs extend about 1.5 miles west of Sucia Islands to **West Bank**, which has a minimum depth of 8 feet. Strong tidal currents exist between West Bank and the Sucia Islands; only vessels with local knowledge should transit the area.

(240) **Clements Reef**, 0.5 mile north of Sucia Islands, is about 1.2 miles long and 0.3 mile wide. The northwest end and the southeast end of the reef are marked by buoys.

(241) The tidal currents are particularly strong and dangerous between Patos Island and East Point on Saturna Island, BC, and for 2 miles north in the Strait of Georgia. Tidal currents between Patos Island and Sucia Islands are less extreme and more regular than Boundary Pass.

(242)

Haro Strait, SW approach (Canada)

(243) The several channels and passages leading between the islands and dangers off the coast of British Columbia from Gonzales Point to **Cadboro Point**, 2.8 miles north-northeast, constitute the southwest approach to Haro Strait. These passages and channels should be used only by vessels with local knowledge.

(244) The side of Haro Strait west of the international line is bordered by several islands and reefs, the most important of which are, from south to north: **Kelp Reefs**, marked by a light, about 7 miles north of Discovery Island; **Sidney Island**, about 3 miles northwest of the light on Kelp Reefs; **Moresby Island**, marked by a light, about 16 miles north of Baynes Channel and Discovery Island, and the smaller islands and reefs in between.

(245) **Swanson Channel**, used sometimes as an alternate route by vessels bound for Alaska points, extends northwest between Moresby Island and the **Pender Islands** and connects ultimately with Active Pass to reach the Strait of Georgia in 48°53'N.

(246) **Active Pass** is deep but tortuous and in its narrowest part is about 600 yards wide. The dangers do not extend over 200 yards from shore. Vessels should enter the pass at slack water, if possible, but a vessel with a speed of 10 knots can always get through. A vessel with local knowledge can take advantage of the eddies and variations of the tidal currents, but others should keep in midchannel. Great care should be taken to avoid the shoals on either side of the north entrance to the pass.

(247) **Enterprise Reef**, in the south approach to Active Pass, consists of two rocky heads about 400 yards apart. The west head uncovers 3 feet, and the east head is awash. Foul ground extends between the heads and 200 yards west of the west head. A light is on the west head, and a buoy marks the east head.

(248) **South Pender Island**, 3 miles north of Stuart Island, is marked by a light on **Gowlland Point**, its southeast extremity. The last of the Canadian lights in this stretch is on **East Point**, the east point of **Saturna Island**, 6.2 miles east-northeast of Gowlland Point.

(249) **Rosenfeld Rock**, 1.2 miles north-northeast of East Point, is marked by a lighted buoy. The rock is covered by 1¼ fathoms, and rocks that bare are within 900 yards of it. Close east of the rock, overfalls and dangerous tide rips are formed.

(250) (See Pub. 154, Sailing Directions (Enroute) for British Columbia, published by the National Geospatial-Intelligence Agency, and Sailing Directions, British Columbia Coast, (South Portion) Vol. 1, published by the Canadian Hydrographic Service for more details of the islands and features on the Canadian side.)

(251) **San Juan Channel**, the middle one of three principal channels leading from the Strait of Juan de Fuca to the Strait of Georgia, separates San Juan Island from the islands east. It is 13 miles long from its south end to its junction with President Channel at the north end. San Juan Channel is deep throughout and, except near its south entrance, has few off-lying dangers.

(252)

Currents

(253) In the south end of San Juan Channel, between Goose Island and Deadman Island, the average current velocity is 2.6 knots on the flood and ebb; however, maximum flood currents of 5 knots or more cause severe rips and eddies. Daily current predictions for this location may be obtained from the Tidal Current prediction service at *tidesandcurrents.noaa.gov*. Links to a user guide for this service can be found in chapter 1 of this book.

(254) **Cattle Point** is the southeast extremity of San Juan Island and forms the west point at the south entrance to San Juan Channel. **Cattle Point Light** (48°27'02"N., 122°57'48"W.), 94 feet above the water, is shown from a white octagonal tower on the point. Cattle were once loaded here for shipment to and from Victoria.

(255) **Salmon Bank**, south of Cattle Point and on the west side of **Middle Channel**, is an extensive shoal covered 1½ to 3 fathoms; it is marked by a lighted gong buoy. Kelp grows on the rocks. **Whale Rocks**, two dark rocks about 5 feet high, are on the east side of Middle Channel 0.6 mile northwest of Long Island. A reef, with a least depth of 8 feet, extends 0.4 mile south of Whale Rocks.

(256) **Long Island**, 1.5 miles northwest of Iceberg Point, is the largest of a group of islands on the east side of the entrance to San Juan Channel.

(257) **Lopez Island** is the southeasternmost one of the San Juan Islands; **Lopez Hill**, 488 feet high, is near the south midsection of the island. **Iceberg Point**, 3.3 miles southeast of Cattle Point, is at the west extremity of the south part of Lopez Island and is marked by **Iceberg Point Light 2** (48°25'19"N., 122°53'39"W.), shown from a white square concrete house with red daybeacon, 35 feet above the water.

(258) **Richardson** is a small settlement on the north shore of the cove north of Iceberg Point and close north of **Charles Island**. Four tanks are prominent from seaward. A wharf in ruins is directly below the tanks.

(259) **Mackaye Harbor**, north of Iceberg Point, affords good shelter in 5 to 6 fathoms, soft mud. A pier and launching ramp, for day use only, is at the northeast corner of the harbor. Small craft with local knowledge can obtain excellent shelter in **Barlow Bay**, on the south side of the harbor. Vessels approaching Mackaye Harbor or Richardson should pass at least 0.3 mile south and east of the off-lying islands and islets. Local vessels, by keeping close to the north shore to avoid rocks near midchannel, use a small passage between Lopez and Charles Islands, but this should not be attempted without local knowledge. **Twin Rocks**, in midchannel of this small passage, are marked by a daybeacon.

(260) **Davis Point**, the southwest end of Lopez Island, is on the east side of the south entrance to San Juan Channel. **Deadman Island** is close off the east side of the entrance, and several rocks are within 600 yards north of the island. **Goose Island**, small and low, is about 0.5 mile north of Cattle Point and close off the west side of the entrance to San Juan Channel.

(261) **Shark Reef**, awash, is over a mile north of Deadman Island and close off some white cliffs on the east side of San Juan Channel.

(262) From Goose Island north to **Pear Point**, the west side of San Juan Channel is foul with many rocks covered and awash within 0.7 mile of the shore. However, good anchorage for small vessels can be had west of **Harbor Rock**, at the south end, between the 10 and 20-fathom curves.

(263) **North Bay** is entered between Pear Point and **Dinner Island**. Gravel is barged from pits on the northwest shore of the bay to Vancouver Island. **Little Island**, at the head of North Bay, is connected to the mainland by a narrow spit. Just north of Little Island, on the west side of the spit, is a park with a launching ramp. The bay affords fair anchorage in 7 to 10 fathoms, about 800 yards north of Dinner Island. Two dangers are in the approaches to the bay; a rocky shoal covered ¾ fathom 0.7 mile east of Dinner Island and another rock shoal covered ¾ fathom 0.4 mile southeast of Dinner Island. In 2005, a shoal with a depth of 7 feet was reported inside the bay in about 48°31'01"N., 123°00'08"W. The passage west of Dinner Island should not be attempted.

(264) **Fisherman Bay**, on the east side of San Juan Channel abreast North Bay, is a shallow lagoon entered by a marked, narrow, and tortuous channel. A rock awash is on the east side of the channel at the mouth of the bay. Good anchorage with shelter from all winds may be had in 10 to 12 feet, soft bottom, for small craft with local knowledge. The tidal currents have considerable velocity. The village of **Lopez**, located near the entrance, is the largest community on Lopez Island. A resort in the bay has a pier and floats with berths for about 66 craft; electricity, gasoline, diesel fuel, water, ice and overnight facilities are available. A marina adjacent to the resort has 100 berths, water, electricity and marine supplies, and a 15-ton lift is available.

(265)

Turn Island to Gull Rock

(266) At **Turn Island**, off the east side of San Juan Island, San Juan Channel turns northwest for about 7.5 miles and connects at its north end with Spieden Channel and President Channel.

(267) **Turn Rock**, about 0.2 mile east of Turn Island, is a ledge bare at half tide; it should be given a berth of at least 100 yards. A light is on the rock. **Reid Rock**, 1.4 miles northwest of Turn Rock, is in midchannel off the entrance to Friday Harbor. The rock, covered 2¼ fathoms, rises abruptly from deep water and is marked by a lighted buoy.

(268) **Friday Harbor**, 1.4 miles west of Turn Island, is a small cove about 1 mile long and nearly as wide. **Brown Island**, locally known as Friday Island because of the housing development here, occupies the middle of the harbor, with shoals nearly 200 yards wide off both its east and south shores. A shoal, covered 3¼ fathoms, extends nearly into midchannel from the west shore of the island. Shoals off the southeast end of the island are marked by a daybeacon. The harbor may be entered either east or west of Brown Island. Anchorage may be had between Brown Island and the harbor waterfront in 6 to 7 fathoms, taking care to avoid the cable and pipeline area and the wrecks just to the northwest. City floats provide berthing space for pleasure craft.

(269) **Friday Harbor**, the town on the west shore of the cove, is the county seat and the population center of San

Juan Island, which has some farming in the interior of the island. Commercial fishermen and recreational boaters frequent Friday Harbor, especially in the summer months.

(270) The University of Washington maintains a marine biological laboratory 0.4 mile north-northwest off the north end of Brown Island. Private floating docks in the area are sensitive to wakes and may be used only with permission. SCUBA divers may be present in the vicinity; use caution and approach slowly. The UW property extends east-northeast, 0.25 mile from the pier, which marks the northern entrance to Friday Harbor. Approach this area with caution, as seawater pipes extend off the pumphouse building; experiments and divers are common.

(271) Friday Harbor is a **customs port of entry**. The customs office is about 75 yards west of the port's office, at the yacht club building. The customs officer also performs **immigration** and **agricultural quarantine** inspections.

(272) The Interisland Medical Center at Friday Harbor is the only complete medical facility in the San Juan Islands. In addition, Orcas and Lopez Islands have small clinics with resident physicians and paramedics. Air ambulance service to Seattle, Anacortes or Bellingham is available on all the larger islands.

