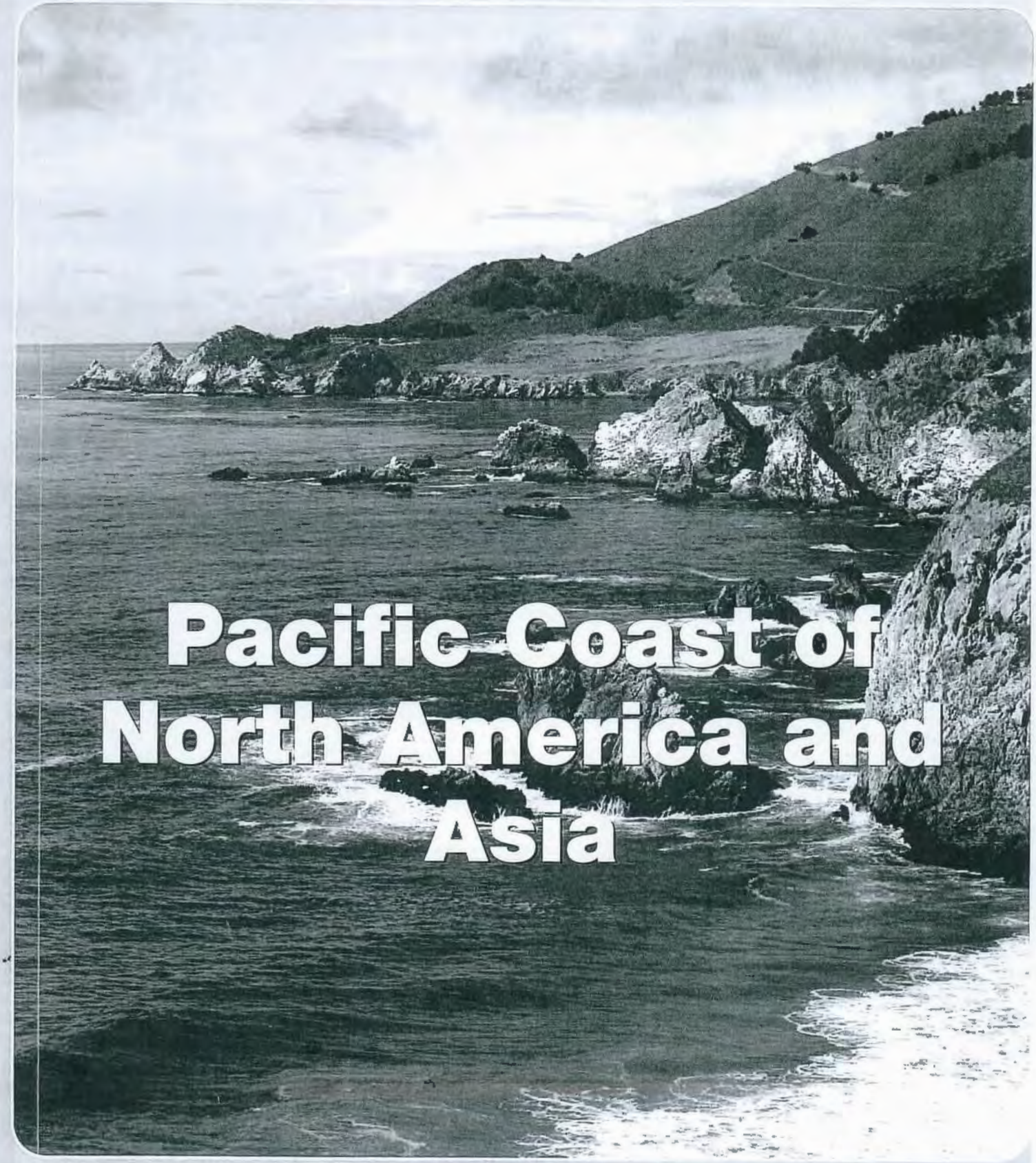
2016 Current Tables

OREGON, WASHINGTON AND BRITISH COLUMBIA



Approved by the U.S. Coast Guard

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IMPORTANT NOTICES

PUBLISHED CAUTIONARY NOTICES

Published in Local Notice to Mariners and United States Coast Pilot Notices

UPDATE TO THE 2012 EDITION OF THE NOS TIDAL CURRENT TABLES

The NOAA National Ocean Service's Center for Operational Oceanographic Products and Services (CO-OPS) is updating the tidal current predictions published for the Dutch Harbor region of Alaska within the 2012 Tidal Current Tables - Pacific Coast of North America and Asia. Reference stations in this area have been updated with new data; historic secondary stations have been updated; and a number of new stations have been added.

(Issued: October 1, 2011)

THE NARROWS, PUGET SOUND, WASHINGTON

Tidal current speeds at The Narrows, Puget Sound, Washington have been reported by the U.S. Coast Guard and other reliable sources as being significantly higher than predicted. Until such time as new tidal current data can be collected to update predictions at this location, extreme caution should be used while navigating the area.

(Issued October 1, 2008)

CHANGES TO 2004 AND FUTURE EDITIONS OF THE NOS TIDE TABLES

The National Ocean Service's, Center for Operational Oceanographic Products and Services (CO-OPS) is continuing to work on updating tidal data for the 1983-2001 Tidal Epoch. The updated information will begin to appear in the 2004 edition of the published Tide Tables and is expected to be completed for the 2005 Tide Tables. In conjunction with the 1983-2001 Tidal Epoch update, CO-OPS has started a comprehensive review of the secondary stations listed in the published Tide Tables. As a result of this review, there will be numerous changes to the stations listed in the "Table 2 - Tidal Differences and Other Constants" pages of the published Tide Tables and in the CO-OPS web products. These changes will include the addition of new stations, removal of obsolete stations, and updating information for other existing stations. These changes will begin to appear in the 2004 edition of the published Tide Tables and are expected to continue for several years.

Tables in which U.S. stations will be affected by the 1983-2001 Epoch and Table 2 station review include:

- Tide Tables - East Coast of North and South America, Including Greenland
- Tide Tables - West Coast of North and South America, Including the Hawaii Islands
- Tide Tables - Central and Western Pacific Ocean and Indian Ocean

(Issued October 1, 2003)

TIDAL CURRENT PREDICTIONS INSIDE U.S. ESTUARIES

At present there are several U.S. estuaries with operational Physical Oceanographic Real Time Systems (PORTS) installed. PORTS systems are presently being installed in several additional estuaries. Over the next ten years there are projected to be twenty or more additional systems installed. In the past, the tidal current reference station has always been located at the entrance to each estuary. All tidal current secondary stations both inside and outside (along the coast) have been referred to the reference station at the entrance to the estuary. This will no longer be the case in estuaries with an operational PORTS system.

IMPORTANT NOTICES

Estuaries with an operational PORTS system will have at least two reference stations. One will be the historic station at the entrance to the estuary. All secondary stations along the coast will continue to be referred to this station. The second tidal current reference station will be the primary PORTS station within the estuary. All secondary locations within the estuary itself will be referred to this location. Depending on the circulation dynamics of the estuary, daily tidal current predictions may be provided for one or more additional stations within the estuary.

(Issued October 1, 1999)

KUSKOKWIM BAY AND RIVER, ALASKA

The National Ocean Service's (NOS) official published time and height corrections for this area (Table 2 in the Tide Tables West Coast of North and South America) in recent years have been based on the daily predictions for Nushagak Bay, AK, the nearest NOS reference station. These published values, however, do not provide the most accurate corrections. The shape of the tide curves varies considerably along the Alaskan coast. The previously published corrections based on Matarani, Peru, provide more accurate results for this area because the shape of the tide curves closely match. The corrections based on Matarani are:

Location Name	Position		Differences			
	Lat. N ° '	Long. W ° '	Time High h. m.	Time Low h. m.	Height High ft.	Height Low ft.
Goodnews Bay entrance	59 03	161 49	+0 59	+0 51	*2.83	*2.00
Carter Spit	59 19	161 57	+1 19	+1 24	*3.63	*2.33
Eek Channel, off Quinhagak	59 45	162 15	+2 39	+3 05	*4.25	*1.67
Warehouse Creek entrance	59 56	162 05	+3 05	+3 50	*4.38	*1.67
Kuskokwak Creek entrance	60 02	162 10	+3 53	+4 40	*4.21	*1.67
Popokamute	60 04	162 25	+4 12	+5 05	*3.67	*1.67
Apokak Creek entrance	60 08	162 10	+4 13	+5 10	*4.13	*1.67
Bethel	60 48	161 45	+8 51	+11 11	+0.3	+0.1

(Issued May 30, 1997)

CHIGNIK, ALASKA

The US Army Corps of Engineers (USACOE) is planning the construction of a Small Boat Harbor in Chignik, AK. The construction will include dredging and the construction of a breakwater. Official published Tide and Tidal Current predictions will be degraded once the project begins. Tidal Currents will be effected the most. From the beginning of the project until a resurvey of the area can be completed, Tide and Tidal Current predictions should be used with caution. Tidal Current predictions should be used only with extreme caution. Therefore, until such time as a resurvey of the area is conducted, the National Oceanic and Atmospheric Administration, National Ocean Service will be unable to provide the accurate Tide and Tidal Current predictions necessary for marine safety and navigation in this area.

(Issued May 30, 1997)

NEPTUNE BEACH, WASHINGTON

Pudget Sound Pilots report that observed tidal currents in the vicinity of Neptune Beach, WA deviate significantly from official published predictions. Reliable sources report that the observed velocities are close to double the predicted values and that the times are up to 1 hour earlier than predicted. Extreme caution should be exercised in this vicinity by all vessels especially tankers passing through the area approaching oil refineries. Funding for a resurvey of the area and/or the installation of a real-time monitoring system is not presently available. Therefore, until such time as real-time system is installed or a resurvey of the area conducted, the National Oceanic and Atmospheric Administration, National

IMPORTANT NOTICES

Ocean Service will be unable to provide the accurate Tidal Current predictions necessary for marine safety and navigation in this area.

(Issued May 30, 1997)

GRAYS HARBOR, WASHINGTON

Tidal Currents in Grays Harbor have been significantly altered by dredging and construction activities. Tidal predictions for the Tidal Reference Station at Aberdeen have been updated to reflect these changes. Tidal Current predictions for this area should be considered questionable and potentially dangerous to rely upon. Funding for a real-time system to monitor the Tidal Currents or a resurvey of this area is not available at this time. Therefore, until such time as a real-time system is installed or a resurvey of the area conducted, the National Oceanic and Atmospheric Administration, National Ocean Service will be unable to provide accurate Tidal Current predictions necessary for marine safety and navigation in this area.

(Issued June 5, 1996)

SAN DIEGO, CALIFORNIA

The US Army Corps of Engineers (COE) is planning a dredging project for the US Navy in the area of the North Island Naval Base in San Diego Harbor. This project calls for both deepening and widening the channel to accommodate larger naval vessels. Such actions in the past in other areas have resulted in dramatic changes in the observed Tidal Currents of those areas. Once dredging operations commence, the Tidal Current predictions for this region should be considered questionable and potentially dangerous to rely upon. Tidal predictions will also be affected but to a lesser degree. Funding for a real-time system to monitor the Tidal Currents during the project and a resurvey of the area after COE operations are complete are presently not available. Therefore, once COE operations begin and until such time as a real-time system is installed or a resurvey of the area conducted, the National Oceanic and Atmospheric Administration, National Ocean Service will be unable to provide accurate Tidal Current predictions necessary for marine safety and navigation in this area.

(Issued June 5, 1996)

INTRODUCTION

Current tables for the use of mariners have been published by the National Ocean Service (formerly the Coast and Geodetic Survey) since 1890. Tables for the Pacific coast first appeared in 1898 as a part of the tide tables and consisted of brief directions for obtaining the times of slack water for a few locations from the times of high and low waters. Daily predictions of slack water for two stations were given for the year 1899, and by 1923 the tables had so expanded that they were then issued as a separate publication entitled *Current Tables, Pacific Coast.* A companion volume, *Current Tables, Atlantic Coast*, was also issued that year. In 1926 the predictions for the Pacific coast were extended to include the times and speeds of maximum current.

In the preparation of these tables all available observations were used. In some cases, however, the observations were insufficient for obtaining final results. As further information becomes available it will be included in subsequent editions. All persons using these tables are invited to send information or suggestions for increasing their usefulness to the Assistant Administrator, National Ocean Service, 1305 East-West Highway, Silver Spring, Maryland 20910, U.S.A. The data for lightship stations are based on observations obtained through the cooperation of the U.S. Coast Guard. In accordance with cooperative arrangements full predictions for Race Rocks, Seymour Narrows, Burrard Inlet, and Active Pass were furnished by the Canadian Hydrographic Service. The Bureau of Coast and Geodetic Survey, Philippines, supplies the predictions for Iloilo, San Juanico and San Bernardino Straits, and Cebu Harbor. The Japanese Hydrographic Office furnished the predictions for Tokyo Wan entrance, Akashi Kaikyo, Naruto, Kurushima Kaikyo, Kanmon Kaikyo, and Tomogashima Suido. The Hydrographic Department, England furnished Basilan Strait.

Daily predicted times of slack water and predicted times and speeds of maximum current (flood and ebb) are presented in Table 1 for a number of reference stations. Similar predictions for many other locations may be obtained by applying the correction factors, listed in Table 2, to the predictions of the appropriate reference station. The speed of a current at times between slack water and maximum current may be approximated by the use of Table 3. The duration of weak current near the time of slack water may be computed by the use of Table 4.

LIST OF REFERENCE STATIONS

Station Names	*Page*	*Updated*	*Data Series*
Active Pass, British Columbia	72		
Admiralty Inlet, Washington	52	1948	123 days (12/11/1908 - 3/19/1943)
Akashi Kaikyo, Japan	166		
Akutan Pass, Aleutian Islands	138	2012	3 months (6/2 - 9/11/2010)
Basilan Strait, Philippines	186		
Benecia Bridge, Suisan Bay, California	32	2001	8 months (1/2/1996 - 9/3/1996)
Boca de Finas, Alaska	88	2009	1month (8/5/2006 - 9/11/2006)
Burrard Inlet (First Narrows), British Columbia	76		
Carquinez Strait, California	28	1989	224 days (4/3/1980 - 11/12/1980)
Cebu Harbor, Philippines**	194		
Changjiang Entrance, China	178		
Deception Pass, Washington	60	1933	29 days (9/9/1925 - 10/27/1925)
Golden Gate Bridge, California	12	2001	7 months (11/1/1997 - 5/31/1998)
Grays Harbor Entrance, Washington	40	1952	29 days beginning 3/25/1950
Humboldt Bay Entrance Channel, California	36	2006	2 months (7/21/2004-10/15/2004)
Iloilo Strait, Philippines**	190		
Isanotski Strait (False Pass Cannery), Alaska	128	1985	Form C&GS-444 (8/18/1925)
Kahuku Point, Kauai Island, Hawaii	150	2013	2 months (2/3/2011 - 4/1/2011)
Kalohi Channel, Molokai Island, Hawaii	146	2013	2 months (1/8/2011- 3/26/2011)
Kanmon Kaikyo, Japan	174		
Kennedy Entrance, Cook Inlet, Alaska	108	2007	1 month (6/22/2004 - 8/3/2004)
Knik Arm, Port of Anchorage, Alaska	120	2007	1 month (7/16/2003 - 8/20/2003)
Kodiak Harbor Narrows, Alaska	124	2011	3 months (5/29/2009 - 8/20/2009)
Kurushima Kaikyo, Japan	170		
Kvichak Bay (off Naknek River Entrance), Alaska	142	1985	14 days beginning 9/16/1946
Montague Strait, Prince William Sound, Alaska	104	2010	3 months (5/4/2007 - 8/5/2007)
Naruto, Japan	162		
North Inian Pass, Alaska	100	1985	104 days (1901)
Oakland, Yerba Buena Island, California	16	2001	1 year (1999)
Race Rocks, British Columbia	48		
Richmond (Long Wharf), California	24	2001	1 year (1999)
Rosario Strait, Washington	64	1967	29 days beginning 3/10/1965
San Bernardino Strait, Philippines**	202		
San Diego Bay Entrance, California	4	1936	29 days beginning 8/24/1934
San Francisco Bay Entrance, California	8	1990	7 days beginning 10/19/1923
San Juan Channel (south entrance), Washington	68	1966	29 days beginning 5/21/1964
San Juanico Strait, Philippines**	198		
San Mateo Bridge, California	20	2014	4 months (5/19/2013 - 9/9/2013)
Sergius Narrows, Alaska	96	2004	1 month (4/2/2002 - 5/7/2002)
Seymour Narrows, British Columbia	80		
Snow Passage Narrows, Alaska	84	2006	1 month (4/23/2004 - 5/22/2004)
Strait of Juan de Fuca Entrance	44	1945	Inferred from Admiralty Inlet station
Tesoro Pier, Cook Inlet, Alaska	112	2010	2 months (7/15/2008 - 9/17/2008)
The Forelands, Cook Inlet, Alaska	116	2007	2 months (5/18/2005 - 7/18/2005)
The Narrows, Puget Sound, Washington	56	1948	28 days beginning 1/19/1944
Tokyo Wan Entrance, Japan	154		
Tomogashima Suido, Japan	158		
Unimak Pass, Aleutian Islands	133*,134	2012	3 months (6/11 - 9/11/2010)
Wrangell Narrows, Alaska	92	2004	1 month (5/17/2002 - 6/19/2002)
Wusong Kou, China	182		

* Explanation precedes the predictions.

** Daily predictions for this station were omitted.

*** New reference station.

TABLE 1.— DAILY CURRENT PREDICTIONS

EXPLANATION OF TABLE

This table gives the predicted times of slack water and the predicted times and speeds of maximum current-flood and ebb-for each day of the year at a number of stations on the Pacific coast of North America. The times are given in hours and minutes and the speeds in knots.

Time.—The kind of time used for the predictions at each reference station is indicated by the time meridian at the bottom of each page. **Daylight-saving time is not used in this publication**. If daylight-saving time is required, add one (1) hour to the predicted time.

Slack water and maximum current.—The columns headed "Slack" contain the predicted times at which there is no current; or, in other words, the times at which the current has stopped setting in a given direction and is about to begin to set in the opposite direction. Offshore, where the current is rotary, slack water denotes the time of minimum current. Beginning with the slack water before flood the current increases in speed until the strength or maximum speed of the flood current is reached; it then decreases until the following slack water or slack before ebb. The ebb current now begins, increases to a maximum speed, and then decreases to the next slack. The predicted times and speeds of maximum current are given in the columns headed "Maximum." Flood speeds are marked with an "F," the ebb speeds with an "E." An entry in the "Slack" column will be slack, flood begins if the maximum current which follows it is marked "F." Otherwise the entry will be slack, ebb begins.

Direction of set.—The terms flood and ebb do not in all cases clearly indicate the direction of the current, the approximate direction toward which the currents flow are given at the top of each page to distinguish the two streams.

Number of slacks and strengths.—There are usually four slacks and four maximums each day. If one is missing in a given day, it will occur soon after midnight as the first slack or maximum of the following day. At some stations where the diurnal inequality is large, there may be on certain days a continuous flood or ebb current with varying speed throughout half the day giving only two slacks and two maximums on that particular day.

Current and tide.—It is important to note that the predicted slacks and strengths given in this table refer to the horizontal motion of the water and not to the vertical rise and fall of the tide. The relation of current to tide is not constant, but varies from place to place, and the time of slack water does not generally coincide with the time of high or low water, nor does the time of maximum speed of the current usually coincide with the time of most rapid change in the vertical height of the tide. At stations located on a tidal river or bay the time of slack water may differ from 1 to 3 hours from the time of high or low water. The times of high and low waters are given in theTide Tables published by the National Ocean Service.

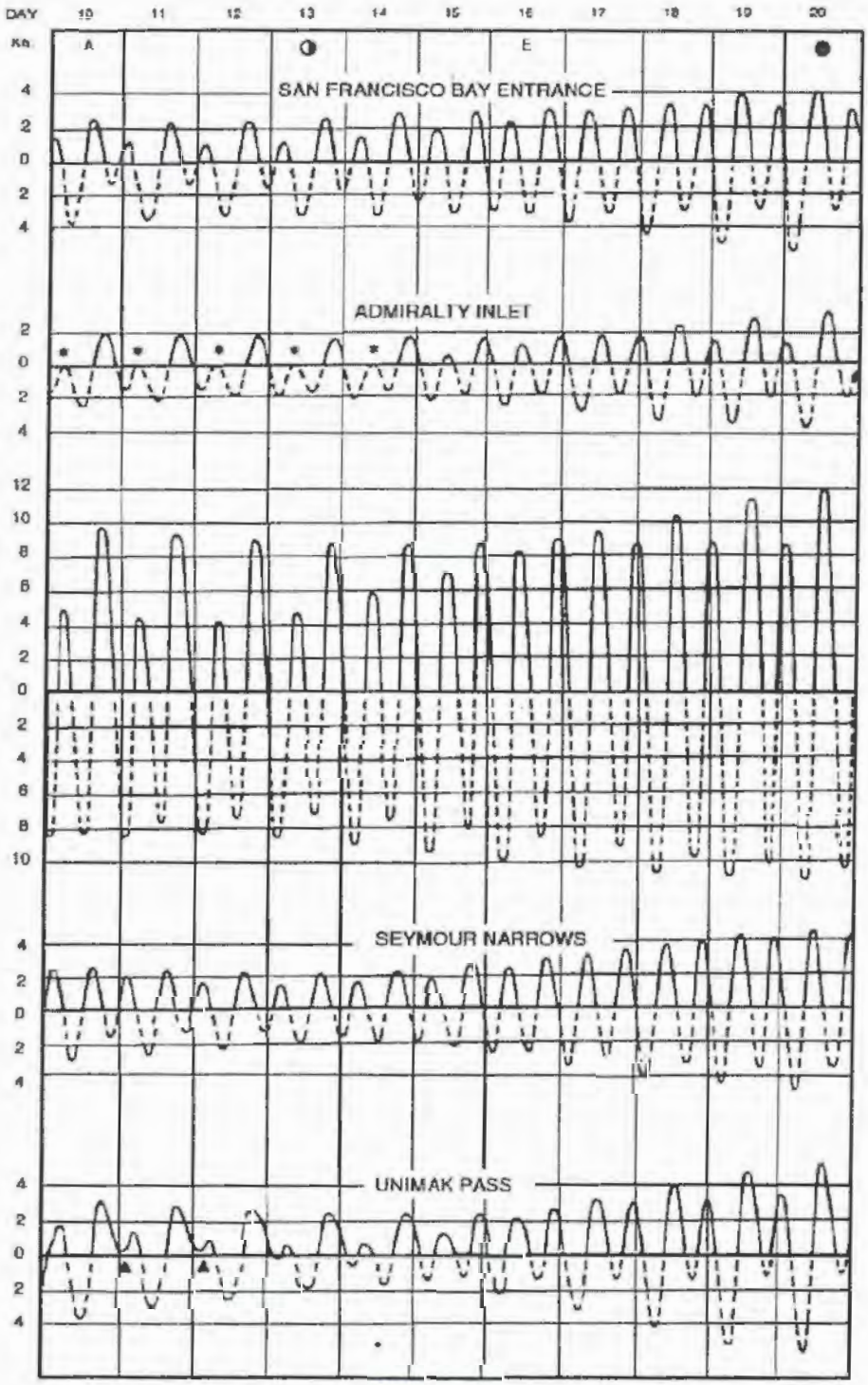
Variations from predictions.—In using this table, bear in mind that actual times of slack or maximum occasionally differ from the predicted times by as much as half an hour and in rare instances the difference may be as much as an hour. Comparisons of predicted with observed times of slack water indicate that more than 90 percent of the slack waters occurred within half an hour of the predicted times. To make sure, therefore, of getting the full advantage of a favorable current or slack water, the navigator should reach the entrance or strait at least half an hour before the predicted time of the desired condition of current. Currents are frequently disturbed by wind or variations in river discharge. On days when the current is affected by such disturbing influences the times and speeds will differ from those given in the table, but local knowledge will enable one to make proper allowance for these effects.

TABLE 1.—DAILY CURRENT PREDICTIONS

Typical current curves.—The variations in the tidal current from day to day and from place to place are illustrated on the opposite page by the current curves for representative ports. Flood current is represented by the solid line curve above the zero speed (slack water) line and the ebb current by the broken line curve below the slack water line. The outstanding feature of the currents in this region is the diurnal inequality, i.e., the differences in speed of two consecutive flood or two consecutive ebb maximums. This inequality varies directly with the Moon's declination; consequently it tends to disappear when the Moon is near the Equator. By reference to the curves it will be noted that at certain places the inequality is chiefly in the flood currents. At Seymour Narrows the two floods of a day sometimes differ by 5 knots. At other places the inequality is chiefly in the ebb currents, while at still other places there is a marked inequality in both flood and ebb currents. The effect of the inequality at some places is such that there are times when the current may be erratic (marked by an asterisk) or one flood or ebb current of the day may be quite weak. Therefore, in using the predictions of the current it is essential to carefully note the speeds as well as the times. A detailed explanation of the predictions for Unimak Pass is given on the page immediately preceding the predictions.

TYPICAL CURRENT CURVES FOR REFERENCE STATIONS

(Flood: Solid Line, Ebb: Broken Line)



◆ Current weak and variable
▲ Minimum flood. *See explanation on page 93*
A discussion of these curves is given on the preceding page.

Lunar data: A – Moon in apogee
◑ – last quarter
E – Moon on Equator
● – new moon

Grays Harbor Entrance, Washington, 2016

F–Flood, Dir. 060° True E–Ebb, Dir. 240° True

January

	Slack h m	Maximum h m	Maximum knots
1 F ◑	0614 1246 1801	0238 0937 1456 2127	1.7F 2.1E 0.8F 2.0E
2 Sa	0027 0701 1356 1910	0323 1034 1704 2234	1.6F 2.2E 0.7F 1.7E
3 Su	0118 0750 1505 2023	0416 1131 1833 2341	1.4F 2.3E 0.8F 1.5E
4 M	0213 0839 1604 2133	0517 1225 1932	1.3F 2.6E 1.1F
5 Tu	0310 0927 1651 2235	0043 0619 1315 2021	1.5E 1.4F 2.9E 1.4F
6 W	0404 1013 1733 2329	0138 0711 1402 2104	1.6E 1.5F 3.2E 1.8F
7 Th	0455 1057 1811	0228 0755 1445 2141	1.8E 1.6F 3.5E 2.0F
8 F	0017 0542 1139 1848	0313 0835 1525 2211	1.9E 1.8F 3.7E 2.3F
9 Sa ●	0100 0627 1220 1925	0355 0915 1603 2236	2.1E 2.0F 3.9E 2.5F
10 Su	0141 0712 1302 2003	0436 0956 1640 2305	2.3E 2.1F 4.1E 2.7F
11 M	0221 0757 1345 2041	0516 1039 1719 2338	2.5E 2.2F 4.1E 2.8F
12 Tu	0302 0845 1430 2122	0557 1123 1759	2.7E 2.2F 4.0E
13 W	0344 0937 1518 2204	0016 0641 1211 1843	2.9F 2.8E 2.2F 3.7E
14 Th	0428 1033 1612 2250	0057 0730 1304 1932	2.8F 2.9E 2.0F 3.3E
15 F	0516 1135 1713 2339	0143 0826 1403 2028	2.7F 2.9E 1.7F 2.9E
16 Sa ◐	0606 1244 1823	0233 0928 1515 2135	2.4F 3.0E 1.5F 2.4E
17 Su	0033 0701 1359 1940	0331 1035 1701 2252	2.2F 3.0E 1.4F 2.0E
18 M	0133 0759 1515 2059	0440 1141 1840	1.9F 3.2E 1.6F
19 Tu	0239 0858 1623 2213	0006 0605 1243 1947	1.9E 1.8F 3.4E 1.9F
20 W	0346 0955 1721 2317	0112 0725 1340 2043	1.9E 1.9F 3.7E 2.3F
21 Th	0450 1049 1811	0210 0825 1433 2133	2.0E 2.0F 3.9E 2.5F
22 F	0012 0546 1139 1854	0303 0916 1521 2218	2.2E 2.0F 4.0E 2.7F
23 Sa ○	0058 0636 1226 1933	0351 0959 1605 2259	2.4E 2.1F 4.0E 2.7F
24 Su	0139 0721 1309 2008	0436 1036 1647 2335	2.5E 2.0F 3.9E 2.7F
25 M	0217 0804 1350 2041	0518 1106 1726	2.6E 2.0F 3.7E
26 Tu	0253 0845 1429 2113	0004 0558 1134 1802	2.5F 2.6E 1.8F 3.5E
27 W	0329 0927 1508 2146	0025 0636 1205 1836	2.4F 2.6E 1.7F 3.1E
28 Th	0405 1011 1548 2221	0044 0715 1240 1909	2.2F 2.5E 1.5F 2.8E
29 F	0442 1059 1631 2258	0110 0754 1319 1945	2.1F 2.4E 1.3F 2.4E
30 Sa	0521 1152 1721 2340	0142 0837 1405 2027	1.9F 2.4E 1.1F 2.0E
31 Su ◑	0603 1252 1823	0220 0929 1501 2121	1.7F 2.3E 0.9F 1.7E