(273) The Port of Friday Harbor small-craft harbor is protected by floating breakwaters marked by lights. Berths with electricity for over 500 craft are available. At least 150 of this total capacity is used for transient berthing. Water and pump-out station are available. **Note:** Vessels should not anchor within 100 yards of the floating breakwater because of the danger of fouling with the breakwater's anchor cables. A seaplane float is near the customs float at the port's small-craft harbor. There are three amber strobe signal lights in the harbor. They are located at the northeast end of the Port of Friday Harbor Docks, on the University of Washington Laboratory shore, and at the northwest end of Brown Island, respectively. It is reported that when activated, these strobe lights signal the takeoff or landing of seaplanes in the harbor. Gasoline, diesel fuel, water, ice and marine supplies are available at Friday Harbor. Southeast of the Port of Friday Harbor are a charter dock and ferry slip. Southeast of the ferry slip are condominiums with private docks.

(274) A shipyard is at the south end of Friday Harbor. A 35-ton lift is available; complete hull and engine repairs can be made.

(275) Freight and passengers reach Friday Harbor by airplane or by state ferry. The town has an airport with surfaced and lighted runways; twin-engine aircraft can be accommodated. Mail is transported by air.

(276) **Point George**, the west point at the entrance to **Parks Bay**, is across the channel from Friday Harbor. Good anchorage for small craft in 6 to 8 fathoms, soft bottom, can be had in the bay. The head of the bay, however, is foul with submerged piles.

(277) **Wasp Islands** are in the west approach to West Sound between **Neck Point**, the northwest tip of Shaw Island, and **Steep Point**, the southwest extremity of Orcas Island. Several narrow channels lead between the islands; the channels in general use are the North and Pole Passes, close under the Orcas Island shore. The tidal currents have considerable velocity in the channels, which should be attempted only by vessels with local knowledge.

(278) **North Pass**, between Steep Point on Orcas Island and the Wasp Islands, leads east from San Juan Channel to Deer Harbor and into Pole Pass. The pass is about 0.2 mile wide between Steep Point and **Reef Island** and is free of outlying dangers, except for a rock covered 10 feet, 0.3 mile east of the north end of Reef Island.

(279) **Deer Harbor**, east of Steep Point, has good anchorage in 6 to 7 fathoms about 0.2 mile from the head. **Fawn Island** is near the entrance of the harbor and about 200 yards from the west shore; vessels may pass on either side. The east shore of Deer Harbor should be given a berth of at least 300 yards because of a shoal that in some places extends more than 200 yards off.

(280) **Deer Harbor**, on the east side of the harbor, is a village with stores, a marina and an inn. Pleasure boats call here frequently in the summer. The marina has about 100 berths, including 65 transient berths that can accommodate craft up to 100 feet. Services available include electricity, gasoline, diesel fuel, water, ice, pump-out facility, launching ramp, marine supplies and a 40-ton marine railway, and full repairs can be made.

(281) A private light is on the end of a pier about 0.8 mile south-southeast of the town of Deer Harbor.

(282) **Crane Island** is off the entrance to Deer Harbor and about 1 mile southeast of Steep Point. The north shore of the island is foul with bare and covered rocks within 250 yards of it. A shoal covered ½ fathom is 350 yards north of the center of the north side of the island, and a rock that uncovers 5 feet is 200 yards off the east point, with foul ground between it and the shore.

(283) **Pole Pass** leads from North Pass to West Sound and separates Crane Island from Orcas Island; the fairway is 75 yards wide in its narrowest part. A 7-knot speed limit is enforced through Pole Pass and should not be attempted without local knowledge. A light is on the northeast side of the pass at its narrowest part.

(284) **Wasp Passage** leads from San Juan Channel to West Sound and separates Crane Island from the north shore of Shaw Island. A light is on the rock 300 yards east of Bell Island at the east end of the pass and on Cliff Island and **Shirt Tail Reef**, at the west end of the pass.

(285) **Bell Island**, small and wooded, is about 0.3 mile east of Crane Island. When transiting Pole Pass, vessels should pass Bell Island close-to in order to avoid the reef and shoals extending south from **Caldwell Point** on Orcas Island.

(286) **Cliff Island**, the southernmost of the Wasp Islands, is 0.4 mile southwest of Crane Island and is marked by a light on its south side. **Low Island**, small and 10 feet high, is about 700 yards west of Cliff Island, and **Nob Island**, 40 feet high, is close-to and northwest of Cliff Island. Local vessels bound from Friday Harbor to Deer Harbor

use a clear deep channel about 70 yards wide through the rocks and shoals lying between Cliff Island and Low Island.

(287) **Yellow Island**, the westernmost of the Wasp Islands, is about 0.8 mile west-northwest of Neck Point and about 3.5 miles north-northwest of Friday Harbor. The island is small, grassy, and nearly bare of trees. A shoal extends 300 yards west of the island and terminates in a rock that uncovers 3 feet and is marked by kelp. This island should be given a berth of not less than 0.5 mile. **McConnell Island**, northeast of Yellow Island, is the largest of the group. **Coon Island** is close to and southeast of McConnell Island. **Bird Rock**, which uncovers, is between McConnell and Crane Islands and is marked by a light.

(288) **Jones Island**, 2 miles north of Wasp Passage, is on the east side of the north entrance to San Juan Channel; the island is wooded. Small pleasure craft anchor in the bights of the north and south shores. A state marine park in the bight of the north shore has a small seasonal pier, campground and mooring facilities; limited water is available. A daybeacon marks a rock on the northeast side of Jones Island near the entrance of the north bight. **Spring Passage** separates Jones Island from the southwest part of Orcas Island; in general, the passage is free of danger.

(289) **Rocky Bay** is an open bight in the east side of San Juan Island. **O'Neal Island**, surrounded by a shoal, is almost in the middle of the bay.

(290) **Limestone Point**, about 1.2 miles north-northwest of O'Neal Island, forms the west point of the north entrance to San Juan Channel and is the northeast portion of San Juan Island. Heavy tide rips and eddies form off Limestone Point and Green Point on Spieden Island, 0.7 mile north.

(291) **Lonesome Cove**, 0.2 mile west of Limestone Point, has a resort with cabins. Limited berthage and gasoline are available.

(292) **Flattop Island**, prominent in the north approaches to San Juan Channel, is 1 mile northeast of the east end of Spieden Island. It is about 174 feet high, flat on top and sparsely covered with underbrush and trees. **Gull Rock**, 33 feet high and bare, is about 0.3 mile northwest of the northwest shore of the island.

(293)

White Rock to Point Doughty

(294) **White Rock**, 35 feet high, is about 2.7 miles north of the junction of Spieden and San Juan Channels and about midway between Flattop and Waldron Islands. Rocks, bare and covered, marked by kelp, extend nearly 0.3 miles northwest from White Rock. **Danger Rock**, covered 3 feet and marked by kelp, is 0.3 mile southeast of White Rock.

(295) The northwest approach to San Juan Channel from Boundary Pass extends between Waldron Island on the east and Stuart Island, Johns Island and Spieden Island to the west and south.

(296) **President Channel**, between Waldron and Orcas Islands, is about 5 miles long. Depths are generally great, and the passage is free of dangers. The tidal currents have a velocity of 2 to 5 knots, and heavy swirls and tide rips, especially with an adverse wind, are off the north point of Waldron Island and between Waldron and Patos Islands. The rips are generally heaviest with the ebb current. Rips and swirls are also heavy off Limestone Point and the east end of Spieden Island.

(297) **Orcas Island** is wooded and mountainous. **Mount Constitution**, a 2,402-foot peak on the island's east side, is marked by a stone lookout tower and a lighted radio tower. **Turtleback Mountain (Turtle Back Range)** and **Orcas Knob**, conical and bare on the summit, in the west part of the island, are prominent and easily recognized.

(298) **Point Doughty**, the northwest tip of Orcas Island, is bare and terminates in a small knob on its outer end. A resort in the bight, 1.5 miles south-southwest of Point Doughty, has seasonal floats with about 40 berths, gasoline, water, ice, a concrete launching ramp and some marine supplies. In 2006, a reported depth of 3 feet at mean lower low water was at the gas dock floats.

(299)

Local magnetic disturbances

(300) Differences from the normal variation of 2° or more have been observed in the vicinity of Point Doughty.

(301) **Parker Reef**, marked by a light, is about 0.7 mile off the north shore of Orcas Island and uncovers. The rocky reef extends about 110 yards in all directions from the light, except on the east side, where it extends about 160 yards from the light. Kelp covers the reef and the area between it and the shore. There are several shoal spots of 1¾ to 2¾ fathoms in the area within the 10-fathom curve south-southwest and west of Parker Reef.

(302) A passage between Sucia Islands on the north and Orcas Island on the south connects the north end of President Channel with the junction of the Strait of Georgia and Rosario Strait.

(303)

Minor Passages, San Juan Islands

(304)

Minor passages, San Juan Islands

(305) **Upright Channel**, between Lopez Island and Shaw Island, is about 3 miles long. **Canoe Island**, opposite **Flat Point**, constricts the passage to a width of less than 400 yards—Flat Point is marked by a light. General depths in the channel range from 20 to 25 fathoms. There are two detached shoals south-southwest of Canoe Island. The two shoals have depths of 7½ and 8½ fathoms. A rock awash is 250 yards southwest of the southwest end of Canoe Island. Anchorages for small craft may be had in **Indian Cove**, west of Canoe Island, in 4 to 7 fathoms, soft bottom.

(306) **Cayou Channel**, between Shaw and Orcas Islands, is the approach to West Sound from the east. General depths in the channel range from 11 to 30 fathoms with a 9-fathom shoal 700 yards east of Broken Point, the northernmost extremity of Shaw Island.

(307) **Orcas**, a village located on the north shore in a cove at the west end of Cayou Channel, has a public wharf with about 9 feet alongside. Several year-round stores are located at Orcas; water, ice and some marine supplies are available. The ferry slip just east of the wharf serves the interisland ferry that operates from Anacortes. A rock, covered 2½ fathoms, is about 125 yards south of the wharf; deep water is between the rock and the shore.

(308) **Blind Bay**, a small cove indenting Shaw Island just opposite Orcas, has depths of 2 to 6 fathoms. There are several reefs at its northwest entrance and along the southwest side of the bay. **Blind Island** is in the entrance. A private daybeacon marks a rock that uncovers 3 feet on the east side of the entrance. **Shaw Island**, a village at the east entrance, is served by the ferry. **Broken Point**, 1.6 miles west of the Shaw Island landing, projects some 0.3 mile north from the north side of the island and is quite prominent.

(309) **West Sound** indents the west part of the south shore of Orcas Island for about 2.8 miles. **Massacre Bay** is in the north part. The depths range from 7 to 20 fathoms. Anchorage in 7 to 12 fathoms may be had anywhere north of **Double Island**. which consists of two small islands connected at low water; it is close to the west shore near the entrance.