February

	Slack h m	Maximum h m	Maximum knots
1 M	0028 0650 1358 1936	0305 1030 1615 2238	1.5F 2.3E 0.8F 1.4E
2 Tu	0123 0743 1506 2051	0400 1134 1848 2358	1.3F 2.4E 0.9F 1.3E
3 W	0224 0838 1606 2200	0505 1234 1947	1.2F 2.7E 1.3F
4 Th	0327 0934 1657 2258	0103 0616 1328 2034	1.4E 1.3F 3.0E 1.6F
5 F	0426 1027 1741 2348	0159 0721 1416 2113	1.7E 1.5F 3.3E 2.0F
6 Sa	0520 1116 1822	0247 0815 1501 2145	2.0E 1.8F 3.7E 2.3F
7 Su	0032 0609 1204 1901	0332 0903 1543 2214	2.3E 2.1F 3.9E 2.6F
8 M ●	0113 0657 1251 1940	0415 0948 1624 2244	2.7E 2.3F 4.1E 2.9F
9 Tu	0153 0744 1338 2019	0456 1032 1705 2318	3.0E 2.5F 4.1E 3.0F
10 W	0234 0833 1426 2100	0538 1118 1747 2355	3.3E 2.6F 4.0E 3.1F
11 Th	0315 0923 1515 2142	0622 1206 1831	3.4E 2.5F 3.7E
12 F	0357 1017 1608 2226	0035 0709 1257 1919	3.0F 3.5E 2.3F 3.3E
13 Sa	0443 1115 1707 2314	0118 0801 1353 2014	2.7F 3.4E 2.0F 2.8E
14 Su ◐	0533 1220 1812	0206 0900 1502 2119	2.4F 3.3E 1.7F 2.2E
15 M	0008 0628 1334 1926	0302 1007 1652 2234	2.0F 3.1E 1.5F 1.9E
16 Tu	0111 0729 1452 2044	0413 1115 1824 2348	1.7F 3.1E 1.6F 1.7E
17 W	0223 0833 1606 2158	0603 1221 1931	1.5F 3.1E 1.9F
18 Th	0339 0936 1707 2301	0055 0725 1322 2027	1.8E 1.6F 3.3E 2.1F
19 F	0447 1035 1756 2352	0155 0824 1415 2115	2.0E 1.8F 3.4E 2.4F
20 Sa	0544 1127 1836	0247 0913 1504 2159	2.2E 1.9F 3.6E 2.5F
21 Su	0034 0631 1214 1911	0333 0956 1547 2237	2.5E 2.0F 3.6E 2.6F
22 M ○	0111 0711 1256 1943	0415 1033 1627 2309	2.7E 2.1F 3.5E 2.5F
23 Tu	0145 0749 1335 2012	0453 1101 1704 2332	2.8E 2.0F 3.4E 2.4F
24 W	0218 0825 1413 2042	0530 1121 1738 2345	2.9E 2.0F 3.2E 2.3F
25 Th	0250 0902 1451 2112	0604 1145 1809	2.9E 1.9F 3.0E
26 F	0322 0940 1528 2145	0002 0635 1214 1838	2.2F 2.8E 1.8F 2.7E
27 Sa	0354 1022 1609 2221	0027 0706 1249 1909	2.1F 2.8E 1.6F 2.4E
28 Su	0427 1108 1654 2301	0058 0741 1329 1948	1.9F 2.6E 1.5F 2.0E
29 M	0503 1200 1750 2348	0134 0823 1417 2035	1.7F 2.5E 1.2F 1.7E

March

	Slack h m	Maximum h m	Maximum knots
1 Tu ◑	0546 1300 1858	0216 0917 1516 2138	1.5F 2.4E 1.1F 1.4E
2 W	0043 0641 1406 2012	0309 1028 1635 2311	1.3F 2.4E 1.0F 1.3E
3 Th	0148 0748 1513 2122	0415 1145 1857	1.1F 2.5E 1.2F
4 F	0257 0856 1613 2222	0029 0534 1250 1953	1.4E 1.2F 2.8E 1.6F
5 Sa	0403 0959 1704 2313	0129 0654 1345 2034	1.8E 1.4F 3.1E 2.0F
6 Su	0502 1056 1749 2358	0220 0800 1435 2109	2.2E 1.6F 3.5E 2.4F
7 M	0554 1150 1831	0306 0853 1521 2142	2.7E 2.2F 3.8E 2.7F
8 Tu ●	0040 0643 1240 1912	0350 0940 1605 2216	3.2E 2.6F 4.0E 3.0F
9 W	0121 0731 1330 1953	0433 1026 1649 2252	3.6E 2.8F 4.0E 3.1F
10 Th	0201 0819 1419 2035	0516 1112 1733 2330	3.9E 2.9F 3.8E 3.1F
11 F	0243 0908 1510 2118	0600 1159 1818	4.0E 2.8F 3.5E
12 Sa	0326 1000 1603 2204	0011 0646 1249 1907	2.9F 3.9E 2.6F 3.1E
13 Su	0411 1055 1659 2253	0054 0737 1344 2002	2.6F 3.7E 2.3F 2.6E
14 M	0501 1156 1802 2349	0141 0834 1453 2106	2.2F 3.4E 1.9F 2.1E
15 Tu ◐	0556 1306 1911	0237 0939 1637 2218	1.8F 3.1E 1.6F 1.8E
16 W	0056 0700 1422 2025	0354 1049 1802 2330	1.4F 2.9E 1.7F 1.7E
17 Th	0216 0809 1537 2135	0602 1157 1907	1.2F 2.8E 1.8F
18 F	0339 0917 1639 2234	0036 0715 1258 2002	1.8E 1.4F 2.9E 2.0F
19 Sa	0448 1019 1728 2321	0134 0812 1353 2050	2.1E 1.6F 3.0E 2.2F
20 Su	0540 1113 1807	0225 0901 1441 2131	2.4E 1.8F 3.1E 2.3F
21 M	0622 1159 1840	0309 0944 1524 2208	2.7E 2.0F 3.1E 2.3F
22 Tu	0658 1241 1910	0349 1020 1604 2237	2.9E 2.1F 3.1E 2.3F
23 W ○	0732 1320 1939	0426 1049 1640 2253	3.1E 2.1F 3.0E 2.2F
24 Th	0804 1358 2009	0500 1108 1714 2303	3.2E 2.1F 2.9E 2.2F
25 F	0837 1435 2040	0531 1126 1744 2323	3.2E 2.0F 2.7E 2.1F
26 Sa	0913 1513 2113	0559 1153 1812 2349	3.1E 2.0F 2.5E 2.0F
27 Su	0951 1553 2149	0627 1225 1843	3.1E 1.9F 2.2E
28 M	0337 1033 1637 2230	0020 0659 1302 1920	1.9F 2.9E 1.8F 2.0E
29 Tu	0409 1120 1729 2317	0057 0740 1347 2007	1.7F 2.8E 1.6F 1.7E
30 W	0448 1215 1831	0140 0829 1441 2107	1.5F 2.6E 1.4F 1.5E
31 Th ◑	0014 0544 1317 1938	0233 0931 1548 2233	1.2F 2.5E 1.3F 1.4E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Grays Harbor Entrance, Washington, 2016

F–Flood, Dir. 060° True E–Ebb, Dir. 240° True

April

	Slack	Maximum	
	h m	h m	knots
1 F	0122	0341	1.1F
	0701	1052	2.5E
	1422	1713	1.4F
	2044	2355	1.7E
2 Sa	0236	0503	1.1F
	0822	1210	2.6E
	1524	1845	1.7F
	2143		
3 Su		0057	2.1E
	0345	0632	1.4F
	0934	1312	2.9E
	1621	1942	2.0F
	2234		
4 M		0151	2.6E
	0445	0746	1.8F
	1037	1407	3.2E
	1711	2025	2.4F
	2320		
5 Tu		0239	3.2E
	0539	0843	2.3F
	1135	1457	3.5E
	1757	2105	2.7F
6 W	0004	0324	3.7E
	0628	0932	2.7F
	1229	1544	3.6E
	1842	2144	2.9F
7 Th ●	0047	0409	4.1E
	0716	1019	3.0F
	1320	1631	3.6E
	1926	2224	3.0F
8 F	0129	0453	4.4E
	0804	1105	3.1F
	1411	1717	3.5E
	2010	2305	3.0F
9 Sa	0211	0538	4.4E
	0853	1153	3.0F
	1502	1805	3.2E
	2055	2347	2.7F
10 Su	0255	0624	4.2E
	0943	1243	2.8F
	1555	1855	2.8E
	2143		
11 M		0031	2.4F
	0341	0714	3.9E
	1035	1338	2.5F
	1650	1950	2.4E
	2235		
12 Tu		0119	2.0F
	0431	0810	3.5E
	1132	1447	2.1F
	1750	2053	2.1E
	2334		
13 W ◐		0216	1.5F
	0527	0912	3.1E
	1235	1615	1.8F
	1853	2200	1.8E
14 Th	0046	0343	1.1F
	0631	1020	2.7F
	1344	1732	1.7F
	2000	2308	1.8E
15 F	0211	0546	1.1F
	0741	1127	2.5E
	1453	1835	1.8F
	2102		
16 Sa		0011	2.0E
	0335	0656	1.2F
	0852	1228	2.5E
	1554	1929	1.9F
	2156		
17 Su		0107	2.3E
	0439	0752	1.5F
	0956	1323	2.5E
	1644	2016	2.0F
	2241		
18 M		0156	2.6E
	0528	0841	1.7F
	1052	1412	2.6E
	1725	2057	2.1F
	2320		
19 Tu		0240	2.9E
	0606	0924	1.9F
	1141	1456	2.6E
	1800	2132	2.1F
	2355		
20 W		0320	3.1E
	0640	1002	2.0F
	1224	1537	2.6E
	1832	2158	2.1F
21 Th ○	0028	0357	3.3E
	0712	1034	2.1F
	1304	1615	2.6E
	1903	2210	2.0F
22 F	0100	0430	3.4F
	0743	1055	2.1F
	1343	1650	2.5E
	1935	2224	2.0F
23 Sa	0130	0501	3.4E
	0815	1111	2.1F
	1421	1722	2.4E
	2008	2248	1.9F
24 Su	0159	0529	3.4E
	0849	1135	2.1F
	1500	1753	2.2E
	2044	2317	1.9F
25 M	0228	0556	3.3E
	0926	1206	2.1F
	1541	1824	2.1E
	2122	2350	1.8F
26 Tu	0256	0630	3.2E
	1006	1243	2.0F
	1625	1902	1.9E
	2205		
27 W		0028	1.6F
	0329	0710	3.1E
	1051	1327	1.9F
	1714	1950	1.7E
	2255		
28 Th		0114	1.4F
	0410	0759	2.9E
	1141	1418	1.8F
	1810	2050	1.7E
	2355		
29 F ◑		0209	1.2F
	0508	0857	2.7E
	1237	1518	1.7F
	1909	2207	1.7E
30 Sa	0104	0318	1.1F
	0628	1008	2.5E
	1338	1628	1.7F
	2008	2323	2.0E

May

	Slack	Maximum	
	h m	h m	knots
1 Su	0218	0441	1.1F
	0753	1129	2.6E
	1439	1741	1.9F
	2104		
2 M		0026	2.5F
	0328	0612	1.4F
	0910	1238	2.7E
	1537	1847	2.2F
	2156		
3 Tu		0121	3.0F
	0429	0733	1.9F
	1018	1338	2.9E
	1631	1942	2.4F
	2244		
4 W		0212	3.6E
	0523	0833	2.3F
	1120	1432	3.1E
	1722	2029	2.7F
	2330		
5 Th		0300	4.1E
	0614	0925	2.8F
	1217	1523	3.2E
	1811	2114	2.8F
6 F ●	0015	0346	4.4E
	0702	1014	3.0F
	1310	1613	3.2E
	1858	2158	2.8F
7 Sa	0059	0432	4.6E
	0750	1101	3.1F
	1402	1702	3.1E
	1946	2241	2.7F
8 Su	0143	0518	4.6F
	0838	1149	3.1F
	1453	1751	2.9E
	2034	2325	2.5F
9 M	0228	0605	4.3E
	0926	1238	2.9F
	1545	1842	2.6E
	2124		
10 Tu		0011	2.2F
	0315	0654	4.0E
	1016	1331	2.6F
	1637	1936	2.3E
	2218		
11 W		0100	1.8F
	0404	0746	3.5E
	1107	1433	2.2F
	1732	2035	2.1E
	2319		
12 Th		0157	1.3F
	0458	0844	3.0E
	1202	1544	2.0F
	1828	2136	2.0E
13 F ◐	0031	0323	1.0F
	0559	0946	2.6E
	1259	1653	1.8F
	1925	2239	2.0E
14 Sa	0153	0517	0.9F
	0707	1049	2.3E
	1358	1754	1.8F
	2020	2339	2.2E
15 Su	0313	0627	1.1F
	0818	1150	2.2E
	1455	1848	1.8F
	2110		
16 M		0033	2.4E
	0417	0725	1.3F
	0924	1247	2.1E
	1546	1935	1.8F
	2155		
17 Tu		0123	2.7E
	0504	0815	1.5F
	1024	1338	2.1E
	1632	2017	1.8F
	2236		
18 W		0207	3.0E
	0543	0900	1.8F
	1117	1425	2.2E
	1713	2051	1.8F
	2313		
19 Th		0249	3.2E
	0617	0940	1.9F
	1203	1508	2.2E
	1751	2113	1.8F
	2349		
20 F		0327	3.4E
	0650	1015	2.1F
	1246	1549	2.2E
	1827	2127	1.8F
21 Sa ○	0023	0402	3.5E
	0721	1043	2.1F
	1327	1627	2.2E
	1903	2149	1.8F
22 Su	0055	0435	3.6E
	0754	1101	2.2F
	1407	1703	2.1E
	1940	2218	1.8F
23 M	0126	0504	3.6F
	0828	1123	2.2F
	1447	1737	2.1E
	2018	2250	1.8F
24 Tu	0157	0534	3.5E
	0905	1153	2.2F
	1528	1811	2.0E
	2059	2327	1.8F
25 W	0230	0609	3.5E
	0944	1229	2.2F
	1611	1851	1.9E
	2145		
26 Th		0009	1.7F
	0307	0650	3.3E
	1027	1311	2.2F
	1657	1938	1.9E
	2238		
27 F		0057	1.5F
	0353	0737	3.1E
	1114	1359	2.1F
	1747	2036	2.0E
	2339		
28 Sa		0154	1.3F
	0453	0832	2.9E
	1205	1453	2.1F
	1839	2144	2.1E
29 Su ◑	0047	0302	1.2F
	0609	0938	2.6E
	1300	1553	2.1F
	1934	2253	2.4E
30 M	0200	0423	1.2F
	0731	1054	2.5E
	1358	1658	2.1F
	2028	2356	2.9E
31 Tu	0309	0556	1.4F
	0850	1207	2.4E
	1457	1803	2.2F
	2120		

June

	Slack	Maximum	
	h m	h m	knots
1 W	0413	0053	3.3E
	1001	0723	1.9F
	1555	1312	2.5E
	2211	1904	2.4F
2 Th		0147	3.8E
	0509	0826	2.3F
	1106	1411	2.6E
	1651	2000	2.5F
	2300		
3 F		0238	4.2F
	0601	0920	2.7F
	1205	1505	2.7E
	1744	2050	2.6F
	2348		
4 Sa ●		0327	4.5E
	0650	1010	2.9F
	1300	1557	2.7E
	1835	2138	2.6F
5 Su	0034	0414	4.6E
	0738	1058	3.0F
	1351	1647	2.7E
	1925	2224	2.4F
6 M	0121	0501	4.5E
	0824	1145	3.0F
	1441	1736	2.6E
	2015	2309	2.3F
7 Tu	0206	0547	4.3E
	0909	1231	2.8F
	1529	1826	2.5E
	2106	2354	2.0F
8 W	0253	0634	3.9E
	0954	1318	2.6F
	1617	1917	2.4E
	2200		
9 Th		0042	1.7F
	0340	0722	3.5E
	1039	1406	2.3F
	1705	2010	2.2E
	2259		
10 F		0134	1.3F
	0431	0812	3.0E
	1125	1458	2.1F
	1754	2105	2.2E
11 Sa	0004	0240	1.0F
	0526	0907	2.6E
	1213	1556	1.8F
	1843	2202	2.2E
12 Su ◐	0116	0429	0.8F
	0628	1005	2.2E
	1302	1656	1.7F
	1933	2259	2.3E
13 M	0231	0549	0.9F
	0736	1106	1.9E
	1353	1753	1.6F
	2021	2354	2.5E
14 Tu	0337	0651	1.1F
	0844	1205	1.8E
	1446	1844	1.6F
	2107		
15 W		0045	2.7E
	0430	0745	1.3F
	0949	1300	1.7E
	1537	1927	1.6F
	2151		
16 Th		0132	2.9E
	0513	0833	1.6F
	1047	1351	1.8E
	1626	2002	1.6F
	2233		
17 F		0216	3.2E
	0551	0916	1.8F
	1139	1439	1.8E
	1711	2025	1.6F
	2312		
18 Sa		0257	3.4E
	0626	0955	2.0F
	1225	1523	1.9E
	1753	2051	1.7F
	2350		
19 Su		0335	3.5E
	0700	1027	2.1F
	1308	1604	2.0E
	1835	2121	1.7F
20 M ○	0026	0411	3.6E
	0734	1050	2.2F
	1349	1643	2.0E
	1915	2155	1.8F
21 Tu	0102	0445	3.7E
	0809	1111	2.3F
	1429	1720	2.1E
	1957	2232	1.8F
22 W	0138	0518	3.7E
	0845	1140	2.4F
	1509	1758	2.1E
	2041	2313	1.9F
23 Th	0217	0554	3.7E
	0924	1214	2.5F
	1550	1838	2.2E
	2130	2357	1.8F
24 F	0300	0634	3.5E
	1005	1254	2.5F
	1633	1924	2.3E
	2223		
25 Sa		0047	1.7F
	0349	0720	3.3E
	1049	1338	2.5F
	1719	2017	2.4E
	2323		
26 Su		0143	1.5F
	0448	0813	3.0E
	1136	1427	2.4F
	1808	2118	2.6E
27 M ◑	0028	0249	1.4F
	0558	0914	2.6E
	1228	1522	2.3F
	1900	2223	2.8E
28 Tu	0139	0406	1.3F
	0715	1027	2.3E
	1325	1623	2.2F
	1954	2328	3.1E
29 W	0250	0547	1.5F
	0833	1143	2.2E
	1425	1730	2.1F
	2049		
30 Th		0029	3.5E
	0357	0716	1.8F
	0946	1251	2.2E
	1526	1838	2.2F
	2143		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Grays Harbor Entrance, Washington, 2016

F–Flood, Dir. 060° True E–Ebb, Dir. 240° True

July

	Slack	Maximum	
	h m	h m	knots
1 F		0126	3.8E
	0456	0820	2.2F
	1054	1353	2.2E
	1627	1942	2.2F
	2236		
2 Sa		0220	4.1E
	0550	0915	2.5F
	1154	1449	2.3E
	1724	2039	2.3F
	2327		
3 Su		0310	4.3E
	0639	1004	2.8F
	1248	1542	2.5E
	1819	2130	2.3F
4 M ●	0016	0358	4.4E
	0725	1051	2.9F
	1337	1631	2.5E
	1910	2217	2.2F
5 Tu	0103	0445	4.3E
	0808	1134	2.9F
	1423	1719	2.6E
	2000	2300	2.1F
6 W	0149	0529	4.1E
	0849	1215	2.8F
	1506	1805	2.5E
	2049	2341	1.9F
7 Th	0234	0612	3.8E
	0929	1252	2.6F
	1548	1851	2.5E
	2139		
8 F		0023	1.7F
	0318	0655	3.4E
	1008	1326	2.3F
	1630	1938	2.4E
	2231		
9 Sa		0100	1.4F
	0404	0738	3.0E
	1047	1358	2.1F
	1712	2026	2.4E
	2326		
10 Su		0154	1.2F
	0453	0823	2.5E
	1127	1431	1.9F
	1756	2118	2.3E
11 M ◐	0027	0252	0.9F
	0549	0915	2.1E
	1211	1511	1.7F
	1841	2212	2.3E
12 Tu	0133	0440	0.8F
	0652	1014	1.8E
	1259	1559	1.5F
	1929	2308	2.4E
13 W	0241	0608	0.9F
	0800	1118	1.6E
	1352	1656	1.4F
	2018		
14 Th		0003	2.6E
	0343	0710	1.1F
	0910	1220	1.5E
	1448	1759	1.3F
	2107		
15 F		0055	2.8E
	0435	0803	1.4F
	1014	1317	1.5E
	1544	1857	1.4F
	2154		
16 Sa		0143	3.0E
	0519	0850	1.6F
	1110	1409	1.6E
	1637	1943	1.5F
	2239		
17 Su		0228	3.3E
	0558	0930	1.9F
	1159	1456	1.8F
	1726	2022	1.6F
	2322		
18 M		0310	3.5E
	0634	1004	2.1F
	1243	1540	2.0E
	1811	2101	1.8F
19 Tu ○	0004	0349	3.7E
	0710	1030	2.3F
	1324	1621	2.2E
	1855	2140	1.9F
20 W	0045	0426	3.8E
	0746	1052	2.5F
	1403	1700	2.4E
	1940	2220	2.0F
21 Th	0127	0502	3.9E
	0823	1120	2.6F
	1442	1738	2.6E
	2025	2303	2.1F
22 F	0210	0540	3.8E
	0901	1154	2.7F
	1521	1819	2.7E
	2114	2349	2.1F
23 Sa	0256	0620	3.6E
	0941	1232	2.7F
	1603	1903	2.9E
	2207		
24 Su		0038	2.0F
	0347	0705	3.3E
	1024	1314	2.7F
	1646	1954	2.9E
	2304		
25 M		0133	1.8F
	0444	0756	3.0E
	1110	1401	2.5F
	1734	2051	3.0E
26 Tu ◑	0007	0236	1.6F
	0549	0856	2.5E
	1201	1454	2.3F
	1826	2155	3.1E
27 W	0117	0353	1.5F
	0702	1009	2.2E
	1258	1554	2.1F
	1923	2302	3.2E
28 Th	0230	0546	1.5F
	0819	1126	1.9E
	1401	1706	1.9F
	2022		
29 F		0007	3.4E
	0341	0709	1.8F
	0934	1236	1.9E
	1509	1830	1.9F
	2122		
30 Sa		0108	3.6E
	0444	0811	2.1F
	1042	1339	2.0E
	1615	1946	1.9F
	2219		
31 Su		0204	3.8E
	0539	0904	2.4F
	1141	1435	2.2E
	1716	2045	2.1F
	2313		

August

	Slack	Maximum	
	h m	h m	knots
1 M		0255	4.0E
	0627	0952	2.7F
	1232	1527	2.4E
	1811	2135	2.1F
2 Tu ●	0004	0343	4.0E
	0710	1036	2.8F
	1316	1614	2.6E
	1901	2218	2.2F
3 W	0050	0427	4.0E
	0749	1115	2.7F
	1357	1658	2.7E
	1947	2256	2.1F
4 Th	0134	0509	3.8E
	0825	1149	2.6F
	1435	1740	2.7E
	2030	2329	2.0F
5 F	0217	0548	3.5E
	0859	1216	2.5F
	1511	1821	2.7E
	2114		
6 Sa		0001	1.8F
	0258	0626	3.2E
	0933	1237	2.3F
	1548	1901	2.7E
	2158		
7 Su		0035	1.6F
	0340	0702	2.8E
	1008	1301	2.1F
	1625	1941	2.6E
	2245		
8 M		0113	1.4F
	0424	0739	2.4E
	1045	1331	1.9F
	1704	2025	2.5E
	2337		
9 Tu		0157	1.2F
	0513	0821	2.1E
	1126	1408	1.7F
	1746	2115	2.4E
10 W ◐	0034	0251	1.0F
	0611	0915	1.7E
	1213	1451	1.4F
	1832	2213	2.3E
11 Th	0138	0405	0.8F
	0719	1026	1.4E
	1307	1544	1.2F
	1924	2315	2.4E
12 F	0245	0628	0.9F
	0830	1140	1.3E
	1407	1648	1.1F
	2020		
13 Sa		0015	2.5E
	0347	0729	1.2F
	0938	1245	1.4E
	1510	1801	1.2F
	2116		
14 Su		0109	2.8E
	0439	0818	1.5F
	1037	1340	1.6E
	1610	1909	1.3F
	2209		
15 M		0158	3.1E
	0523	0859	1.8F
	1127	1429	1.9E
	1703	2002	1.6F
	2259		
16 Tu		0243	3.4E
	0603	0931	2.1F
	1211	1514	2.2E
	1752	2046	1.9F
	2346		
17 W		0325	3.6E
	0641	0957	2.4F
	1251	1555	2.6E
	1838	2129	2.1F
18 Th ○	0032	0405	3.8E
	0719	1023	2.6F
	1330	1635	2.9E
	1923	2211	2.4F
19 F	0117	0444	3.9E
	0756	1053	2.8F
	1408	1714	3.2E
	2010	2255	2.5F
20 Sa	0203	0524	3.8E
	0835	1128	2.9F
	1448	1755	3.4E
	2058	2340	2.5F
21 Su	0251	0606	3.6E
	0916	1207	2.9F
	1529	1839	3.5E
	2149		
22 M		0029	2.4F
	0343	0651	3.3E
	0959	1248	2.7F
	1612	1928	3.4E
	2244		
23 Tu		0122	2.2F
	0439	0742	2.8E
	1046	1335	2.5F
	1700	2024	3.3E
	2345		
24 W ◑		0224	1.9F
	0542	0843	2.4E
	1139	1427	2.1F
	1754	2129	3.2E
25 Th	0054	0346	1.6F
	0652	0957	2.0E
	1239	1531	1.8F
	1854	2239	3.1E
26 F	0208	0540	1.6F
	0808	1114	1.8E
	1348	1658	1.5F
	1959	2348	3.2E
27 Sa	0323	0656	1.8F
	0922	1224	1.8E
	1504	1845	1.6F
	2105		
28 Su		0051	3.3E
	0429	0756	2.1F
	1028	1326	2.0E
	1616	1953	1.8F
	2207		
29 M		0148	3.4E
	0523	0847	2.4F
	1122	1420	2.3E
	1717	2047	2.0F
	2303		
30 Tu		0239	3.6E
	0609	0933	2.5F
	1208	1509	2.6E
	1808	2134	2.1F
	2353		
31 W		0325	3.6E
	0648	1013	2.6F
	1247	1553	2.8E
	1852	2215	2.2F

September

	Slack	Maximum	
	h m	h m	knots
1 Th ●	0038	0407	3.6E
	0723	1048	2.6F
	1323	1633	3.0E
	1932	2249	2.1F
2 F	0120	0447	3.4E
	0755	1116	2.4F
	1357	1711	3.0E
	2010	2315	2.1F
3 Sa	0200	0523	3.2E
	0825	1133	2.3F
	1430	1747	3.0E
	2048	2339	2.0F
4 Su	0239	0557	3.0E
	0857	1149	2.2F
	1503	1821	3.0E
	2126		
5 M		0006	1.8F
	0318	0629	2.6F
	0930	1213	2.0F
	1536	1854	2.8E
	2207		
6 Tu		0039	1.7F
	0400	0701	2.3E
	1006	1243	1.8F
	1610	1928	2.7E
	2252		
7 W		0118	1.5F
	0445	0738	2.0E
	1047	1318	1.6F
	1647	2010	2.5E
	2343		
8 Th		0204	1.3F
	0539	0826	1.7E
	1134	1400	1.4F
	1730	2102	2.4E
9 F ◐	0041	0301	1.1F
	0643	0932	1.4E
	1229	1452	1.1F
	1824	2213	2.3E
10 Sa	0146	0421	1.0F
	0754	1101	1.3E
	1334	1557	1.0F
	1930	2328	2.4E
11 Su	0252	0644	1.2F
	0902	1212	1.4E
	1444	1717	1.0F
	2037		
12 M		0031	2.6E
	0351	0737	1.5F
	1000	1310	1.8E
	1549	1840	1.2F
	2140		
13 Tu		0126	2.9E
	0442	0817	1.8F
	1050	1400	2.2E
	1645	1944	1.6F
	2236		
14 W		0214	3.2E
	0526	0848	2.2F
	1134	1445	2.6E
	1735	2034	2.0F
	2329		
15 Th		0259	3.5E
	0607	0917	2.5F
	1215	1527	3.1E
	1821	2118	2.4F
16 F	0018	0342	3.7E
	0647	0948	2.8F
	1254	1608	3.5E
	1907	2201	2.7F
17 Sa	0107	0424	3.7E
	0727	1023	2.9F
	1333	1649	3.8E
	1953	2245	2.8F
18 Su	0155	0506	3.7E
	0808	1100	3.0F
	1413	1731	4.0E
	2041	2331	2.9F
19 M	0245	0551	3.4E
	0850	1140	2.9F
	1455	1815	4.0E
	2131		
20 Tu		0019	2.7F
	0337	0638	3.1E
	0935	1223	2.7F
	1540	1904	3.9E
	2225		
21 W		0112	2.4F
	0432	0731	2.6E
	1025	1310	2.3F
	1628	1959	3.6E
	2324		
22 Th		0215	2.1F
	0534	0834	2.2E
	1120	1404	1.9F
	1724	2104	3.3E
23 F ◑	0029	0345	1.8F
	0642	0947	1.9E
	1226	1513	1.5F
	1827	2216	3.0E
24 Sa	0143	0525	1.7F
	0754	1101	1.8E
	1345	1717	1.3F
	1938	2326	2.9E
25 Su	0257	0635	1.9F
	0904	1208	1.9E
	1509	1845	1.4F
	2048		
26 M		0030	2.9E
	0403	0733	2.1F
	1005	1308	2.2E
	1622	1946	1.7F
	2154		
27 Tu		0127	3.0E
	0457	0823	2.3F
	1055	1401	2.5E
	1718	2038	1.9F
	2251		
28 W		0218	3.1E
	0541	0907	2.4F
	1136	1447	2.8E
	1803	2123	2.1F
	2341		
29 Th		0303	3.1E
	0618	0945	2.4F
	1213	1528	3.1E
	1842	2203	2.2F
30 F ●	0025	0344	3.1E
	0650	1016	2.4F
	1247	1607	3.2E
	1917	2237	2.2F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Grays Harbor Entrance, Washington, 2016