(310) **West Sound**, a village on the east shore, is about 2 miles north of the entrance. A few pilings remain of an old sawmill wharf; care should be taken to avoid submerged pilings about 100 feet southwest of the wharf. A marina with the largest moorage facility on Orcas Island and largest repair facility in the San Juan Islands is at West Sound. The marina has 180 berths, and guest moorage is available on a 250-foot float on the south side of the marina. Gasoline, diesel fuel, water, pump-out station, a 30-ton travel lift, hull and engine repairs and marine supplies are available.

(311) **Picnic Island** is a low islet in the south part of the cove, close south from West Sound settlement. A shoal extends about 150 yards west from the island. In the bight east of the island is a marina with berths for about 80 small craft. An 11-ton hoist here can handle craft to 36 feet for hull and engine repairs. Marine supplies and a salvage and retrieval tug are available. In 1969, a channel with a depth of 1½ feet was reported to exist between Picnic Island and Orcas Island; local knowledge is advised.

(312) **Harbor Rock**, 4 feet high, lies in midchannel about 1.9 miles above the entrance to the sound; it is just inside Massacre Bay. The rocky patch marked by a daybeacon is of small extent and is surrounded by depths of 1¾ to 10 fathoms.

(313)

East Sound to Lawson Reef

(314) **East Sound** indents Orcas Island north-northwest for about 6 miles. Depths vary from 15 fathoms at the entrance to 9 fathoms less than 0.2 mile from the head. There are no outlying dangers, and the shores may be approached to within 0.2 mile; however, a shoal covered less than 5 fathoms extends some 700 yards off the west shore, 0.8 mile inside the entrance. Anchorage may be had anywhere in the sound.

(315)

Local magnetic disturbance

(316) Differences from the normal variation of about 2° have been reported in the upper end of East Sound.

(317) **Olga** is a village on the west shore of **Buck Bay**, a small cove on the east shore of the sound just inside the entrance.

(318) **Cascade Bay**, a small cove on the east side of the sound, about 3 miles north of the entrance, is the site of a large resort with floats having berths with electricity for about 60 craft. Gasoline, diesel fuel, water and ice are available. Depths of 15 feet are reported alongside the floats. The large white resort hotel on **Rosario Point**, the west point of the bay, is conspicuous.

(319) **Eastsound**, the largest village on Orcas Island, lies in the west of two small adjacent coves at the head of the sound. The wharf is built out to a depth of 7½ feet; gasoline and water are available. A medical clinic is at Eastsound; air ambulance service to Anacortes, Bellingham or Seattle is available.

(320) **Obstruction Pass**, with a least width of 350 yards, separates **Obstruction Island** from Orcas Island and leads west from Rosario Strait to the inner passages and sounds of the San Juan Islands. A launching ramp and float are on the north side of the pass about 0.6 mile northwest of Deer Point; depths alongside the float are about 4 feet. Caution is advised because of the numerous private pilings and moorings in the area. Obstruction Pass is marked by a light on the northeast side of Obstruction Island.

(321) **Peavine Pass**, safer and straighter than Obstruction Pass, separates Blakely Island from Obstruction Island. The pass is a little over 200 yards wide at its narrowest part, and in midchannel the least depth is 6 fathoms. Peavine Pass Light 1, on the southwest point of Obstruction Island, marks the west entrance to the pass. **Spindle Rock**, marked by a daybeacon, lies about 0.2 mile offshore from Blakely Island at the east entrance to Peavine Pass.

(322)

Currents

(323) The currents through Obstruction and Peavine Passes have estimated velocities of 5.5 to 6.5 knots at times. Heavy tide rips occur east of Obstruction Island.

(324) **Blakely Island Shoal**, rocky and covered 11 feet, is 0.5 mile off the west side of Blakely Island and is marked

on its south side by a lighted buoy. The passage between the shoal and Blakely Island is deep and clear.

(325) **Blakely Island**, east of Lopez and Shaw Islands, is privately owned and maintained but open to the public. At its north end, bordering on Peavine Pass, is a small-craft basin and channel. About 65 berths are at the cove dock and inside the basin. An airplane landing strip and lodging are nearby. Gasoline, diesel fuel, water, ice and some marine supplies are available.

(326) **Thatcher Pass**, between Blakely Island and **Decatur Island**, is about 0.5 mile wide in its narrowest part. The pass is deep and free of danger with the exception of **Lawson Rock**, in midchannel, 0.4 mile north of Fauntleroy Point. The south point of Blakely Island and Lawson Rock are marked by lights. Thatcher Pass serves as the primary route for ferries transiting from Anacortes to the San Juan Island terminals.

(327) **Fauntleroy Point**, the northeast end of Decatur Island, is marked by a light. With a south wind and ebb current, heavy rips will be encountered off the east entrance to Thatcher Pass.

(328) **Leo Reef**, in the entrance to **Swifts Bay** on the northeast end of Lopez Island, uncovers and is marked by a light.

(329) In 1981, a rock covered 3 feet was reported about 350 yards west-northwest of Leo Reef Light. **Port Stanley** is a small village on the shores of Swifts Bay.

(330) **Upright Head**, the northernmost point of Lopez Island, is a narrow peninsula that attains an elevation of 260 feet. A ferry slip is in the small cove at the tip of this peninsula. A private light is 50 yards out from the slip. There is daily ferry service with the other islands and the mainland.

(331) **Lopez Sound**, on the east side of Lopez Island, may be entered from Rosario Strait by Thatcher Pass. The depths in the greater part of the sound are 3 to 5 fathoms, muddy bottom, but a narrow and deeper channel is along the east shore.

(332) Fair protection in southeast weather can be had in the area west of Decatur Island and north of **Center Island** in 3 to 5 fathoms, mud bottom. Strong winds blow across the low neck at the south end of Decatur Island and may make the area west uncomfortable for small craft. Good anchorage in west weather can be had in the large bight on the west side of the sound.

(333) **Decatur** is a small village on the west side of Decatur Island. A wharf with depths of 8 feet at its end is here.

(334) **Lopez Pass**, south of Decatur Island, leads from Rosario Strait into Lopez Sound. The pass has depths of 9 to 12 fathoms but is very narrow and little used. A light is at the south end of Decatur Island.

(335) **Rosario Strait**, the easternmost of the three main channels leading from the Strait of Juan de Fuca to the Strait of Georgia, is 20 miles long and from 1.5 to 5 miles wide. The water is deep, and the most important dangers are marked. The strait is in constant use by vessels bound for Cherry Point, Bellingham, Anacortes and the San Juan Islands. Vessels bound for British Columbia or Alaska also frequently use it in preference to the passages farther west, when greater advantage can be taken of the tidal currents.

(336)

Tides and currents

(337) See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about the times, directions, and velocities of the current at numerous locations throughout the area, including Rosario Strait and vicinity. Links to a user guide for this service can be found in chapter 1 of this book. The currents in Lopez, Thatcher and Obstruction Passes are reported to attain velocities of 3 to 7 knots. This should be kept in mind when proceeding through Rosario Strait, particularly at night or in thick weather. On the ebb of a large tide off the entrance to the passes, a south wind causes tide rips that are dangerous to small craft. In the area northwest of Belle Rock (48°29'35".N, 122°45'10"W.), mariners may experience a strong set to the west during ebb currents flowing out of Guemes Channel.

(338) Small craft can get good protection from west and south weather by anchoring near the head of **Watmough Bay**, at the extreme southeast end of Lopez Island.

(339) **Colville Island**, 64 feet high, small and bare of trees, is off the southeast end of Lopez Island. Heavy kelp extends west of Colville Island. **Davidson Rock**, 0.3 mile east of Colville Island, bares and is marked by a light. Mariners should give Colville Island and Davidson Rock a good berth. The southbound lane of the Traffic Separation Scheme is close south and east of Davidson Rock.

(340) **Aleck Bay**, the west and largest of three small bays on the south shore of Lopez Island, affords good anchorage except in heavy southeast winds for small vessels in 4 to 7 fathoms, mud bottom. Rocks, awash and covered, and reefs are along the west extremity; caution is advised.

(341) A bank covered 10 to 20 fathoms extends across the south entrance to Rosario Strait. A shoal in the west part of the bank, 1.6 miles east of Davidson Rock, is covered 4 fathoms and marked by a lighted bell buoy on the west edge. **Lawson Reef**, 0.6 by 0.3 mile in extent, in the east part of the bank, is 1.7 miles west of Deception Island. The reef has a least depth of 2.2 fathoms and is marked by a lighted bell buoy.

(342)

Deception Pass to Flounder Bay

(343) **Deception Pass**, the impressive 2-mile passage between Whidbey Island and **Fidalgo Island**, provides a challenging route that connects the north end of Skagit Bay with the south end of Rosario Strait. Near the middle of the pass, the width is reduced to 150 yards by **Pass Island**. A fixed highway bridge over the pass between Pass Island and Whidbey Island has a clearance of 144 feet at the center and 104 feet elsewhere. Overhead telephone and power cables 50 yards and 0.2 mile east

of the bridge have clearances of 150 feet and 220 feet, respectively.

(344) Deception Pass is used frequently by local boats bound from Seattle to Anacortes, Bellingham and the San Juan Islands. The pass should be negotiated at the time of slack, since the velocity of the stream at other times makes it prohibitive to some craft; however, many fast boats run it at all stages of the tide. The pass is also used by log tows from the north bound to Everett or Seattle, which prefer this route to avoid the rough weather west of Whidbey Island.

(345) Currents in the narrows of Deception Pass attain velocities in excess of 8 knots at times and cause strong eddies along the shores. With west weather, heavy swells and tide rips form and make passage dangerous to all small craft. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(346) **Canoe Pass**, north of Pass Island, is not recommended except for small craft with local knowledge.

(347) **Deception Island**, 1 mile west of Pass Island, is 0.4 mile northwest of **West Point**, the northwest end of Whidbey Island. A shoal that bares at low water extends 175 yards (160 meters) south of Deception Island. Foul ground extends 262 yards (240 meters) northwest of West Point. The passage between these two hazards is 200 yards (183 meters) wide with a least depth of 2.5 fathoms and great care should be taken when navigating in this area. **Northwest Pass**, north of Deception Island, is the preferred route. The Northwest Pass channel is deeper but narrows and follows close to Lighthouse Point; a light is on the point.

(348) **Strawberry Island** lies almost in the middle of Deception Pass, 0.4 mile east of Pass Island. **Ben Ure Island** is 0.2 mile south of Strawberry Island at the entrance to Cornet Bay; a light is at the northeast end of the island.