F–Flood, Dir. 060° True E–Ebb, Dir. 240° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa	0106	0422	3.0E
	0720	1037	2.2F
	1319	1642	3.3E
	1950	2302	2.2F
2 Su	0144	0458	2.8E
	0751	1049	2.1F
	1350	1715	3.3E
	2023	2320	2.1F
3 M	0222	0531	2.6E
	0822	1107	2.0F
	1420	1744	3.2E
	2058	2342	2.0F
4 Tu	0301	0601	2.4E
	0856	1132	1.9F
	1449	1812	3.1E
	2135		
5 W		0012	1.9F
	0341	0632	2.2E
	0932	1203	1.8F
	1519	1844	2.9E
	2216		
6 Th		0048	1.8F
	0425	0708	1.9E
	1013	1238	1.6F
	1550	1922	2.8E
	2302		
7 F		0131	1.6F
	0516	0753	1.6E
	1101	1320	1.3F
	1627	2010	2.5E
	2355		
8 Sa ◐		0223	1.4F
	0615	0854	1.4E
	1158	1411	1.1F
	1719	2110	2.4E
9 Su	0054	0327	1.3F
	0720	1021	1.4E
	1307	1518	0.9F
	1835	2229	2.3E
10 M	0158	0450	1.3F
	0824	1138	1.6E
	1420	1640	0.9F
	1958	2347	2.4E
11 Tu	0259	0624	1.5F
	0920	1238	2.0E
	1528	1811	1.2F
	2110		
12 W		0049	2.7E
	0354	0717	1.9F
	1010	1329	2.5F
	1626	1926	1.6F
	2214		
13 Th		0143	3.0E
	0444	0758	2.2F
	1055	1416	3.1E
	1717	2020	2.1F
	2311		
14 F		0232	3.2F
	0530	0836	2.6F
	1137	1500	3.6E
	1805	2107	2.6F
15 Sa ○	0005	0319	3.4F
	0614	0914	2.8F
	1219	1543	4.1E
	1852	2152	2.9F
16 Su	0056	0404	3.4E
	0657	0953	3.0F
	1300	1625	4.4E
	1938	2237	3.1F
17 M	0146	0450	3.4E
	0741	1034	3.0F
	1342	1709	4.5E
	2025	2324	3.1F
18 Tu	0237	0537	3.2E
	0826	1116	2.8F
	1425	1755	4.4E
	2115		
19 W		0012	2.9F
	0329	0626	2.9E
	0914	1200	2.5F
	1511	1844	4.1E
	2206		
20 Th		0106	2.6F
	0424	0721	2.5E
	1006	1249	2.1F
	1600	1938	3.7F
	2302		
21 F		0209	2.3F
	0523	0824	2.2E
	1106	1345	1.6F
	1656	2040	3.3E
22 Sa ◑	0003	0334	2.0F
	0627	0932	2.0E
	1217	1501	1.2F
	1801	2149	2.9E
23 Su	0110	0459	1.9F
	0733	1041	1.9E
	1342	1712	1.1F
	1912	2258	2.6E
24 M	0219	0606	1.9F
	0836	1146	2.1E
	1509	1830	1.3F
	2026		
25 Tu		0002	2.5E
	0324	0703	2.0F
	0932	1244	2.4E
	1619	1930	1.5F
	2134		
26 W		0100	2.5F
	0418	0752	2.1F
	1019	1335	2.7E
	1711	2021	1.8F
	2234		
27 Th		0151	2.6E
	0502	0835	2.2F
	1059	1420	3.0E
	1752	2106	2.0F
	2325		
28 F		0237	2.6F
	0540	0912	2.2F
	1135	1501	3.3E
	1827	2146	2.1F
29 Sa	0010	0319	2.6E
	0613	0942	2.1F
	1209	1539	3.4E
	1859	2222	2.2F
30 Su ●	0050	0358	2.6E
	0645	0958	2.0F
	1241	1614	3.5E
	1930	2249	2.2F
31 M	0129	0434	2.5E
	0717	1011	2.0F
	1312	1646	3.5E
	2001	2307	2.2F

November

	Slack	Maximum	
	h m	h m	knots
1 Tu	0207	0508	2.3E
	0751	1032	1.9F
	1342	1715	3.4E
	2034	2326	2.1F
2 W	0246	0540	2.2E
	0826	1100	1.8F
	1410	1742	3.3E
	2109	2353	2.1F
3 Th	0326	0611	2.0E
	0904	1131	1.7F
	1438	1813	3.2E
	2148		
4 F		0027	2.0F
	0409	0647	1.8E
	0946	1208	1.6F
	1508	1850	3.0E
	2231		
5 Sa		0107	1.9F
	0456	0732	1.7E
	1035	1251	1.4F
	1544	1935	2.8E
	2318		
6 Su		0155	1.8F
	0549	0828	1.6E
	1133	1343	1.1F
	1635	2030	2.6E
7 M ◐	0012	0251	1.7F
	0646	0943	1.6E
	1241	1448	1.0F
	1750	2136	2.4E
8 Tu	0109	0356	1.6F
	0744	1059	1.9E
	1355	1609	1.0F
	1921	2256	2.4E
9 W	0209	0507	1.8F
	0839	1202	2.3E
	1505	1740	1.2F
	2042		
10 Th		0010	2.5E
	0307	0613	2.0F
	0929	1257	2.9E
	1606	1906	1.6F
	2152		
11 F		0111	2.6E
	0402	0709	2.3F
	1017	1347	3.5E
	1700	2007	2.1F
	2254		
12 Sa		0206	2.8E
	0453	0758	2.5F
	1103	1434	4.0E
	1750	2059	2.6F
	2351		
13 Su		0257	3.0E
	0542	0843	2.7F
	1147	1520	4.4E
	1837	2146	3.0F
14 M ○	0045	0346	3.1E
	0630	0928	2.8F
	1231	1605	4.7E
	1924	2233	3.1F
15 Tu	0137	0435	3.0F
	0717	1012	2.8F
	1316	1651	4.7E
	2012	2320	3.2F
16 W	0228	0524	2.9E
	0806	1057	2.6F
	1401	1738	4.6E
	2100		
17 Th		0009	3.0F
	0319	0615	2.7E
	0856	1143	2.4F
	1448	1826	4.2E
	2149		
18 F		0100	2.8F
	0411	0709	2.5E
	0950	1233	2.0F
	1538	1918	3.8E
	2240		
19 Sa		0158	2.5F
	0506	0807	2.2E
	1051	1329	1.5F
	1632	2015	3.3F
	2334		
20 Su		0307	2.2F
	0602	0909	2.1E
	1202	1443	1.1F
	1733	2116	2.8E
21 M ◑	0031	0421	2.0F
	0700	1013	2.1E
	1324	1645	1.0F
	1841	2223	2.4E
22 Tu	0131	0527	1.9F
	0757	1115	2.2E
	1450	1803	1.1F
	1954	2327	2.2E
23 W	0230	0625	1.9F
	0849	1212	2.5E
	1600	1905	1.3F
	2105		
24 Th		0026	2.1E
	0325	0715	1.9F
	0936	1304	2.8E
	1652	1958	1.6F
	2208		
25 F		0119	2.1E
	0414	0759	1.9F
	1018	1350	3.0E
	1733	2045	1.8F
	2303		
26 Sa		0208	2.1E
	0456	0838	1.9F
	1057	1433	3.3E
	1808	2127	2.0F
	2351		
27 Su		0252	2.1E
	0535	0907	1.9F
	1134	1512	3.5E
	1840	2205	2.1F
28 M	0034	0334	2.2E
	0612	0924	1.8F
	1208	1548	3.6E
	1911	2237	2.2F
29 Tu ●	0114	0413	2.1E
	0648	0941	1.8F
	1241	1622	3.6E
	1942	2300	2.2F
30 W	0153	0450	2.1E
	0725	1006	1.8F
	1313	1653	3.6E
	2015	2316	2.2F

December

	Slack	Maximum	
	h m	h m	knots
1 Th	0232	0524	2.0E
	0802	1036	1.8F
	1343	1721	3.5E
	2049	2340	2.2F
2 F	0311	0558	2.0E
	0842	1110	1.7F
	1414	1752	3.4E
	2126		
3 Sa		0012	2.2F
	0352	0633	1.9E
	0925	1149	1.6F
	1447	1828	3.3E
	2205		
4 Su		0049	2.2F
	0435	0715	1.9E
	1014	1233	1.5F
	1526	1911	3.1E
	2249		
5 M		0132	2.1F
	0521	0806	1.9E
	1111	1325	1.3F
	1617	2001	2.8E
	2336		
6 Tu		0221	2.1F
	0611	0908	2.0E
	1216	1427	1.2F
	1727	2100	2.5E
7 W ◐	0028	0316	2.0F
	0703	1018	2.3E
	1328	1541	1.1F
	1852	2211	2.3E
8 Th	0125	0418	2.0F
	0757	1125	2.6E
	1439	1710	1.2F
	2015	2331	2.2E
9 F	0224	0524	2.1F
	0850	1225	3.1E
	1545	1847	1.6F
	2131		
10 Sa		0041	2.3E
	0323	0627	2.2F
	0942	1320	3.6E
	1643	1958	2.1F
	2238		
11 Su		0142	2.4E
	0420	0726	2.4F
	1032	1412	4.1E
	1736	2054	2.5F
	2339		
12 M		0238	2.6E
	0515	0820	2.5F
	1121	1501	4.5E
	1825	2144	2.9F
13 Tu ○	0034	0331	2.7E
	0608	0910	2.6F
	1209	1549	4.7E
	1913	2232	3.1F
14 W	0126	0421	2.8E
	0659	0958	2.6F
	1257	1636	4.7E
	1959	2318	3.2F
15 Th	0216	0511	2.8E
	0750	1045	2.5F
	1344	1723	4.6E
	2045		
16 F		0004	3.1F
	0304	0601	2.7E
	0841	1132	2.3F
	1431	1810	4.2E
	2130		
17 Sa		0049	2.9F
	0352	0651	2.6E
	0935	1220	1.9F
	1519	1858	3.8E
	2216		
18 Su		0136	2.6F
	0440	0744	2.4E
	1032	1312	1.6F
	1609	1947	3.3E
	2301		
19 M		0226	2.3F
	0529	0839	2.3E
	1136	1412	1.2F
	1704	2041	2.8E
	2349		
20 Tu ◑		0322	2.0F
	0618	0936	2.3E
	1248	1550	0.9F
	1805	2140	2.3E
21 W	0038	0427	1.8F
	0709	1035	2.3E
	1406	1724	0.9F
	1913	2242	1.9E
22 Th	0130	0531	1.6F
	0759	1132	2.5E
	1521	1832	1.0F
	2024	2344	1.7E
23 F	0225	0628	1.6F
	0848	1226	2.7E
	1620	1929	1.3F
	2133		
24 Sa		0042	1.7E
	0320	0718	1.5F
	0935	1316	2.9E
	1706	2020	1.5F
	2235		
25 Su		0136	1.7E
	0412	0801	1.6F
	1019	1402	3.1E
	1745	2105	1.8F
	2328		
26 M		0225	1.8E
	0500	0835	1.6F
	1100	1445	3.3E
	1819	2146	2.0F
27 Tu	0014	0310	1.9E
	0543	0857	1.6F
	1139	1525	3.5E
	1852	2221	2.1F
28 W ●	0056	0352	2.0E
	0624	0919	1.7F
	1216	1601	3.6E
	1924	2250	2.2F
29 Th	0135	0431	2.1E
	0704	0948	1.8F
	1252	1635	3.7E
	1956	2308	2.3F
30 F	0213	0508	2.1E
	0743	1021	1.8F
	1327	1706	3.7E
	2029	2328	2.4F
31 Sa	0251	0543	2.2E
	0824	1057	1.8F
	1402	1737	3.6E
	2105	2356	2.4F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Strait of Juan de Fuca Entrance, 2016

F–Flood, Dir. 115° True E–Ebb, Dir. 290° True

January

	Slack	Maximum		
	h m	h m	knots	
1 F ◑	0410 0902	0012 0638 1326 1943	1.1E 0.6F 1.5E *	
2 Sa	0513 0933	0114 0726 1416 2050	1.0E 0.4F 1.5E *	
3 Su	0625 1004 2010 2343	0225 0818 1506 2153	0.9E 0.3F 1.6E 0.3F	
4 M	2040	0338 0912 1553 2247	0.8E * 1.7E 0.4F	
5 Tu	0106 2110	0445 1006 1638 2335	0.9E * 1.7E 0.6F	
6 W	0213 2140	0543 1057 1720	1.0E * 1.8E	
7 Th	0307 2212	0017 0632 1144 1800	0.8F 1.1E * 1.9E	
8 F	0354 2245	0057 0716 1229 1839	1.0F 1.2E * 2.0E	
9 Sa ●	0435 2319	0134 0756 1312 1918	1.1F 1.3E * 2.1E	
10 Su	0514 2356	0211 0835 1355 1958	1.2F 1.4E * 2.1E	
11 M	0550	0248 0914 1439 2040	1.3F 1.4E * 2.0E	
12 Tu	0034 0625	0326 0953 1527 2124	1.3F 1.5E * 1.9E	
13 W	0117 0700 1455 1742	0406 1035 1618 2213	1.2F 1.6E 0.3F 1.8E	
14 Th	0203 0736 1546 1846	0448 1121 1716 2307	1.1F 1.7E 0.3F 1.6E	
15 F	0254 0813 1643 2001	0534 1210 1820	0.9F 1.7E 0.3F	
16 Sa ◐	0354 0851 1741 2127	0008 0624 1304 1931	1.4E 0.7F 1.8E 0.4F	
17 Su	0504 0931 1839 2303	0120 0721 1403 2046	1.2E 0.6F 1.9E 0.5F	
18 M	0626 1015 1934	0240 0823 1504 2158	1.0E 0.4F 1.9E 0.7F	
19 Tu	0035 0752 1102 2025	0401 0930 1604 2302	1.0E 0.3F 2.0E 0.9F	
20 W	0154 2114	0514 1035 1700 2359	1.1E * 2.1E 1.1F	
21 Th	0257 2200	0616 1136 1753	1.2E * 2.1E	
22 F	0350 2243	0049 0709 1231 1842	1.2F 1.3E * 2.1E	
23 Sa ○	0435 2325	0133 0756 1321 1927	1.2F 1.4E * 2.1E	
24 Su	0513	0214 0837 1407 2009	1.2F 1.5E * 2.0E	
25 M	0005 0547	0252 0916 1451 2050	1.2F 1.5E * 1.9E	
26 Tu	0044 0618	0328 0953 1534 2129	1.1F 1.5E * 1.7E	
27 W	0123 0646	0402 1030 1617 2208	1.0F 1.5E * 1.5E	
28 Th	0203 0712	0437 1107 1703 2250	0.8F 1.5E * 1.4E	
29 F	0246 0737	0512 1146 1752 2336	0.7F 1.5E * 1.2E	
30 Sa	0334 0802	0550 1228 1848	0.5F 1.5E *	
31 Su ◑	0434 0826	0030 0632 1315 1952	1.0E 0.3F 1.5E *	

February

	Slack	Maximum		
	h m	h m	knots	
1 M	1913 2252	0135 0722 1406 2058	0.9E * 1.5E 0.3F	
2 Tu	1953	0251 0819 1500 2201	0.8E * 1.6E 0.4F	
3 W	0021 2031	0407 0921 1553 2256	0.8E * 1.6E 0.6F	
4 Th	0134 2107	0511 1022 1644 2344	0.9E * 1.7E 0.8F	
5 F	0232 2143	0603 1117 1731	1.1E * 1.8E	
6 Sa	0320 2220	0026 0647 1208 1816	1.0F 1.2E * 1.9E	
7 Su	0401 2258	0106 0727 1255 1900	1.1F 1.4E * 2.0E	
8 M ●	0439 1205 1514 2337	0145 0805 1340 1944	1.2F 1.5E 0.4F 2.1E	
9 Tu	0515 1240 1612	0223 0843 1427 2029	1.2F 1.7E 0.5F 2.0E	
10 W	0018 0549 1320 1709	0302 0923 1514 2116	1.2F 1.8E 0.6F 2.0E	
11 Th	0102 0624 1405 1807	0342 1004 1605 2205	1.2F 1.9E 0.6F 1.8E	
12 F	0150 0658 1455 1908	0424 1049 1700 2258	1.0F 1.9E 0.6F 1.6E	
13 Sa	0243 0734 1552 2015	0509 1137 1800 2359	0.8F 1.9E 0.6F 1.4E	
14 Su ◐	0345 0810 1655 2130	0559 1231 1908	0.6F 1.9E 0.6F	
15 M	0500 0849 1801 2255	0109 0657 1331 2022	1.2E 0.4F 1.9E 0.6F	
16 Tu	1905	0229 0803 1436 2136	1.0E * 1.8E 0.7F	
17 W	0019 2005	0351 0916 1543 2243	1.0E * 1.8E 0.8F	
18 Th	0133 2059	0504 1028 1646 2341	1.1E * 1.9E 0.9F	
19 F	0233 2147	0604 1131 1742	1.2E * 1.9E	
20 Sa	0322 2232	0031 0652 1226 1832	1.0F 1.4E * 1.9E	
21 Su	0402 1140 1445 2313	0114 0734 1313 1917	1.0F 1.5E 0.3F 1.9E	
22 M ○	0436 1216 1535 2352	0152 0811 1356 1957	1.0F 1.5E 0.4F 1.8E	
23 Tu	0505 1250 1620	0227 0845 1435 2035	1.0F 1.6E 0.4F 1.7E	
24 W	0029 0531 1325 1702	0259 0917 1513 2112	0.9F 1.6E 0.4F 1.6E	
25 Th	0106 0555 1401 1742	0330 0948 1551 2148	0.8F 1.6E 0.4F 1.5E	
26 F	0144 0618 1440 1823	0401 1021 1630 2227	0.6F 1.6E 0.4F 1.3E	
27 Sa	0225 0639 1523 1907	0433 1055 1713 2309	0.5F 1.6E 0.4F 1.2E	
28 Su	0314 0659 1611 1957	0507 1132 1801 2359	0.4F 1.5E 0.3F 1.0E	
29 M	1704 2058	0547 1215 1857	* 1.5E 0.3F	