(349) **Cornet Bay**, shallow and suitable for small craft only, indents the north end of Whidbey Island, in Deception Pass. A marina with a privately dredged entrance channel and mooring basin is in the bay; the channel is marked by private lights and daybeacons. The marina has about 85 open and covered berths at the floats and can provide gasoline, diesel fuel, electricity, water, ice and marine supplies. A marine service and repair facility is west of the marina. Deception Island State Park is east of the marina and has moorage floats, pumpout facility and launching ramps.

(350)

Routes

(351) From west the best water through Deception Pass will be found 0.3 mile west of **Rosario Head**, a point 0.5 mile north of Deception Island. Steer a southeast course to pass about 100 yards southwest of the light on Lighthouse Point; then follow an east course through the middle of the pass, being careful to guard against sets from the current when running partly across it. After passing under the bridge, favor slightly the north shore so as to avoid the pinnacle rocks and ledges making out from the south shore. After leaving Pass Island, steer to pass about midway between Ben Ure and Strawberry Island. Strawberry Island should not be approached within 125 yards because of a reef, marked by kelp, south of the island. From a position off Ben Ure Island Light 2, steer a northeast course to pass about midway between **Hoypus Point** and **Yokeko Point**. The flood current north and west of Strawberry Island sets northeast and should be guarded against.

(352) **Bowman (Reservation) Bay**, a small bight between **Reservation Head** and Rosario Head, offers anchorage for small craft in 2¼ fathoms, mud bottom. **Northwest Island**, between Rosario Head and Sares Head, is 28 feet high and grass-covered. **Sares Head**, 1 mile north of Deception Island, is steep-to and 480 feet high.

(353) **Burrows Bay** indents the west shore of Fidalgo Island between **Biz Point** and **Fidalgo Head**. Burrows Bay is a broad open bight affording anchorage in the north part, in 15 to 16 fathoms, soft bottom. Protection from west and north is afforded by **Burrows Island** and **Allan Island**, but the bay is exposed to south weather. In the southeast part, the depths are less than 6 fathoms, and in places shoals extend almost 0.4 mile off the east and south shores of the bay. East of the passage between Allan and Burrows Islands is a middle ground with a least depth of 5 fathoms. Small craft using Deception Pass, bound to or from points in the islands or from Bellingham Bay, pass through Burrows Bay and the passage north of Burrows Island.

(354) **Burrows Island Light** (48°28'41"N., 122°42'49"W.), 57 feet above the water, is shown from a 34-foot white square tower on a building at the west end of the island; a mariner-radio-activated sound signal at the station is initiated by keying the microphone five times on VHF-FM channel 83A.

(355)

Local magnetic disturbance

(356) Differences from normal variation of 4° have been observed on the east shore of Burrows Bay.

(357) **Williamson Rocks**, a group of small, grass-covered islets and rocks, are 0.5 mile south of Allan Island and are marked on the south side by a lighted gong buoy. **Dennis Shoal**, 500 yards off the south shore of Allan Island and 0.6 mile northwest of Williamson Rocks, bares and is marked on its west side by a buoy.

(358) **Flounder Bay**, a well-sheltered basin and popular yachting harbor at the north end of Burrows Bay, is the site of a large marina. The entrance channel is protected by jetties and marked by private lights. In 2007, a depth of 3 feet was reported in the entrance channel. The east side of the entrance is subject to shoaling. Gasoline, diesel fuel, water, ice, about 250 berths with electricity, transient

berths, dry storage facilities, two 1½-ton hoists, a 24-ton lift and marine supplies are available at the marina. Hull, engine and electronic repairs can be made. A private company located at the west end of the marina provides heavy transport service to the islands. A road connects the bay with a highway, providing access to the state ferry terminal in Ship Harbor, the Anacortes airport and the city of Anacortes.

(359)

Bird Rocks to Alden Bank

(360) **Bird Rocks**, consisting of three rocks close together, are near the middle of Rosario Strait, about 2 miles west-northwest of Burrows Island Light. The southernmost and largest is 37 feet high. There is deep water close-to, and passage may be made on either side of the rocks.

(361) **Belle Rock**, bare at extreme low water and marked by a light, is about 0.5 mile northeast of Bird Rocks. Belle Rock can be passed about 0.6 mile to the east by keeping **Tide Point**, the west extremity of Cypress Island, and **Lawrence Point**, the east end of Orcas Island, in range on a bearing of about 359°.

(362) Rosario Strait is generally clear, with great depths, except for the following principal offshore dangers:

(363) **Kellett Ledge**, 2 miles north of Point Colville, extends 700 yards off **Cape St. Mary**, on the southeast part of Lopez Island. The ledge is marked by kelp and a buoy and uncovers at the lowest tides. In 2000, two shoal spots were reported east of the ledge. The first shoal was about 550 yards east in about 48°26'58"N., 122°47'13"W. with a depth of about 7 fathoms. The second shoal was about 700 yards east in about 48°26'57"N., 122°47'05"W. with a depth of about 8 fathoms.

(364) **James Island** is close off **Decatur Head**, the east end of Decatur Island. Between the two islands is a deep but narrow passage. James Island has two hills with heights of 260 and 219 feet.

(365) **Pointer Island**, 16 feet high, is 0.3 mile off the southeast shore of Blakely Island, and **Black Rock**, 4 feet high and marked by a light, is 0.5 mile off the east shore of the island.

(366) **Cypress Island**, 1,530 feet high, steep on the lower slopes and gently rounding at the top, is on the east side of Rosario Strait and opposite Blakely Island. From south the island appears to lie in the middle of Rosario Strait.

(367) A shoal extends about 0.4 mile south from **Reef Point**, the southwest tip of Cypress Island. A lighted buoy is about 0.7 mile south of Reef Point. Vessels rounding the point should not attempt to pass between the buoy and the point as submerged piles and heavy kelp may exist in that area.

(368) **Strawberry Island**, small, low, and wooded, is about 400 yards off the west shore of Cypress Island. Passage east of it is not recommended. An indifferent anchorage may be had in **Strawberry Bay** in 7 fathoms; it is seldom used.

(369) **Lydia Shoal**, covered 4 fathoms and marked on its south side by a lighted gong buoy, is 1 mile east of Obstruction Pass Light. **Peapod Rocks**, marked by a light on the largest rock of the group at the north end, are 1 mile south of Lawrence Point on Orcas Island. This group of islands extends about 1 mile in a northeast direction, some 0.5 mile from the Orcas Island shore, which is fringed with rocks and reefs.

(370) **Buckeye Shoal**, with a least depth of 3½ fathoms, is 1.2 miles south-southeast from **North Peapod** and is marked by a lighted bell buoy. Between this and the north end of Cypress Island are **Cypress Reef**, a dangerous rocky patch marked by a daybeacon at the south end, and **Towhead Island**, 0.3 mile to the southeast and about 400 yards north of the north end of Cypress Island. The passage between the two is used by local vessels, especially those plying between Obstruction Pass and Bellingham Bay.

(371) **Doe Bay** indents the southeast shore of Orcas Island abreast Peapod Rocks. **Doe Bay (Doebay)**, a village on the bay, has a wharf with 12 feet at its end; during strong south winds the wharf should not be approached. Doe Island, 0.6 mile south-southwest of Doe Bay, is a state park.

(372) **Sinclair Island**, north of Cypress Island, is wooded and comparatively low in places; dangerous reefs extend 0.8 mile off the north shore. Portions of **Boulder Reef**, the outermost danger, uncover at half tide; kelp marking the reef is frequently drawn under by the current. The outer end of the reef is marked by a lighted bell buoy. **Urban**, a village at the southwest end of the island, has a pier with depths of 12 feet at the end.

(373) **Lummi Island**, wooded and about 8 miles long, forms the east side of the north end of Rosario Strait, opposite Orcas Island. The north part is low, but in the south part **Lummi Peak** attains an elevation of over 1,600 feet.

(374) **Lummi Rocks** are off the southwest shore of Lummi Island about 3 miles northwest of **Carter Point**, the south tip. They are marked by a light.

(375) Shoals extend over 0.5 mile from **Point Migley**, the northwest extremity of Lummi Island; the northwest edge of the shoals is marked by a lighted buoy. **Village Point** on the northwest side of Lummi Island is marked by a light. **Legoe Bay** is an open bight southeast of Village Point. A small seasonal marina and boat launch is located in Legoe Bay.

(376) **Clark Island** and **Barnes Island** and the several adjacent rocks and islets lie almost in the middle of Rosario Strait, about 2.5 miles north-northwest of Lawrence Point on Orcas Island. These islands may be passed on either side, giving them a berth of 0.5 mile. A light, 40 feet above water, is on the easternmost island.

(377) **Matia Island**, a wildlife refuge about 4 miles west of Point Migley, is 120 feet high and wooded. The mooring float of a State marine park is in **Rolfe Cove** on the northwest side of the island; water is available. **Puffin Island**, 40 feet high, is about 0.2 mile east of Matia Island. A reef, marked at its southeast extremity by a light,

extends east from the southeast end of Matia Island to a point about 0.2 east of Puffin Island. Mariners should not attempt to pass between the islands.

(378) **Alden Bank**, 3 miles north of Matia Island, within the 10-fathom curve, is about 3 miles long in a southeast direction. The shallowest part is near the southeast end of the bank with depths of 2¼ to 4 fathoms covering a considerable area and marked by kelp. The bank is marked by a lighted gong buoy off its northwest end, a lighted bell buoy off its southeast end. Caution is advised due to the heavy concentrations of crab pots and marker buoys, especially in the southern part of the bank.

(379)

Skagit Bay to Bay View

(380) **Skagit Bay**, north part, between the north part of Whidbey Island and the mainland, is entered from the north through Deception Pass and from the south through Saratoga Passage. Skagit River, described in chapter 8, empties into the southeast part of the bay.

(381) The greater portion of Skagit Bay is filled with flats, bare at low water. Shoals extend 100 to 300 yards off the Whidbey Island shore.

(382) Along the shore of Whidbey Island, between it and the edge of the flats, is a natural channel varying in width from 0.2 to 0.5 mile, except at Hope Island, where it narrows to 150 yards. The channel is marked with lights and buoys from Deception Pass to the north entrance of Saratoga Passage. The main channel from Deception Pass south through Skagit Bay has depths of 6 fathoms or more.

(383) Velocity and direction of the current vary throughout this channel. The flood current enters through Deception Pass and sets in a generally south direction. The ebb flows in a general north direction. Southwest of Hope Island, the velocity is 2.3 knots on the flood and 2.0 knots on the ebb. South of Goat Island the velocity is 1.8 knots on the flood and 1.4 knots on the ebb. North of Rocky Point the velocity is 0.6 knot on the flood and 1.0 knot on the ebb. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.he Tidal Current Tables for predictions.

(384) **Similk Bay**, at the north end of Skagit Bay, is used for log-rafting operations and is unsafe for navigation due to numerous submerged piles. **Skagit Island** and **Kiket Island**, 111 feet and 194 feet high, respectively, are just south of Similk Bay opposite the east entrance to Deception Pass. **Hope Island**, 1 mile south of Skagit Island, is fringed with rocks off its east side and marked by a light on its west point. An aquiculture site, marked by private lights, is 0.4 mile north-northeast of Hope Island in about 48°24'28"N., 122°33'33"W. **Ben Ure Spit**, across the channel from Hope Island, is a low projecting point within a shoal extending about 350 yards east.

(385) Good anchorage may be had in **Kiket Bay**, North of Hope Island, and vessels at times make use of this anchorage area while waiting for slack water in Deception Pass.

(386) The narrow channel east of Hope Island is used by small craft with local knowledge. This channel, with a controlling depth of 5 fathoms, passes 130 yards off the Hope Island shore. The bottom is rocky and very irregular, and numerous dangers marked by heavy kelp are between the channel and the Fidalgo Island shore. A summer anchorage for pleasure craft is south of **Sneeoosh (Hunot) Point**.

(387) **Seal Rocks**, 1.4 miles south of Hope Island, are on the east side of the main channel. They are marked by a light.

(388) **Swinomish Channel** is a dredged channel that connects Skagit Bay and Padilla Bay. The entrance channel from Skagit Bay leads east-northeast between two jetties and north of **Goat Island**, thence through **Hole in the Wall**, at the south part of Fidalgo Island, and north to Padilla Bay. Goat Island is rocky, steep and timber covered. The south jetty, submerged except for a small section near Goat Island, extends about 0.6 mile west of the island and is marked by buoys. The north jetty, submerged and marked by a light off its west end, extends west about 1.1 miles from the south end of Fidalgo Island. The channel is marked with lights, daybeacons and lighted and unlighted buoys. A **251.9°** lighted range is on the Skagit Bay side.

(389) Several bridges and overhead power/telephone cables cross Swinomish Channel—minimum clearance of the cables is 72 feet. At the Padilla Bay entrance, the railroad swing bridge has a vertical clearance of 8 feet. The span is left in the open position until a train approaches. Twin fixed highway bridges 0.2 mile south of the swing bridge have a vertical clearance of 75 feet. Just south of La Conner, the highway fixed bridge has a vetical clearance of 75 feet for a center width of 275 feet.

(390) Most of the yachts going between Bellingham and Seattle prefer Swinomish Channel to Deception Pass because of the calmer water and shorter run. The channel is used extensively for towing logs. Two floats and a launching ramp are under the east end of the highway bridge at the north end of Swinomish Channel.

(391) **La Conner**, near the south end of Swinomish Channel, is the center of a rich agricultural district and has several fish canneries. Many commercial fishing boats operate from here. Piers, wharves and mooring floats are along the entire waterfront, much of which is bulkheaded. A marina at La Conner operates a south and north basin along the east side of the channel about 0.6 and 0.8 mile north of the highway fixed bridge, respectively. The marina has 500 covered and uncovered berths, including about 60 transient berths, and can also provide dry storage. Services available include electricity, gasoline, diesel fuel, water, ice, pump-out facility, launching ramp, marine supplies and an 82-ton marine lift, and complete repairs (hull, engine, electrical) can be made.

An extensive log storage and sorting yard is on the west side of the channel opposite the marina basins.

(392) **Guemes Channel**, between Guemes Island on the north and Fidalgo Island on the south, leads east from Rosario Strait to Padilla Bay. The channel, which is about 3 miles long and 0.5 mile wide at its narrowest point, has depths of 8 to 18 fathoms. Lighted buoys mark the channel at the west end.

(393)

Local magnetic disturbance

(394) Differences from normal variation of more than 2° have been reported off the southeast point of Guemes Island.

(395) **Shannon Point**, the south point at the west entrance of Guemes Channel, is low and rounding and marked by a light and a mariner-radio-activated sound signal, initiated by keying the microphone five times on VHF-FM channel 81A. A shoal extends to the northwest from the point.

(396) The current velocity in Guemes Channel exceeds 5 knots at times. It is reported that the flood (east current) is accompanied by an eddy between the east end of Guemes Island and Cap Sante with the west countercurrent extending about 200 yards from the shore along the north side of Fidalgo Island. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(397) **Ship Harbor** is a bight close east of Shannon Point, at the west entrance to Guemes Channel. Washington State ferries to the San Juan Islands and Sydney, BC, depart frequently from facilities on the west side of the bight. Vessels anchoring here in heavy weather should be cautious of dragging anchor because the bottom is not good holding ground.

(398) **City of Seattle Rock**, covered 1½ fathoms, is 200 yards offshore on the south side of the channel, 2 miles east of Shannon Point.

(399) **Anacortes** is on the south shore of Guemes Channel. The port is incorporated as the **Port of Anacortes**. Commerce includes logs and petroleum products.

(400) **Cap Sante Waterway** is a dredged channel leading to a boat basin on the east side of Anacortes. The basin is protected by breakwaters marked by lights on the outer ends. Vessels should give the south breakwater a berth of at least 40 feet to stay in good water. Another dredged channel extends about 0.7 mile southwest from the entrance of Cap Sante Waterway to the waterfront area of Anacortes Industrial Park. A marina is at the north end of the area. Private berthing with water, electricity, storage boxes and telephone connections are available. A haul-out and repair yard with a 35-ton lift is at the south end of the marina.

(401)

Anchorage

(402) General Anchorages have been established off Anacortes. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(403)

Pilotage, Anacortes

(404) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage is available from the Puget Sound Pilots. See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, early this chapter.

(405)

Towage

(406) Tugs may be arranged through the Marine Exchange of Puget Sound, which monitors radiotelephone VHF-FM channels 9 and 20.

(407)

Quarantine, customs, immigration and agricultural quarantine

(408) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(409) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(410) Anacortes is a **customs port of entry**,

(411)

Harbor regulations

(412) The port is controlled by a port commission and a manager, whose office is on the port wharf at the foot of Commercial Avenue.

(413)

Wharves

(414) The Port of Anacortes operates three deep-draft wharves. The alongside depths are reported depths—for information on the latest depths contact the port authorities. Water is available at the three port wharves.

(415) **Port of Anacortes, Pier No. 1** (48°31'20"N., 122°36'40"W.): wooden pilings, 540-foot berthing space; 33 feet alongside; deck height, 16 feet; forklifts; receipt and shipment of general cargo.

(416) **Port of Anacortes, Pier No. 2** (48°31'20"N., 122°36'24"W.): concrete piling with concrete surface, 1,113-foot berthing space with dolphins; 44 feet reported alongside; deck height, 16 feet; 13½ acres open storage; shipment of petroleum coke and logs; mooring vessels. The wharf is marked on each end by a private light.

(417) **Port of Anacortes, Curtis Wharf** (48°31'20"N., 122°37'00"W): steel piling with concrete surface, 313-foot berthing with dolphins; 28 feet reported alongside; deck height, 16 feet; one acre of unpaved open storage.

(418) **Note:** Considerable current sets along the faces of these wharves (east flood, west ebb); it is advisable to dock at slack water or against the current.

(419)

Supplies

(420) Gasoline, diesel fuel and other small-craft supplies may be obtained at the port boat haven. Ice and marine supplies are available in the city.

(421)

Repairs

(422) The largest repair facility in the area is on the south side of Guemes Channel (48°31'18"N., 122°36'35"W.) The yard has a 5,000-ton capacity lift, a 314-foot dry dock with a 9,000-ton capacity and a 600-ton marine railway. Machine and carpentry shops are also available, and complete hull and engine repairs can be made. A marina on the east waterfront of Anacortes, south of Cap Sante Boat Haven, can provide complete repairs (hull, engine, electrical) and has a 55-ton marine lift. A large boatyard about 1.5 miles east of Shannon Point (48°30'43"N., 122°38'44"W.) is also equipped for complete repairs with two marine railways having a maximum capacity of 2,000 tons. Complete repairs can also be found at a repair shop in the Cap Sante Boat Haven.

(423)

Small-craft facilities

(424) Cap Sante Marina, Port of Anacortes, has up to 200 permanent and transient berths. Services and supplies available include gasoline, diesel fuel, electricity, pumpout facility water, ice and a 13-ton marine lift. A harbormaster assigns berths and can be contacted on VHF-FM channel 66A.

(425)

Communications

(426) The port has an airport about five miles west of the city center. A private automobile ferry provides regular service to Guemes Island. Washington State Ferries provide service to the San Juan Islands and Sydney, BC, from facilities at Ship Harbor Bight.

(427) **Fidalgo Bay**, a shallow arm of Padilla Bay, extends south from the east end of Guemes Channel.

(428) **Padilla Bay**, between the mainland and the north part of Fidalgo Island, is largely occupied by drying flats, but deep water is east of Anacortes and Guemes Island. Entrance to the bay from Rosario Strait is through Guemes Channel; a passage east of Guemes Island leads into Padilla Bay from the north.

(429) **March Point** is a low peninsula between Fidalgo and Padilla Bays. The two long Tesoro and Shell Refinery piers extend north to deep water from the north end of the point. The west pier, owned by Shell Oil, has a 7,150-foot approach trestle and deck height of 22 feet and is marked at the east and west ends by private lights. The north side of the pier has 1,130 feet of berthing space with dolphins and depths of 45 feet alongside; the south side of the pier has 735 feet of berthing space with dolphins and depths of 45 feet reported alongside.

(430) The Tesoro Pier, 0.5 mile east of the Shell Pier, has a 3,466-foot approach trestle, deck height of 22 feet, and is marked at the east end by a private light and at the west end by a private light and sound signal. The north side of the pier has 974 feet of berthing space with dolphins and a depth of 45 feet reported alongside; the south side of the pier has 820 feet of berthing space with dolphins and a depth of 38 feet reported alongside.

(431) About 200 yards from the Tesoro Pier, when making a starboard landing, a vessel is set by the current onto the pier, and great care must be taken to avoid being set hard onto the pier. The use of an anchor in docking is advisable. The current is at times pronounced when docking at the inside berth, and care must be taken to avoid being set onto the shoal to the south. Range markers facilitate docking. Less current is generally experienced at the Tesoro Pier; however, the use of an anchor is recommended when making a starboard landing.