March

	Slack	Maximum		
	h m	h m	knots	
1 Tu ◑	1800 2212	0059 0635 1306 2001	0.9E * 1.5E 0.3F	
2 W	1854 2332	0212 0735 1404 2108	0.8E * 1.5E 0.4F	
3 Th	1943	0328 0845 1507 2209	0.9E * 1.5E 0.6F	
4 F	0044 2029	0434 0954 1608 2303	1.0E * 1.6E 0.7F	
5 Sa	0143 2112	0527 1056 1704 2350	1.2E * 1.7E 0.9F	
6 Su	0232 2154	0611 1149 1755	1.3E * 1.8E	
7 M	0315 1051 1425 2236	0032 0652 1239 1844	1.0F 1.5E 0.4F 1.9E	
8 Tu ●	0354 1123 1528 2319	0113 0731 1326 1931	1.1F 1.7E 0.6F 2.0E	
9 W	0430 1200 1626	0154 0810 1413 2019	1.1F 1.9E 0.8F 2.0E	
10 Th	0003 0506 1241 1723	0234 0851 1501 2107	1.1F 2.0E 0.9F 1.9E	
11 F	0050 0542 1326 1819	0316 0933 1550 2157	1.0F 2.1E 1.0F 1.8E	
12 Sa	0141 0617 1416 1917	0400 1017 1643 2252	0.8F 2.1E 1.0F 1.6E	
13 Su	0239 0652 1512 2019	0446 1106 1741 2352	0.6F 2.0E 0.9F 1.4E	
14 M	0347 0728 1614 2126	0539 1200 1845	0.4F 1.9E 0.8F	
15 Tu ◐	1722 2239	0101 0639 1301 1955	1.2E * 1.8E 0.8F	
16 W	1833 2352	0218 0751 1410 2108	1.1E * 1.7E 0.7F	
17 Th	1939	0337 0909 1522 2215	1.1E * 1.6E 0.8F	
18 F	2038	0058 0445 1023 1630 2313	1.2E * 1.6E 0.8F	
19 Sa	2130	0152 0540 1126 1729	1.4E * 1.6E	
20 Su	0237 1039 1355 2217	0002 0625 1217 1819	0.8F 1.5E 0.3F 1.7E	
21 M	0314 1110 1453 2258	0044 0703 1301 1904	0.8F 1.6E 0.4F 1.6E	
22 Tu	0345 1140 1542 2337	0121 0737 1341 1943	0.8F 1.6E 0.5F 1.6E	
23 W ○	0412 1210 1625	0155 0808 1417 2020	0.7F 1.7E 0.6F 1.6E	
24 Th	0436 1241 1705	0015 0226 0838 1452 2056	0.6F 1.7E 0.6F 1.5E	
25 F	0458 1312 1744	0053 0256 0907 1528 2132	0.5F 1.7E 0.6F 1.4E	
26 Sa	0517 1346 1824	0133 0326 0937 1602 2210	0.4F 1.7E 0.6F 1.3E	
27 Su	0535 1424 1905	0218 0357 1009 1641 2251	0.3F 1.6E 0.6F 1.2E	
28 M	1506 1951	0432 1044 1725 2339	* 1.6E 0.6F 1.1E	
29 Tu	1555 2044	0511 1124 1815	* 1.5E 0.5F	
30 W	1650 2144	0036 0600 1214 1912	1.0E * 1.4E 0.5F	
31 Th ◑	1750 2249	0142 0703 1314 2016	1.0E * 1.4E 0.5F	

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Strait of Juan de Fuca Entrance, 2016

F–Flood, Dir. 115° True E–Ebb, Dir. 290° True

April

	Slack	Maximum	
	h m	h m	knots
1 F		0252	1.0E
		0818	*
		1423	1.4E
	1849	2119	0.6F
	2352		
2 Sa		0354	1.2E
		0932	*
		1533	1.4E
	1945	2216	0.7F
3 Su	0048	0446	1.3E
		1036	*
		1637	1.5E
	2037	2307	0.8F
4 M	0138	0532	1.6E
	0944	1132	0.4F
	1320	1734	1.7E
	2126	2354	0.8F
5 Tu	0222	0614	1.8F
	1014	1223	0.7F
	1433	1827	1.8E
	2214		
6 W		0039	0.9F
	0303	0656	2.0E
	1049	1311	0.9F
	1536	1918	1.8E
	2301		
7 Th ●		0123	0.9F
	0342	0737	2.1E
	1127	1359	1.1F
	1634	2008	1.8E
	2350		
8 F		0206	0.9F
	0420	0820	2.2F
	1210	1447	1.2F
	1730	2059	1.8E
9 Sa	0042	0250	0.8F
	0457	0903	2.3E
	1255	1536	1.3F
	1825	2150	1.7E
10 Su	0138	0337	0.6F
	0533	0949	2.2E
	1345	1628	1.2F
	1920	2245	1.5E
11 M	0242	0426	0.4F
	0609	1038	2.1E
	1439	1722	1.1F
	2016	2345	1.4E
12 Tu		0521	*
		1131	1.9E
	1538	1822	1.0F
	2115		
13 W ◐		0051	1.3E
		0626	*
		1232	1.7E
	1644	1926	0.8F
	2215		
14 Th		0203	1.3E
		0741	*
		1342	1.5E
	1755	2033	0.7F
	2315		
15 F		0313	1.3E
		0900	*
		1456	1.4E
	1905	2137	0.7F

	Slack	Maximum	
	h m	h m	knots
16 Sa	0010	0414	1.4E
		1012	*
		1606	1.4E
	2009	2234	0.6F
17 Su	0058	0505	1.5E
	0939	1112	0.3F
	1247	1708	1.4E
	2105	2323	0.6F
18 M	0139	0548	1.6E
	1008	1201	0.4F
	1357	1800	1.4E
	2155		
19 Tu		0006	0.6F
	0214	0625	1.7E
	1037	1243	0.6F
	1453	1845	1.4E
	2240		
20 W		0043	0.5F
	0244	0659	1.7E
	1105	1321	0.7F
	1541	1926	1.4F
	2322		
21 Th ○		0118	0.5F
	0311	0729	1.8E
	1134	1356	0.8F
	1624	2004	1.4E
22 F	0004	0150	0.4F
	0334	0759	1.8E
	1203	1430	0.8F
	1705	2041	1.4E
23 Sa	0047	0221	0.3F
	0354	0828	1.8E
	1233	1504	0.8F
	1743	2119	1.3E
24 Su		0253	*
		0858	1.8E
	1304	1539	0.9F
	1823	2158	1.2E
25 M		0326	*
		0930	1.7E
	1339	1616	0.8F
	1903	2239	1.2E
26 Tu		0402	*
		1005	1.7E
	1418	1657	0.8F
	1945	2326	1.1E
27 W		0445	*
		1046	1.6E
	1503	1743	0.7F
	2031		
28 Th		0018	1.1E
		0537	*
		1135	1.5E
	1555	1834	0.7F
	2120		
29 F ◑		0116	1.1E
		0642	*
		1235	1.4E
	1653	1931	0.7F
	2211		
30 Sa		0216	1.2E
		0757	*
		1346	1.3E
	1757	2030	0.6F
	2304		

May

	Slack	Maximum	
	h m	h m	knots
1 Su		0313	1.4E
		0911	*
		1500	1.3E
	1900	2129	0.6F
	2354		
2 M		0405	1.6E
	0840	1017	0.3F
	1155	1611	1.4E
	2001	2224	0.7F
3 Tu	0042	0453	1.8E
	0908	1114	0.6F
	1324	1714	1.4E
	2058	2315	0.7F
4 W	0128	0539	2.0E
	0942	1207	0.9F
	1437	1812	1.5E
	2153		
5 Th		0005	0.7F
	0211	0624	2.2E
	1021	1257	1.1F
	1540	1906	1.6F
	2247		
6 F ●		0052	0.7F
	0253	0708	2.3E
	1102	1345	1.3F
	1637	1959	1.6E
	2341		
7 Sa		0139	0.6F
	0334	0752	2.4E
	1145	1434	1.4F
	1732	2051	1.6E
8 Su	0038	0227	0.5F
	0413	0837	2.3E
	1231	1522	1.4F
	1824	2143	1.6E
9 M	0139	0316	0.4F
	0451	0924	2.2E
	1320	1612	1.4F
	1915	2238	1.5E
10 Tu		0409	*
		1013	2.0E
	1411	1703	1.2F
	2005	2335	1.5E
11 W		0506	*
		1106	1.8E
	1507	1757	1.1F
	2055		
12 Th		0035	1.4E
		0611	*
		1204	1.6E
	1608	1854	0.9F
	2144		
13 F ◐		0138	1.4E
		0724	*
		1310	1.4E
	1713	1952	0.7F
	2231		
14 Sa		0239	1.4E
		0840	*
		1422	1.2E
	1822	2050	0.6F
	2316		
15 Su		0334	1.5E
		0949	*
		1533	1.1E
	1929	2145	0.5F
	2357		

	Slack	Maximum	
	h m	h m	knots
16 M		0423	1.6E
	0906	1048	0.3F
	1234	1637	1.1E
	2031	2235	0.4F
17 Tu	0034	0506	1.7E
	0935	1137	0.5F
	1345	1733	1.1E
	2128	2320	0.4F
18 W	0108	0544	1.8E
	1004	1220	0.6F
	1444	1822	1.2E
	2219		
19 Th		0000	0.3F
	0138	0619	1.8F
	1032	1258	0.8F
	1533	1906	1.2E
	2309		
20 F		0038	0.3F
	0205	0652	1.9E
	1101	1334	0.9F
	1618	1947	1.2F
21 Sa ○		0114	*
		0723	1.9E
	1130	1409	1.0F
	1659	2027	1.2E
22 Su		0148	*
		0754	1.9E
	1200	1444	1.0F
	1738	2106	1.2E
23 M		0223	*
		0826	1.9E
	1232	1519	1.0F
	1817	2145	1.2E
24 Tu		0300	*
		0900	1.8E
	1306	1555	1.0F
	1855	2226	1.2E
25 W		0340	*
		0937	1.7E
	1344	1634	1.0F
	1934	2310	1.2E
26 Th		0426	*
		1019	1.6E
	1427	1716	0.9F
	2013	2357	1.3E
27 F		0521	*
		1109	1.5E
	1516	1803	0.9F
	2054		
28 Sa		0048	1.3E
		0625	*
		1208	1.4E
	1612	1854	0.8F
	2136		
29 Su ◑		0141	1.4E
		0737	*
		1318	1.3E
	1714	1949	0.7F
	2220		
30 M		0235	1.6E
		0850	*
		1433	1.2E
	1822	2047	0.6F
	2306		
31 Tu		0328	1.8E
	0802	0957	0.4F
	1158	1548	1.2E
	1930	2144	0.6F
	2352		

June

	Slack	Maximum	
	h m	h m	knots
1 W		0419	2.0E
	0838	1057	0.7F
	1325	1656	1.2E
	2036	2240	0.5F
2 Th	0038	0508	2.1E
	0918	1152	1.0F
	1437	1759	1.3E
	2138	2334	0.5F
3 F	0124	0556	2.3E
	0959	1244	1.2F
	1540	1856	1.4E
	2239		
4 Sa ●		0026	0.5F
	0209	0644	2.4E
	1043	1333	1.4F
	1636	1950	1.5E
	2338		
5 Su		0117	0.4F
	0253	0730	2.4E
	1127	1421	1.5F
	1727	2043	1.5E
6 M	0038	0208	0.3F
	0335	0817	2.3E
	1213	1508	1.5F
	1816	2134	1.5E
7 Tu		0300	*
		0904	2.2E
	1300	1555	1.4F
	1901	2225	1.5E
8 W		0353	*
		0952	2.0E
	1348	1642	1.3F
	1944	2317	1.5E
9 Th		0450	*
		1042	1.8E
	1439	1729	1.1F
	2026		
10 F		0009	1.5E
		0551	*
		1136	1.5E
	1533	1818	0.9F
	2105		
11 Sa		0103	1.5E
		0657	*
		1235	1.3E
	1631	1908	0.7F
	2142		
12 Su ◐		0156	1.5E
		0806	*
		1341	1.1E
	1735	1959	0.5F
	2218		
13 M		0247	1.6E
		0913	*
		1451	1.0E
	1843	2051	0.4F
	2253		
14 Tu		0336	1.6E
	0830	1013	0.3F
	1204	1559	0.9E
	1953	2143	0.3F
	2327		
15 W		0421	1.7E
	0900	1106	0.5F
	1320	1700	1.0F
		2231	*

	Slack	Maximum	
	h m	h m	knots
16 Th		0502	1.8E
	0930	1151	0.6F
	1423	1754	1.0E
		2317	*
17 F		0540	1.8E
	1000	1232	0.8F
	1516	1843	1.1E
18 Sa		0000	*
		0617	1.9E
	1030	1310	0.9F
	1602	1927	1.1E
19 Su		0041	*
		0652	1.9E
	1101	1347	1.0F
	1645	2008	1.2E
20 M ○		0120	*
		0727	1.9E
	1133	1422	1.1F
	1724	2048	1.2E
21 Tu		0159	*
		0802	1.9E
	1206	1458	1.1F
	1801	2126	1.3E
22 W		0240	*
		0839	1.9E
	1241	1534	1.1F
	1836	2205	1.3E
23 Th		0323	*
		0919	1.8E
	1320	1611	1.1F
	1911	2246	1.4E
24 F		0411	*
		1003	1.7E
	1402	1651	1.0F
	1946	2329	1.4E
25 Sa		0506	*
		1053	1.6E
	1449	1735	0.9F
	2022		
26 Su		0015	1.5E
		0608	*
		1151	1.4E
	1543	1822	0.6F
	2059		
27 M ◑		0106	1.6E
		0716	*
		1258	1.2E
	1645	1915	0.7F
	2139		
28 Tu		0159	1.8E
	0643	0828	0.3F
	1018	1413	1.1E
	1755	2012	0.6F
	2222		
29 W		0255	1.9E
	0728	0937	0.6F
	1156	1530	1.1E
	1910	2112	0.4F
	2307		
30 Th		0350	2.0E
	0813	1041	0.8F
	1322	1643	1.1E
	2025	2213	0.4F
	2355		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Strait of Juan de Fuca Entrance, 2016