(432)

Local magnetic disturbance

(433) Differences from normal variation of 2° have been observed in the vicinity of March Point.

(434) **Bay View**, a village across the flats of Padilla Bay ESE from March Point, has no facilities except for a small boat repair shop.

(435)

William Point to Bellingham

(436) **William Point**, 100 feet high and marked by a light, is the west point of **Samish Island**, which forms the north side of Padilla Bay. The point is wooded and, because of the low land east of it, appears as an island although it is connected with the mainland. It is marked by a light.

(437) **Bellingham Channel**, deep between Cypress and Guemes Island, is the most direct route to Bellingham Bay from Anacortes. Between Cypress, Guemes and Sinclair Islands the tidal currents have considerable velocity; however, between Sinclair and Vendovi Islands the velocities are considerably less. Bellingham Channel Lighted Buoy 6, about 300 yards northwest of Clark Point, was reported to submerge during periods of strong currents. Lighted buoys mark the east side of Bellingham Channel and a light is on the west side of the channel off the east side of Cypress Island.

(438) **Clark Point**, at the northern end of Bellingham Channel, is a steep bluff forming the north point of Guemes Island. A reef extends 300 yards north from the point. A marina, about 1.6 miles southeast of Clark Point, has gasoline. A launching ramp and a hoist that can handle small craft to 18 feet is available. **Vendovi Island** is 1.8 miles northeast of Clark Point. Shoaling to 4 fathoms, 0.4 mile southwest of Vendovi Island, is marked by a buoy. A light marks the east side of the island. A private light is in a small cove on the northwest side of Vendovi Island.

(439) Deep-draft vessels approaching Bellingham Bay from north use the channel between Lummi and Sinclair Islands. With the exception of Viti Rocks and the dangers north of Sinclair Islands, this channel is free of danger. The fairway is deep and has a width of 0.6 mile at its narrowest part, between **Viti Rocks** and **Carter Point**,

the south tip of Lummi Island. The northwesternmost Viti Rock is 35 feet high, 200 yards long, and marked by a light. A lighted bell buoy marks the shoal extending south-southeast from the southernmost rock.

(440) **Smugglers Cove**, on the east side of Lummi Island, is 2.5 miles north of Carter Point. A large stone quarry with mooring facilities for rock barges is prominent.

(441) **Hale Passage**, 6 miles long, separates Lummi Island from the mainland to the northeast. Depths in the passage vary from 2 fathoms on the bar near the northwest end to 20 fathoms in the southeast end of the channel.

(442) **Lane Spit**, on the west side of Hale Passage 1.5 miles southeast of Point Migley, is marked by a lighted buoy. A light is on the east side of Lummi Island 3 miles southeast of Lane Spit.

(443) **Lummi Island**, a village on the west side of Hale Passage, is 1 mile south of Lane Spit. The village and island are linked to the mainland at **Gooseberry Point** by an automobile ferry. The ferry dock at Lummi Island is marked by a private light. A pier, adjacent to the ferry slip at Gooseberry Point, has a 6-ton hoist that can handle craft 28 feet long; gasoline, water, ice, marine supplies and hull and engine repairs are available. Depths of 4 feet are reported off the end of the pier at the hoist.

(444) From **Point Francis**, the rounded high bluff on the southeast side of **Portage Island**, a shoal and broken ground extend south-southeast to Eliza Island. The depths range from 5 to less than 1½ fathoms about midway between the point and the island. A lighted buoy is about 300 yards south of the 1½ fathom spot.

(445) **Bellingham Bay**, from William Point to the head, is about 12 miles long and 4 miles wide. Anchorage may be obtained almost anywhere in the bay south of the flats; the depths, over the greater portion, range from 6 to 15 fathoms. Because of the mud bottom, vessels are apt to drag anchor in heavy weather. Recreational and commercial fishing is popular in this area. Numerous crab pots fill the bay during crabbing season.

(446) **Samish Bay**, separated from Padilla Bay by Samish Island, with flats bare for a considerable distance at low water, forms the southeast part of Bellingham Bay. Extensive oyster culture is carried on in the east portion of the bay.

(447) **Eliza Island**, low and partly wooded, is 1 mile northeast of Carter Point. The island is well populated with numerous private boat facilities along its shores. Shoals fringe most of the island, which should not be approached closer than about 400 yards. A rock covered 1 fathom is some 500 yards north of the west tip of the island.

(448) Vessels anchoring between Lummi Island and Eliza Island during heavy weather should be cautious of dragging anchor because of the poor holding ground.

(449) **Eliza Rock**, marked by a light, is off the south end of Eliza Island.

(450) **Chuckanut Bay**, which indents the east shore of Bellingham Bay, is a cove affording shelter to small craft. Relatively free of obstructions, the bay does include an island and a dangerous chain of rocks near the entrance. **Chuckanut Rock** is located in the north part of the bay and has rocks awash to the north and south. Shoal areas surround **Chuckanut Island** to the west and south; the island should not be approached closer than 200 yards. The small-craft launching ramp of **Larabee State Park** is at **Wildcat Cove**, 0.6 mile southeast of **Governors Point** at the southwest entrance to Chuckanut Bay.

(451) **Post Point**, on the northeast side of Bellingham Bay, is 1.5 miles north-northwest of the north entrance point of Chuckanut Bay. A shoal, marked by a lighted buoy, extends about 450 yards west from the point. Starr Rock, covered 1 fathom, is about 200 yards offshore and is marked by a buoy. Vessels should not pass inside the buoy.

(452) **Bellingham** is at the head of Bellingham Bay on the east shore. Debris and several submerged pilings and dolphins exist along the formerly industrialized areas of the Bellingham waterfront between Squalicum Creek Waterway and the piers of South Bellingham; mariners are urged to use caution when navigating in or around this area.

(453) The south terminal of the Port of Bellingham, on the north side of Post Point at South Bellingham, includes the Alaska State Ferry Terminal Dock and a boat ramp. Bornstein Seafoods is on the I and J Street Waterway; fishing boats unload at this wharf. There are several other light industry and commercial facilities around the harbor.

(454) **Whatcom Creek Waterway** at the southeast end of Bellingham Harbor, **Squalicum Creek Waterway** at the northwest end of the harbor and **I and J Street Waterway** in between provide dredged channel access to the port facilities at Bellingham. Bellingham Yacht Harbor is adjacent to and southeast of Squalicum Creek Waterway; the yacht harbor is described later in this chapter.

(455)

Prominent features

(456) Particularly prominent at night is the lighted sign HERALD on the newspaper building (48°44'51"N., 122°28'44"W.) and the lighted sign ICE on the Bellingham Cold Storage building (48°45'28"N., 122°30'37"W.). Also prominent are the stack at the cement plant 1.5 miles northwest of I & J Street Waterway Light 1 and the stack 0.3 mile to the east and the church spire near the Bellingham waterfront.

(457)

Channels

(458) A **federal project** provides for a depth of 30 feet in Whatcom Creek Waterway Outer and Middle Reaches; thence 18 feet through the Inner Reach, 26 feet in Squalicum Creek Waterway, and 18 feet in I and J Street Waterway. Depths in Whatcom Creek Waterway are usually near project depth to the port wharf; the controlling depth for Middle and Inner Reach of this waterway may be considerably less than project depth. The controlling depth for Squalicum Creek Waterway

and I and J Street Waterway may also be considerably less than project depth. (See Notice to Mariners and latest editions of the chart for controlling depths.)

(459) Squalicum Creek Waterway is marked by lighted buoys and a lighted range. I and J Street Waterway is marked by lights and buoys. Whatcom Creek Waterway is marked by a lighted range. The port authority maintains depths of more than 30 feet alongside the Whatcom Creek Waterway port wharf and also dredges the small-craft basin.

(460)

Anchorages

(461) The bottom mud is a thin accumulation over hardpan, and is not good holding ground in heavy weather. A **general anchorage** and an **explosives anchorage** are in the bay. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.) Good holding ground may be found just north of **Governors Point**, near the south end of Chuckanut Bay.

(462)

Pilotage, Bellingham

(463) Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the west coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Bellingham is provided by the Puget Sound Pilots. (See Pilotage, Strait of Juan de Fuca and Puget Sound, indexed as such, early this chapter.)

(464)

Towage

(465) Tugs to 4,000 hp are available at Bellingham and larger tugs at Seattle. Arrangements for tugs should be made in advance through ships' agents or through the Marine Exchange of Puget Sound. Tugs monitor and use as a working frequency VHF-FM channel 7.

(466)

Quarantine, customs, immigration and agricultural quarantine

(467) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(468) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(469) Bellingham is a **customs port of entry**.

(470)

Coast Guard

(471) Bellingham Coast Guard Station is on the I and J Street Waterway.

(472)

Harbor regulations

(473) The city fire chief is responsible for the prevention of hazardous fire conditions in the harbor. The Port of Bellingham directs the operation of the North Terminal on Whatcom Creek Waterway, the South Terminal at Post Point and the yacht harbor east of Squalicum Creek Waterway. The port's general offices are located north of the I and J Street Waterway near the boat ramp (360–676–2500).

(474)

Wharves

(475) The Port of Bellingham operates two deep-draft terminals, one at South Bellingham (Fairview) and one on Whatcom Creek Waterway. The alongside depths of the facilities described are reported depths. (Contact the Port of Bellingham or the private operator for the latest depths.)

(476) **Port of Bellingham, Whatcom International Shipping Terminal, Main Wharf** (48°44'43"N., 122°29'39"W.): berthing space, 1,370 feet; depth alongside, 31 feet; deck height, 15½ feet; owned by Port of Bellingham and operated by Port of Bellingham and Bellingham Stevedoring Co.

(477) **Note:** If a tug is not furnished, the use of anchor in docking is recommended when winds prevail. Vessels backing out of the Whatcom Creek Waterway channel must stay in the axis of the channel until abeam of Starr Rock Buoy to avoid shoal water on either side.

(478) Bellingham Cold Storage and several seafood facilities are on the east side of Squalicum Creek Waterway. Fishing boats and an occasional ship unload fish in the area. A plywood mill is on the west side of the waterway.

(479)

Supplies

(480) Complete marine supplies are available for small craft and some for large vessels. Fuel oil is available by truck from Seattle.

(481)

Repairs

(482) Facilities for oceangoing vessel repair are located in Seattle, WA, and Vancouver, BC. Complete repair facilities are available for small craft. A propeller works, several machine shops, engine and deck-gear suppliers, and an electronic repair company are along the Bellingham waterfront. The larger of two repair yards is just west of the Port of Bellingham South Terminal. This yard has a machine shop and a marine railway that can handle vessels up to 700 tons, 120 feet long or 34 feet wide for hull repairs. Another repair yard at Squalicum Boat Harbor has a marine railway that can handle vessels up to 290 tons, 125 feet long or 24 feet wide for hull repairs. Several local machine shops in the area do engine repair work for the two repair yards.