F–Flood, Dir. 115° True E–Ebb, Dir. 290° True

July

	Slack	Maximum		Slack	Maximum	
	h m	h m	knots	h m	h m	knots
1 F	0858 1433 2134	0444 1139 1749 2312	2.2E 1.0F 1.2E 0.3F	16 Sa	0928 1448	0503 1202 1817 2328	1.8E 0.8F 1.0E *
2 Sa	0045 0943 1534 2238	0536 1232 1848	2.3E 1.2F 1.3E	17 Su	1001 1536	0545 1242 1902	1.8E 0.9F 1.1E
3 Su	0136 1029 1627 2337	0009 0626 1321 1941	0.3F 2.3E 1.4F 1.4E	18 M	1034 1618	0014 0625 1320 1943	* 1.9E 1.0F 1.2E
4 M ●	0226 1114 1714	0103 0715 1408 2031	0.3F 2.3E 1.4F 1.5E	19 Tu ○	1108 1656	0058 0704 1357 2021	* 1.9E 1.1F 1.3E
5 Tu	0033 0315 1158 1757	0155 0802 1452 2118	0.3F 2.2E 1.4F 1.5E	20 W	1143 1731	0140 0743 1432 2058	* 2.0E 1.2F 1.4E
6 W	1243 1836	0246 0848 1535 2204	* 2.1E 1.3F 1.5E	21 Th	1220 1804	0223 0823 1509 2135	* 1.9E 1.2F 1.5E
7 Th	1327 1912	0337 0933 1617 2248	* 1.9E 1.2F 1.5E	22 F	1300 1837	0308 0906 1546 2213	* 1.9E 1.1F 1.6E
8 F	1413 1946	0428 1020 1658 2333	* 1.7E 1.0F 1.5E	23 Sa	0233 0520 1343 1910	0356 0951 1625 2255	0.3F 1.8E 1.0F 1.6E
9 Sa	1501 2017	0522 1108 1739	* 1.5E 0.8F	24 Su	0317 0622 1431 1944	0449 1042 1708 2340	0.3F 1.6E 0.9F 1.7E
10 Su	1554 2048	0019 0620 1200 1822	1.5E * 1.2E 0.6F	25 M	0408 0732 1525 2020	0548 1139 1754	0.3F 1.4E 0.8F
11 M ◐	1653 2118	0106 0722 1258 1908	1.6E * 1.0E 0.5F	26 Tu ◑	0503 0851 1629 2058	0031 0654 1244 1847	1.8E 0.4F 1.2E 0.6F
12 Tu	1802 2148	0155 0826 1404 1958	1.6E * 0.9E 0.3F	27 W	0559 1020 1745 2140	0126 0805 1359 1946	1.9E 0.5F 1.1E 0.4F
13 W	0746 1121	0244 0929 1515 2051	1.6E 0.3F 0.8E *	28 Th	0656 1151 1909 2227	0225 0917 1519 2051	1.9E 0.7F 1.0E 0.3F
14 Th	0821 1243	0333 1027 1624 2146	1.6E 0.4F 0.9E *	29 F	0750 1313	0326 1024 1635 2158	2.0E 0.8F 1.1E *
15 F	0855 1351	0419 1117 1724 2239	1.7E 0.6F 0.9E *	30 Sa	0842 1421	0426 1125 1741 2302	2.1E 1.0F 1.2E *
				31 Su	0931 1518	0522 1218 1838	2.1E 1.2F 1.3E

August

	Slack	Maximum		Slack	Maximum	
	h m	h m	knots	h m	h m	knots
1 M	1017 1607 2329	0002 0615 1307 1928	* 2.1E 1.2F 1.4E	16 Tu	1006 1538	0600 1248 1909	1.8E 1.0F 1.3E
2 Tu ●	0220 1102 1648	0056 0704 1351 2013	0.3F 2.1E 1.3F 1.5E	17 W	1043 1615 2350	0039 0644 1326 1946	* 1.9E 1.1F 1.5E
3 W	0015 0315 1145 1725	0146 0750 1432 2054	0.3F 2.0E 1.2F 1.6E	18 Th ○	0254 1121 1649	0123 0726 1402 2022	0.3F 1.9E 1.1F 1.6E
4 Th	0059 0405 1227 1758	0233 0834 1510 2133	0.3F 1.9E 1.1F 1.6E	19 F	0021 0351 1200 1722	0207 0809 1440 2059	0.4F 1.9E 1.1F 1.7E
5 F	0144 0452 1309 1828	0318 0916 1547 2211	0.3F 1.8E 1.0F 1.6E	20 Sa	0057 0447 1242 1755	0252 0854 1518 2138	0.5F 1.9E 1.0F 1.8E
6 Sa	0230 0537 1351 1856	0403 0958 1623 2249	0.3F 1.6E 0.8F 1.6E	21 Su	0138 0543 1328 1828	0340 0941 1558 2220	0.6F 1.8E 0.9F 1.9E
7 Su	0318 0622 1435 1922	0449 1041 1659 2329	0.3F 1.4E 0.7F 1.6E	22 M	0224 0643 1419 1902	0432 1033 1641 2306	0.7F 1.6E 0.8F 1.9E
8 M	1525 1947	0536 1127 1737	* 1.2E 0.5F	23 Tu	0317 0746 1518 1938	0528 1130 1729 2357	0.7F 1.4E 0.6F 1.9E
9 Tu	1624 2011	0011 0633 1220 1819	1.5E * 1.0E 0.3F	24 W ◑	0416 0858 1629 2015	0632 1236 1824	0.7F 1.2E 0.4F
10 W ◐		0057 0733 1322 1908	1.5E * 0.9E *	25 Th	0519 1017	0054 0742 1351 1928	1.9E 0.7F 1.1E *
11 Th	0649 1035	0148 0838 1434 2005	1.5E 0.3F 0.8E *	26 F	0625 1139	0159 0856 1512 2041	1.8E 0.7F 1.1E *
12 F	0734 1157	0242 0940 1548 2107	1.5E 0.4F 0.8E *	27 Sa	0727 1254	0306 1005 1627 2154	1.8E 0.8F 1.1E *
13 Sa	0814 1309	0336 1037 1652 2208	1.6E 0.5F 0.9E *	28 Su	0825 1357	0412 1107 1730 2301	1.9E 0.9F 1.3E *
14 Su	0853 1408	0427 1125 1745 2303	1.6E 0.7F 1.1E *	29 M	0917 1449 2229	0513 1200 1822 2359	1.9E 1.0F 1.4E 0.3F
15 M	0930 1456	0515 1209 1830 2353	1.7E 0.9F 1.2E *	30 Tu	0128 1006 1533 2309	0607 1246 1906	1.9E 1.0F 1.5E
				31 W	0230 1050 1609 2346	0050 0655 1328 1946	0.4F 1.9E 1.0F 1.6E

September

	Slack	Maximum		Slack	Maximum	
	h m	h m	knots	h m	h m	knots
1 Th ●	0324 1132 1641	0136 0739 1405 2022	0.5F 1.8E 1.0F 1.6E	16 F ○	0307 1059 1600 2336	0106 0710 1329 1945	0.6F 1.9E 1.0F 1.9E
2 F	0023 0413 1213 1709	0218 0820 1440 2056	0.5F 1.8E 0.9F 1.7E	17 Sa	0405 1142 1634	0150 0756 1408 2023	0.8F 1.9E 1.0F 2.0E
3 Sa	0100 0457 1253 1734	0258 0859 1513 2130	0.5F 1.6E 0.7F 1.7E	18 Su	0014 0500 1228 1709	0236 0843 1449 2103	0.9F 1.8E 0.9F 2.1E
4 Su	0138 0538 1333 1757	0337 0937 1545 2203	0.5F 1.5E 0.6F 1.6E	19 M	0056 0555 1317 1743	0324 0932 1531 2147	1.0F 1.7E 0.8F 2.1E
5 M	0218 0620 1417 1819	0417 1017 1619 2237	0.5F 1.4E 0.5F 1.6E	20 Tu	0144 0652 1413 1818	0415 1025 1617 2233	1.0F 1.6E 0.6F 2.0E
6 Tu	0301 0703 1509 1838	0459 1100 1654 2315	0.4F 1.2E 0.3F 1.5E	21 W	0237 0752 1520 1854	0510 1123 1708 2326	1.0F 1.4E 0.4F 1.9E
7 W	0349 0751	0547 1149 1735 2358	0.4F 1.1E * 1.5E	22 Th	0336 0857	0611 1230 1807	0.9F 1.3E *
8 Th	0442 0848	0641 1249 1824	0.4F 0.9E *	23 F ◑	0442 1007	0025 0719 1345 1918	1.8E 0.8F 1.2E *
9 F ◐	0539 0956	0049 0743 1400 1924	1.4E 0.4F 0.9E *	24 Sa	0552 1118	0134 0831 1502 2037	1.7E 0.8F 1.2E *
10 Sa	0634 1110	0147 0846 1513 2034	1.4E 0.4F 0.9E *	25 Su	0701 1224	0247 0940 1612 2154	1.6E 0.8F 1.3E *
11 Su	0725 1219	0250 0949 1617 2142	1.4E 0.5F 1.0E *	26 M	0804 1320	0358 1041 1709 2300	1.6E 0.8F 1.4E *
12 M	0812 1317	0351 1042 1708 2242	1.5E 0.6F 1.2E *	27 Tu	0901 1407 2209	0502 1133 1757 2354	1.6E 0.8F 1.6E 0.4F
13 Tu	0855 1405	0446 1128 1751 2334	1.6E 0.8F 1.3E *	28 W	0140 0951 1447 2243	0556 1218 1838	1.7E 0.8F 1.7E
14 W	0936 1447 2235	0537 1210 1830	1.7E 0.9F 1.5E	29 Th	0240 1036 1520 2315	0041 0644 1258 1914	0.5F 1.6E 0.8F 1.7E
15 Th	0205 1017 1525 2303	0021 0624 1250 1907	0.4F 1.8E 1.0F 1.7E	30 F ●	0332 1119 1548 2348	0123 0727 1334 1947	0.6F 1.6E 0.7F 1.8E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Strait of Juan de Fuca Entrance, 2016

F–Flood, Dir. 115° True E–Ebb, Dir. 290° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa	0417	0201	0.7F
	1200	0806	1.6E
	1613	1406	0.6F
		2018	1.8E
2 Su	0020	0237	0.7F
	0458	0843	1.5E
	1240	1438	0.5F
	1634	2048	1.8E
3 M	0052	0312	0.7F
	0537	0920	1.4E
	1323	1509	0.4F
	1654	2119	1.7E
4 Tu	0127	0348	0.7F
	0616	0959	1.3E
		1541	*
		2151	1.7E
5 W	0204	0427	0.7F
	0657	1040	1.2E
		1616	*
		2226	1.6E
6 Th	0246	0509	0.6F
	0741	1128	1.1E
		1657	*
		2306	1.5E
7 F	0334	0558	0.6F
	0830	1224	1.0E
		1747	*
		2354	1.4E
8 Sa ◐	0429	0653	0.5F
	0926	1329	1.0E
		1851	*
9 Su		0053	1.3E
	0528	0755	0.5F
	1026	1437	1.0E
		2006	*
10 M		0202	1.3E
	0628	0856	0.5F
	1126	1537	1.2E
		2118	*
11 Tu		0312	1.3E
	0725	0953	0.6F
	1221	1627	1.3E
		2221	*
12 W		0416	1.4E
	0816	1043	0.7F
	1308	1710	1.5E
	2130	2314	0.4F
13 Th	0059	0513	1.5E
	0905	1129	0.8F
	1351	1751	1.7E
	2155		
14 F		0002	0.6F
	0211	0605	1.6E
	0951	1213	0.8F
	1431	1830	1.9E
	2226		
15 Sa ○		0049	0.9F
	0314	0655	1.7E
	1038	1255	0.8F
	1509	1910	2.1E
	2302		
16 Su		0134	1.1F
	0411	0744	1.7E
	1126	1337	0.8F
	1546	1951	2.2E
	2342		
17 M		0221	1.2F
	0506	0833	1.7E
	1216	1421	0.7F
	1623	2033	2.3E
18 Tu	0026	0309	1.3F
	0600	0924	1.7E
	1311	1507	0.6F
	1700	2118	2.2E
19 W	0113	0359	1.3F
	0655	1018	1.6E
	1414	1556	0.4F
	1736	2206	2.1E
20 Th	0205	0452	1.2F
	0751	1117	1.4E
		1650	*
		2259	2.0E
21 F	0303	0550	1.1F
	0848	1222	1.4E
		1754	*
		2359	1.8E
22 Sa ◐	0407	0653	0.9F
	0948	1332	1.3E
		1909	*
23 Su		0108	1.6E
	0517	0800	0.8F
	1047	1443	1.4E
		2031	*
24 M		0224	1.4E
	0629	0906	0.7F
	1143	1546	1.5E
		2146	*
25 Tu		0339	1.4E
	0737	1006	0.7F
	1232	1640	1.6E
	2112	2250	0.3F
26 W	0030	0444	1.4E
	0838	1058	0.6F
	1315	1725	1.7E
	2144	2342	0.5F
27 Th	0144	0540	1.4E
	0932	1143	0.6F
	1351	1804	1.8E
	2215		
28 F		0027	0.6F
	0243	0629	1.4E
	1020	1223	0.5F
	1422	1839	1.8E
	2246		
29 Sa		0106	0.8F
	0333	0712	1.4E
	1106	1259	0.4F
	1449	1911	1.9E
	2316		
30 Su ●		0142	0.8F
	0416	0751	1.4E
	1149	1332	0.4F
	1512	1942	1.9E
	2345		
31 M		0217	0.9F
	0456	0829	1.3E
	1234	1404	0.3F
	1532	2011	1.8E