(483) **Squalicum Boat Harbor**, adjacent to and southeast of the Squalicum Creek Waterway, is protected by breakwaters on its southeast and southwest sides. The harbor can be entered from the southeast between the two breakwaters or from the northwest from the Squalicum Creek Waterway. The ends of the breakwaters at the southeast entrance are marked by lights. The entrance from Squalicum Creek Waterway is marked by a light. Depths inside the harbor are 9 to 12 feet.

(484) Berths for about 1800 pleasure craft and fishing boats are in the harbor. A guest float is maintained near the **harbormaster's** office on the northeast side of the harbor (360–676–2542). Gasoline, diesel fuel, electricity, water, ice and marine supplies are available. Several marine equipment repair and fishing supply firms are in the area north of the southeast entrance to the harbor.

(485) A small-craft basin, protected by a breakwater on its south side, is north of I & J Street Waterway. The basin can be entered from I & J Street Waterway. Depths of 9 to 12 feet are in the basin. A boat ramp is on the east side of the basin.

(486)

Communications

(487) Bellingham is served directly by one major railway and has connections to another. It is on U.S. Interstate Highway 5 and is a hub for three state highways. The airport is about 2.5 miles northwest of the city.

(488)

Strait of Georgia

(489) The **Strait of Georgia** extends some 115 miles northwest from its south end, in the vicinity of Alden Bank, and is bordered on the west by Vancouver Island, BC, and on the east by the mainland of Canada. General depths are great and in many places exceed 200 fathoms.

(490) Vessels bound to the Strait of Georgia from Puget Sound should give the southwest shore, between Boundary and Active Passes, a berth of at least 2 miles because it is fringed with dangers. Point Roberts, on the north shore, affords an excellent landmark.

(491) A **Vessel Traffic Service** has been established in the Strait of Juan de Fuca, east of Port Angeles, and in the adjacent waters. (See **33 CFR 161.1** through **161.55**, chapter 2, for regulations, and the beginning of this chapter for additional information.)

(492)

Currents

(493) The tidal currents in the Strait of Georgia are not nearly as strong as those in the channels leading to it from the Strait of Juan de Fuca. The currents in the Strait of Georgia attain a velocity of 3 knots at times, particularly during the freshets of the summer, when the Fraser River discharges a large volume of freshwater. This fresh water, which has a peculiar milky color, flows across the banks at the mouth of the river and almost directly toward Active Pass. Frequently this water extends entirely across the strait and at times reaches into the inner channels along the shore of Vancouver Island; at other times, it reaches only to the middle of the strait and forms a striking contrast with the deep blue water of the Strait of Georgia.

(494) In the middle of the strait, north of Patos and Saturna Island, the velocity of the current varies from 1 to 3 knots, seldom exceeding the latter. The velocity is still less northwest of the mouth of the Fraser River, where the strait is about 15 miles wide. The tidal currents southeast of the mouth of Fraser River are slightly stronger off the south shore than off the north shore. The currents within a line joining Point Roberts and Sandy Point are scarcely felt, and vessels can take advantage of this, especially since good anchorage can be obtained in this vicinity.

(495) The tidal currents are stronger close to the south shore, which is swept by the rapid currents out of Active, Porlier and Gabriola Passes. The south-going tidal current in the Strait of Georgia sets strongly southwest into Active Pass. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(496)

Weather, Strait of Georgia

(497) In the open waters of the Georgia Strait, winds are usually either northwesterlies or southeasterlies. Southeasterlies are more frequent from October through March. Close to the British Columbia coast, they are often deflected and become easterlies. While the Georgia Strait is somewhat sheltered from the sea by the mountains of Vancouver Island, gales still occur three or four times per month. While some are associated with the intense storms of winter, particularly dangerous gales occur in clear weather. These are locally known as **Squamish winds**. They occur periodically in most of the main inlets in winter. They come up suddenly and may exceed 50 knots. Squamishes occur when a vast pool of very cold air accumulates on the interior plateau of British Columbia. A pressure fall at sea will trigger a movement of this air toward the coast. This flow is intensified by the direction and narrowness of the inlets. As the air reaches the mouths of these inlets, it spreads out over the strait and the wind speeds diminish. Winds rarely remain strong 15 to 20 miles away. Howe Sound, Jervis, Toba and Bute Inlets all experience squamishes each winter.

(498) In summer, winds in the Rosario and Haro Straits are usually southwesterlies. Summer breezes are variable and baffling in the San Juan Islands. North of Point Roberts, in the middle of the Georgia Strait, the prevailing winds are northwesterlies. Gales are uncommon, particularly in mid-summer, when storm activity reaches a lull.

(499) Georgia Strait is more affected by land fogs than sea fogs. These fogs form on cool nights under clear skies and light winds and usually dissipate by early afternoon. These conditions are most prevalent from September through February. During prolonged periods of cold, clear, calm weather, these fogs may persist for several days at a time. Land fog is more local than sea fog. Visibilities fall below 0.75 mile (1.4 km) on about 20 days annually, but this can increase to 60 days in preferred locations like the flat land in the delta of the Fraser River where the low water temperatures of the river help produce the fog.

(500)

Sandy Point to Blaine Harbor

(501) **Sandy Point**, about 2.5 miles north of Lummi Island and at the northwest side of **Lummi Bay**, is the site of an extensive housing development fronting a privately dredged basin. The entrance to the basin is marked by two lights.

(502) Between Sandy Point and **Cherry Point**, about 4.5 miles northwest, the shore of the mainland forms a bight in which there are no off-lying dangers. The piers of two large oil refineries and an aluminum smelter are in the bight. A **general anchorage** is off Cherry Point. (See **33 CFR 110.1** and **110.230**, chapter 2, for limits and regulations.)

(503) The 1,800-foot pier of the **Tosco Refining Company** is 2.4 miles north of Sandy Point. The L-shaped pier has 883 feet of berthing space and reported depths of 42 to 53 feet at the outer face and 722 feet of berthing space and depths of 35 feet at the inner face. Deck height is 18 feet. The pier is used for the receipt of crude oil and shipment of petroleum products and for bunkering vessels. The pier is marked by private lights and a sound signal. An oil refinery tower 0.8 mile inshore is prominent. A portside-to landing is preferred when docking at the outer berth during south winds and a flood tide; the use of an anchor is advisable.

(504) The long loading wharf and pier of the **Intalco Aluminum Corporation** is 0.8 mile north of the Tosco Refining Co. pier and 3.2 miles north of Sandy Point. The wharf has 950 feet of berthing space with dolphins and depths of 36 feet alongside. Deck height is 22 feet. The wharf is used for the receipt of alumina and liquified petroleum gas. Private lights and a sound signal are on the wharf, and two private lighted mooring buoys are just off the wharf. Vessels normally dock starboardside-to; however, a portside-to landing is required for vessels having their bridge forward of a cargo hold and with less than 30 feet between the hold and the rear of the pilothouse.

(505) The **BP pier**, with a 2,400-foot angular approach trestle, is at Cherry Point, about 4.5 miles north-northwest of Sandy Point. The pier has a north and south dock, each with 1,000 feet of berthing space and reported depths of 65 feet alongside; deck height is 22 feet. The face dolphins are marked by private lights. The facility is used for receipt of crude oil, shipment of petroleum products and bunkering vessels.

(506) The BP pier has rigid loading arms for the transfer of liquid cargo; chicksan rigs are not required on vessels. Tugs are available on advance notice from Bellingham, and a special gangway is provided in lieu of the ship's gangway. Each berth uses an oil boom deployment system that encircles a vessel after it is moored. This system includes the use of deployable buoys, which extend several hundred feet from the dock face and are anchored to the seabed—these buoys should be given a wide berth. Caution is necessary during flood currents as they tend to set vessels towards the pier face.

(507) **Point Whitehorn**, about 2.8 miles northwest of Cherry Point, is a conspicuous, bold bluff about 150 feet high; its seaward face is a steep cliff of white clay.

(508) **Birch Bay**, on the east side of the Strait of Georgia between Point Whitehorn and **Birch Point**, is an open bight. It affords some protection, in 4 to 5 fathoms, from north, but is open to the southwest. Flats that bare occupy a considerable area at the head of the bay. A number of resorts are along the shore. A mooring basin and private marina are on the north side of the bay; the basin entrance is marked by lights and daybeacons.

(509) The **International Boundary** between the United States and Canada is marked by a series of lights where it crosses Semiahmoo Bay and Boundary Bays.

(510) The **Peace Monument** on the boundary is a white masonry arch, facing north and south, about 28 feet above the ground. It is a distinctive landmark as it stands alone and shows offshore against a background of dark trees.

(511)

Caution

(512) The International Navigation Rules govern in all Canadian waters.

(513) **Point Roberts** is the prominent feature in approaching from either north or south. The east face is about 180 feet high and is composed of white, vertical bluffs. The point is well wooded, and because of the low land behind it, is usually made as an island, especially from south. The southwest extremity of the point is marked by a light. Extensive night drift-fishing in the area from Point Roberts to Blaine makes night navigation difficult. A marina at Point Roberts provides transient berths, gasoline, diesel fuel, ice and pump-out. An alongside depth of 6 feet was reported in 2010. Complete repair services with a 35-ton marine lift are available.

(514) Point Roberts is a **customs port of entry**.

(515) Temporary anchorage may be obtained west of Point Roberts in 8 fathoms, good holding ground, about 1 mile 321° from Point Roberts Light. The position is about 0.3 mile from the edge of Roberts Bank; vessels should not anchor any farther north.

(516) **Semiahmoo Bay** has its entrance between Birch Point and Kwomais Point, about 5 miles north-northwest. It is connected with Drayton Harbor by a narrow channel. The east part of the bay is shoal with extensive sand flats in the southeast part. Anchorage may be had in the bay in 3½ to 9 fathoms on the northwest side of Semiahmoo Spit, affording protection from south and southeast storms.

(517) **Drayton Harbor** is a small cove formed by **Semiahmoo Spit**, the extension of a sandspit north of Birch Point. It is about 2 miles long, but flats that bare at low water occupy a large area in the east and south parts of the harbor. A light and a buoy about 700 yards to the west-southwest are near the north end of the extensive sand flats off the northwest side of Semiahmoo Spit.

(518) The channel from Semiahmoo Bay to the cannery wharf on Semiahmoo Spit and to Blaine Harbor, east of the cannery wharf, has a controlling depth of about 21 feet; greater depths are possible with local knowledge. The 15-foot spot about 130 yards north of the cannery wharf, and the 9-foot spot about 300 yards east of the east end of the wharf should be avoided.

(519) **Blaine Harbor**, at Blaine, is a large and well-equipped small-boat basin near the entrance on the north shore of Drayton Harbor. The harbor is an active fishing center operated by the Port of Bellingham. A light marks the outer end of the breakwater that protects the basin on the south side. In 1981, depths through the entrance and in the basin were 11 feet except for shoaling along the edges. In 1999, the channel was reported as not being maintained. The harbor has berths for about 400 boats; 200 additional berths are being planned by the Port of Bellingham. A **harbormaster** is on duty in the harbor. Fish-processing plants and a fish reduction plant are in operation. Gasoline, diesel fuel, electricity, water, ice, launching ramp, dry storage facilities, marine supplies and pump-out facility are available in the harbor. A repair yard with a marine railway that can handle vessels to 300 tons, 80 feet long, or 21 feet wide is also available; hull repairs can be made. A depth of 2 feet has been reported at the entrance to the marine railway.

(520) **Blaine**, a small town on the northeast shore of Drayton Harbor, is a **customs port of entry.**

(521)

Quarantine, customs, immigration and agricultural quarantine

(522) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(523) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(524) The United States-Canadian boundary line passes through the north edge of town. The Burlington Northern Railroad serves the town.

(525)

Tides and currents

(526) The mean range of **tide** at Blaine is 5.9 feet, and the diurnal range of tide is 9.5 feet.

(527) The average velocity of the **current** in Drayton Harbor entrance is 1.0 knot. The flood sets southeast and the ebb northwest.

(528) Several buildings, an elevated tank and a small-boat basin, constituting the town of **Semiahmoo**, are at the north end of the sandspit.

(529) To enter Drayton Harbor and Blaine Harbor from Semiahmoo Bay, pass about 300 yards north of Semiahmoo Bay Light 4, and steer a course about midway between the cannery wharf and the Blaine Harbor boat basin taking care to avoid the 15-foot spot about 130 yards north of the cannery wharf. After passing the cannery wharf, favor the north side of the channel to avoid the 9-foot spot east of the east end of the cannery wharf and the spit east-southeast of the cannery, and make Blaine Harbor or anchor as convenient in Drayton Harbor. Anchoring in the shoal water of Drayton Harbor is not recommended because the floating debris and vegetation may clog a vessel's underwater intakes.

(530) The depths in Drayton Harbor and its entrance are subject to change.

(531)

Strait of Georgia, East Shore

(532) Additional detailed descriptions for this area are given in the **Canadian Hydrographic Service Sailing Directions, Juan de Fuca Strait and Strait of Georgia (PAC 201)** and **Pub. No. 154, Sailing Directions (Enroute) for British Columbia**, published by the National Geospatial-Intelligence Agency.

(533) **Boundary Bay** indents the mainland between **Kwomais Point**, the north entrance point of Semiahmoo Bay, and Point Roberts. The greater portion of the bay is filled with flats, bare at low water.

(534) Anchorage in 5 fathoms with good holding bottom is available about 1 mile east-northeast of the southeast point of Point Roberts, affording protection from west and northwest storms.

(535) Except for **English Bluff** about 1.5 miles north of **Boundary Bluff**, the coast north to Point Grey is low, featureless and barely discernible from the Strait of Georgia.

(536) A causeway extends about 1.8 miles southwest from English Bluff and terminates in a ferry landing; a light and sound signal are at the landing. A detached breakwater, about 0.2 mile long and marked by a light at its west end, is just south of the ferry landing. Just northwest of the ferry landing are the long pier and facilities used for bulk loading and export of coal by bulk carriers. These facilities, although operated by private interests, are owned by the Port of Vancouver.

(537) **Roberts Bank** and **Sturgeon Bank** are formed by the alluvial deposits of the Fraser River. These banks dry in patches and in places extend 4.5 miles offshore. They are steep-to: soundings of 50 fathoms will be found very close to the edge of the bank. Vessels proceeding along the edge of Roberts Bank should not bring the south extremity of Point Roberts to bear more than 114°.

(538) The cooperation of ships' masters is requested to avoid navigating their vessels between the charted traffic separation scheme and Sturgeon Bank. This is in the interest of the fishing industry and the reduction of damage to nets and fishing vessels by ships passing close to the fishing ground.

(539) **Fraser River** enters the Strait of Georgia about 10 miles northwest of Point Roberts. The main entrance to river is between two lighted buoys west of Sand Heads Light, which is near the outer end of Steveston Jetty—a shorter jetty is on the south side of the main entrance. The channels in Fraser River are constantly changing, and the aids to navigation that mark them are moved accordingly.

(540) **Pilotage** for the Fraser River is compulsory for vessels with a gross registered tonnage greater than 350 tons. For specific details on pilotage, please consult the **Canadian Hydrographic Service Sailing Directions, Jaun de Fuca Strait and Strait of Georgia**.

(541) **Steveston** on **Lulu Island**, about 1.0 mile north of **Pelly Point**, the south entrance point to Fraser River, extends along the bank of the river for about 1 mile. Several canneries and wharves are here.

(542) The tidal **currents** in Fraser River are affected by the weather in the Strait of Georgia, the rains and the amount of water in the river. In the channel above Pelly Point during freshets, the flow, which may be checked by the rise of the tide, is almost continuously toward the mouth of the river. During the freshets the greatest velocity occurs 2 to 3 hours before low water and may amount to 5.5 knots. After the freshets are over, the greater velocity occurs on the average about 1½ hours before low water and is reduced to 3 or 4 knots. During the low stage of the river there is a flood and ebb on all the larger tides; the flood begins soon after high water and commences first along the bottom.

(543) At New Westminster the flood current is unable to reverse the river current except in the autumn. The river is seldom frozen over here; loose pieces of ice, which do no damage to shipping, occasionally come down the river.

(544) **New Westminster** is on the north bank about 20 miles above the entrance. Several canneries and sawmills are here, and a conspicuous grain elevator stands about 1 mile below the city, which now has grown into the expanded Vancouver suburbs. New Westminster Harbor is a major Canadian port. The port is mainly used by bulkcarriers and cargo vessels. The principal exports are lumber, plywood, general cargo, concentrates, wheat, zinc, lead, fertilizer, paper products and salmon. There are many wharves; most of them have warehouses and rail connections. Depths alongside range from 25 to 35 feet.

(545) New Westminster is a **Canadian customs port of entry**.

(546) **North Arm** of Fraser River is entered 0.5 mile southwest of Point Grey. Depths of 15 feet are maintained from the mouth to the northeast extremity of Sea Island and 10 feet from this point to Poplar Island. From Poplar Island (49°12'N., 122°56'W.), to the main river channel the depth is again 15 feet.

(547) **Point Grey**, the south entrance point of **Burrard Inlet**, is a rounded bluff forming the west termination of a wooded promontory. The point is very conspicuous from south. The buildings of the University of British Columbia are conspicuous on the high land above the point. **Point Atkinson**, the north entrance point of Burrard Inlet, is comparatively steep-to. It is marked by a light.

(548) Tide rips occur frequently off Point Atkinson, caused by the meeting of the tidal currents from Burrard Inlet and Howe Sound.

(549) **Spanish Bank** extends 0.6 mile north from the west half of the promontory terminating in Point Grey. The bank, which dries and is marked by lights, is composed of hard sand and is steep-to. West winds when it is marked by a line of small breakers.

(550) **Vancouver Harbor** includes all the tidal waters in Burrard Inlet east of a line drawn from Point Grey to Point Atkinson. A secure, deep harbor, easily entered by the largest vessel, is formed between First and Second Narrows, and on its shores is the city of Vancouver, the third largest city of Canada and the commercial metropolis of British Columbia. A U.S. Immigration station is in the city. Vancouver is a **Canadian customs port of entry**. Complete marine supplies, repair facilities, and services for small craft and the largest ships are available.

(551) The three principal anchorages in Vancouver Harbor are English Bay, the outer anchorage; Vancouver, above the first narrows; and in Indian Arm.

(552)

Belle Chain Islets

(553) The coast between East Point and Active Pass should be given a berth of at least 2 miles because it is fringed with dangers.

(554) **Belle Chain Islets** is a narrow rocky ridge 2 miles long lying parallel with several islets and drying rocks along the northeast shore of **Samuel Island**. Foul ground extends about 0.3 mile southeast from **Edith Point**, the northeast extremity of **Mayne Island**. A rocky patch with two heads, each of which covers 4 feet, is about midway between Edith Point and the northwest end of Belle Chain Islets.

(555)

Salamanca Point to Ballenas Islands

(556) **Salamanca Point**, on the southeast side of **Galiano Island**, is conspicuous from both southeast and northwest. The point is rocky, and the trees on it grow down nearly to the highwater mark.

(557) **Porlier Pass**, 12 miles northwest of Salamanca Point, separates Galiano Island and **Valdes Island** and connects **Trincomali Channel** with the Strait of Georgia. The pass has a minimum width of about 800 yards, but the navigable channel is narrow and the tidal currents attain velocities up to 9 knots.See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book. It is advisable to employ a pilot on the first visit to this pass.

(558) **Gabriola Pass** is between the northwest end of Valdes Island and Gabriola Island, connecting the northwest end of **Pylades Channel** to the Strait of Georgia. This pass is not recommended for general navigation, but only for those with local knowledge. The velocity of the current in the pass is 4.0 knots, setting east on the flood and west on the ebb. The current may attain a velocity of 8 knots. See the Tidal Current prediction service at *tidesandcurrents.*

noaa.gov for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(559) The outermost danger off Gabriola Pass, **Thrasher Rock**, a detached steep-to rock that dries, is 2.3 miles northeast of the pass entrance. A light is on the rock. Shoreward of it are many rocks and reefs, including **Gabriola Reefs**; caution is essential.

(560) **Entrance Island**, 0.4 mile north of Orlebar Point, the northeast point of Gabriola Island, is marked by a light. It is the guide to the entrance to **Nanaimo**, a Canadian port of entry. **Fairway Channel**, the easternmost of the channels in the north approach to Nanaimo, is deep and has a navigable width of 0.8 mile.

(561) Off the entrance to **Nanoose Harbor**, 13 miles west-northwest of Entrance Island, there are many islets and reefs and, unless making for Nanoose, the navigator should keep 3 miles offshore until he raises the **Ballenas Islands** 5.5 miles northwest of the Nanoose Harbor entrance.