November

	Slack	Maximum	
	h m	h m	knots
1 Tu	0016	0251	0.9F
	0534	0906	1.3E
		1436	*
		2041	1.8E
2 W	0048	0325	0.9F
	0612	0945	1.2E
		1509	*
		2112	1.7E
3 Th	0122	0401	0.9F
	0650	1026	1.2E
		1545	*
		2146	1.6E
4 F	0200	0440	0.8F
	0731	1111	1.1E
		1627	*
		2225	1.5E
5 Sa	0243	0523	0.8F
	0813	1202	1.1E
		1718	*
		2311	1.4E
6 Su	0332	0612	0.7F
	0859	1258	1.1E
		1822	*
7 M ◐		0009	1.3E
	0429	0706	0.6F
	0946	1357	1.2E
		1937	*
8 Tu		0118	1.2E
	0531	0804	0.6F
	1036	1452	1.3E
		2051	*
9 W		0233	1.2E
	0635	0902	0.6F
	1124	1543	1.5E
		2156	*
10 Th		0345	1.2E
	0736	0956	0.6F
	1211	1629	1.7E
	2052	2253	0.5F
11 F	0058	0449	1.3E
	0833	1047	0.6F
	1256	1714	2.0E
	2122	2344	0.8F
12 Sa	0213	0547	1.4E
	0928	1136	0.6F
	1339	1757	2.2E
	2158		
13 Su		0033	1.1F
	0316	0641	1.5E
	1021	1223	0.6F
	1421	1840	2.3E
	2237		
14 M ○		0120	1.3F
	0414	0733	1.6E
	1114	1310	0.6F
	1502	1924	2.4E
	2318		
15 Tu		0208	1.4F
	0508	0824	1.6E
	1209	1358	0.5F
	1543	2009	2.4E
16 W	0003	0256	1.5F
	0559	0916	1.6E
	1308	1447	0.4F
	1623	2055	2.3E
17 Th	0050	0344	1.5F
	0650	1010	1.5E
	1415	1539	0.3F
	1702	2144	2.2E
18 F	0140	0435	1.4F
	0740	1106	1.5E
		1636	*
		2236	1.9E
19 Sa	0235	0528	1.2F
	0830	1206	1.5E
		1740	*
		2334	1.7E
20 Su	0334	0624	1.0F
	0919	1308	1.5E
		1853	*
21 M ◐		0040	1.4E
	0440	0723	0.8F
	1007	1411	1.5E
		2012	*
22 Tu		0153	1.2E
	0550	0823	0.7F
	1053	1509	1.6E
		2125	*
23 W		0308	1.1E
	0701	0921	0.5F
	1136	1602	1.7E
	2045	2229	0.3F
24 Th	0018	0417	1.1E
	0808	1014	0.4F
	1214	1647	1.7E
	2117	2322	0.5F
25 F	0134	0517	1.1E
	0909	1101	0.4F
	1249	1728	1.8E
	2148		
26 Sa		0007	0.7F
	0234	0609	1.2E
	1004	1144	0.3F
	1321	1804	1.9E
	2218		
27 Su		0046	0.8F
	0325	0654	1.2E
		1223	*
		1838	1.9E
	2247		
28 M		0123	0.9F
	0409	0736	1.2E
		1259	*
		1910	1.9E
	2317		
29 Tu ●		0157	1.0F
	0449	0815	1.2E
		1334	*
		1941	1.9E
	2347		
30 W		0231	1.0F
	0527	0853	1.2E
		1409	*
		2012	1.9E

December

	Slack	Maximum	
	h m	h m	knots
1 Th	0018	0305	1.0F
	0604	0931	1.2E
		1445	*
		2045	1.8E
2 F	0051	0340	1.0F
	0639	1010	1.2E
		1523	*
		2120	1.7E
3 Sa	0127	0416	1.0F
	0715	1052	1.2E
		1606	*
		2159	1.6E
4 Su	0206	0455	0.9F
	0751	1136	1.2E
		1657	*
		2244	1.5E
5 M	0252	0538	0.8F
	0828	1223	1.3E
		1758	*
		2338	1.3E
6 Tu	0344	0625	0.7F
	0907	1314	1.4E
		1907	*
7 W ◐		0044	1.2E
	0443	0718	0.6F
	0948	1407	1.5E
		2020	*
8 Th		0159	1.1E
	0550	0814	0.6F
	1031	1500	1.7E
	1946	2130	0.3F
	2319		
9 F		0315	1.1E
	0700	0912	0.5F
	1117	1551	1.9E
	2018	2231	0.6F
10 Sa	0053	0427	1.1E
	0807	1009	0.5F
	1204	1641	2.1E
	2056	2327	0.9F
11 Su	0210	0531	1.2E
	0911	1104	0.5F
	1252	1730	2.3E
	2136		
12 M		0019	1.2F
	0314	0630	1.3E
	1011	1158	0.4F
	1340	1817	2.4E
	2218		
13 Tu ○		0108	1.4F
	0411	0724	1.4E
	1108	1250	0.4F
	1427	1904	2.4E
	2302		
14 W		.0156	1.5F
	0503	0816	1.5E
	1206	1341	0.4F
	1514	1952	2.4E
	2347		
15 Th		0243	1.6F
	0551	0907	1.6E
	1304	1433	0.3F
	1559	2039	2.3E
16 F	0033	0329	1.5F
	0637	0957	1.6E
	1407	1526	0.3F
	1644	2127	2.1E
17 Sa	0121	0416	1.4F
	0720	1048	1.6E
		1622	*
		2217	1.9E
18 Su	0211	0503	1.2F
	0802	1140	1.6E
		1722	*
		2311	1.6E
19 M	0305	0552	1.0F
	0842	1234	1.6E
		1827	*
20 Tu ◐		0009	1.4E
	0403	0642	0.8F
	0920	1329	1.6E
		1938	*
21 W		0115	1.1E
	0508	0735	0.6F
	0957	1423	1.6E
		2049	*
22 Th		0227	1.0E
	0620	0829	0.4F
	1032	1515	1.7E
	2011	2155	0.3F
	2347		
23 F		0340	0.9E
	0735	0924	0.3F
	1107	1604	1.7E
	2046	2252	0.5F
24 Sa	0108	0447	0.9E
		1016	*
		1648	1.8E
	2119	2340	0.6F
25 Su	0213	0544	1.0E
		1105	*
		1729	1.8E
	2150		
26 M		0022	0.8F
	0307	0634	1.0E
		1150	*
		1807	1.9E
	2221		
27 Tu		0101	0.9F
	0353	0718	1.1E
		1231	*
		1842	1.9E
	2251		
28 W ●		0137	1.0F
	0433	0758	1.2E
		1311	*
		1917	1.9E
	2322		
29 Th		0211	1.1F
	0511	0835	1.2E
		1349	*
		1951	1.9E
	2354		
30 F		0244	1.1F
	0545	0912	1.3E
		1427	*
		2026	1.9E
31 Sa	0027	0318	1.1F
	0618	0948	1.3E
		1507	*
		2103	1.8E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Race Rocks, Strait of Juan de Fuca, B.C., 2016

F–Flood, Dir. 091° True E–Ebb, Dir. 271° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◑		0127	0.9E
	0415	0719	1.4F
	1029	1437	1.5E
	2001	2147	0.3F
	2358		
2 Sa		0242	0.6E
	0508	0801	1.0F
	1051	1539	1.6E
	2034	2300	0.6F
3 Su	0150	0405	0.4E
	0611	0845	0.6F
	1108	1627	1.8E
	2103	2358	0.9F
4 M	0315	0518	0.4E
	0733	0933	0.3F
	1121	1707	1.9E
	2129		
5 Tu		0041	1.2F
	0416	0624	0.5E
		1018	*
		1745	2.0E
	2154		
6 W		0114	1.5F
	0503	0722	0.6E
		1128	*
		1822	2.1E
	2220		
7 Th		0142	1.9F
	0539	0810	0.8E
		1238	*
		1901	2.3E
	2249		
8 F		0211	2.2F
	0611	0849	1.0E
		1315	*
		1941	2.4E
	2321		
9 Sa ●		0242	2.5F
	0641	0922	1.2E
		1409	*
		2022	2.6E
	2356		
10 Su		0316	2.7F
	0710	0952	1.3E
		1449	*
		2103	2.6E
11 M	0033	0352	2.8F
	0739	1020	1.4E
		1529	*
		2146	2.6E
12 Tu	0111	0429	2.7F
	0808	1051	1.5E
		1612	*
		2231	2.4E
13 W	0152	0507	2.6F
	0836	1128	1.7E
		1700	*
		2320	2.1E
14 Th	0235	0546	2.4F
	0905	1211	1.9E
		1754	*
15 F		0014	1.8E
	0322	0627	2.1F
	0934	1259	2.0E
		1930	*

	Slack	Maximum	
	h m	h m	knots
16 Sa ◐		0116	1.4E
	0413	0711	1.8F
	1005	1353	2.2E
	1850	2036	0.5F
	2308		
17 Su		0225	1.1E
	0512	0759	1.4F
	1037	1450	2.3E
	1936	2201	0.8F
18 M	0123	0340	0.9E
	0622	0852	1.0F
	1112	1548	2.5E
	2018	2313	1.3F
19 Tu	0252	0459	0.8E
	0745	0955	0.6F
	1151	1644	2.6E
	2100		
20 W		0011	1.8F
	0359	0615	0.8E
	0914	1104	0.4F
	1236	1739	2.6E
	2141		
21 Th		0058	2.2F
	0456	0717	0.9E
	1033	1209	0.4F
	1330	1832	2.7E
	2222		
22 F		0140	2.5F
	0541	0805	1.1E
	1132	1305	0.4F
	1428	1922	2.7E
	2301		
23 Sa ○		0219	2.7F
	0620	0844	1.3E
	1216	1355	0.5F
	1525	2010	2.7E
	2340		
24 Su		0256	2.8F
	0652	0920	1.4E
	1257	1441	0.6F
	1617	2056	2.6E
25 M	0018	0332	2.8F
	0720	0955	1.5E
	1339	1525	0.6F
	1706	2140	2.4E
26 Tu	0055	0408	2.6F
	0743	1030	1.6E
	1425	1608	0.6F
	1751	2223	2.1E
27 W	0131	0443	2.4F
	0806	1107	1.7E
	1516	1654	0.5F
	1836	2307	1.8E
28 Th	0208	0518	2.1F
	0830	1145	1.7E
	1614	1742	0.4F
	1923	2354	1.4E
29 F	0245	0554	1.8F
	0852	1226	1.8E
	1717	1839	0.3F
	2026		
30 Sa		0045	1.0E
	0324	0629	1.4F
	0914	1308	1.8E
	1819	1951	0.3F
	2214		
31 Su ◑		0143	0.7E
	0407	0705	1.1F
	0933	1353	1.8E
	1909	2113	0.4F

February

	Slack	Maximum	
	h m	h m	knots
1 M	0020	0247	0.5E
	0501	0743	0.7F
	0952	1441	1.9E
	1949	2238	0.7F
2 Tu	0157	0404	0.4E
	0620	0828	0.4F
	1010	1534	2.0E
	2025	2338	1.0F
3 W	0307	0525	0.4E
		0903	*
		1630	2.1E
	2059		
4 Th		0019	1.4F
	0359	0628	0.6E
		1018	*
		1726	2.3E
	2136		
5 F		0056	1.8F
	0441	0717	0.8E
		1128	*
		1819	2.5E
	2214		
6 Sa		0132	2.2F
	0517	0756	1.0E
		1230	*
		1909	2.7E
	2253		
7 Su		0210	2.5F
	0549	0830	1.3E
	1150	1338	0.4F
	1505	1956	2.9E
	2333		
8 M ●		0247	2.8F
	0620	0901	1.5E
	1226	1426	0.6F
	1604	2041	2.9E
9 Tu	0014	0325	2.9F
	0649	0934	1.8E
	1308	1512	0.8F
	1659	2128	2.8E
10 W	0055	0403	2.8F
	0717	1012	2.0E
	1355	1600	0.8F
	1753	2217	2.6E
11 Th	0137	0441	2.7F
	0745	1053	2.2E
	1448	1651	0.9F
	1850	2310	2.3E
12 F	0222	0520	2.4F
	0814	1139	2.4E
	1546	1748	0.9F
	1958		
13 Sa		0007	1.9E
	0310	0601	2.0F
	0844	1229	2.5E
	1648	1852	0.9F
	2126		
14 Su ◐		0108	1.6E
	0404	0644	1.6F
	0915	1322	2.6E
	1749	2006	1.0F
	2326		
15 M		0212	1.3E
	0510	0733	1.1F
	0949	1418	2.6E
	1846	2125	1.2F

	Slack	Maximum	
	h m	h m	knots
16 Tu	0101	0322	1.1E
	0629	0830	0.7F
	1024	1517	2.6E
	1940	2239	1.5F
17 W	0216	0438	1.0E
	0754	0940	0.4F
	1103	1618	2.5E
	2031	2340	1.8F
18 Th	0319	0550	1.1E
	0917	1059	0.3F
	1155	1719	2.5E
	2119		
19 F		0030	2.0F
	0410	0646	1.2E
	1025	1204	0.3F
	1308	1815	2.6E
	2204		
20 Sa		0114	2.2F
	0453	0729	1.3E
	1113	1256	0.4F
	1422	1906	2.6E
	2247		
21 Su		0153	2.3F
	0526	0806	1.5E
	1150	1343	0.6F
	1525	1953	2.6E
	2326		
22 M ○		0229	2.3F
	0553	0841	1.7E
	1224	1426	0.8F
	1620	2037	2.5E
23 Tu	0003	0304	2.3F
	0615	0914	1.8E
	1258	1507	0.9F
	1708	2120	2.4E
24 W	0038	0337	2.3F
	0636	0948	2.0E
	1335	1548	1.0F
	1753	2203	2.1E
25 Th	0113	0410	2.1F
	0657	1022	2.1E
	1415	1629	1.0F
	1838	2247	1.9E
26 F	0148	0443	1.9F
	0719	1057	2.2E
	1458	1712	0.9F
	1924	2333	1.6E
27 Sa	0225	0517	1.6F
	0740	1134	2.2E
	1545	1757	0.8F
	2017		
28 Su		0020	1.3E
	0306	0551	1.2F
	0801	1213	2.2E
	1635	1848	0.8F
	2123		
29 M		0109	1.1E
	0354	0627	0.9F
	0822	1256	2.1E
	1727	1946	0.8F
	2307		

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑		0202	0.9E
	0458	0708	0.6F
	0845	1345	2.1E
	1819	2053	0.9F
2 W	0032	0258	0.8E
	0623	0803	0.3F
	0910	1440	2.1E
	1909	2202	1.1F
3 Th	0139	0401	0.8E
		0828	*
		1539	2.2E
	1959	2304	1.4F
4 F	0237	0510	1.0E
		0933	*
		1641	2.3E
	2048	2358	1.8F
5 Sa	0326	0608	1.2E
	0943	1130	0.3F
	1228	1742	2.5E
	2136		
6 Su		0046	2.1F
	0408	0653	1.5E
	1024	1224	0.5F
	1403	1838	2.8E
	2223		
7 M		0131	2.4F
	0446	0732	1.8E
	1103	1320	0.8F
	1518	1931	2.9E
	2309		
8 Tu ●		0213	2.6F
	0519	0812	2.1E
	1145	1412	1.1F
	1621	2023	2.9E
	2354		
9 W		0254	2.6F
	0550	0852	2.4E
	1229	1501	1.4F
	1720	2115	2.8E
10 Th	0040	0334	2.6F
	0619	0935	2.7E
	1315	1551	1.6F
	1818	2209	2.6E
11 F	0126	0413	2.4F
	0649	1021	2.9E
	1405	1641	1.7F
	1919	2305	2.4E
12 Sa	0215	0453	2.0F
	0719	1108	3.0E
	1458	1734	1.7F
	2028		
13 Su		0002	2.1E
	0310	0536	1.6F
	0749	1159	2.9E
	1555	1831	1.6F
	2154		
14 M		0059	1.8E
	0415	0622	1.2F
	0821	1251	2.8E
	1656	1934	1.6F
	2315		
15 Tu ◐		0159	1.6E
	0531	0717	0.7F
	0855	1347	2.7E
	1758	2045	1.5F

	Slack	Maximum	
	h m	h m	knots
16 W	0025	0303	1.5E
	0654	0834	0.4F
	0930	1447	2.5E
	1859	2157	1.6F
17 Th	0126	0415	1.5E
		0921	*
		1553	2.3E
	1958	2301	1.6F
18 F	0221	0523	1.5E
		1043	*
		1700	2.2E
	2054	2355	1.6F
19 Sa	0307	0614	1.7E
	1030	1212	0.4F
	1319	1801	2.2E
	2146		
20 Su		0041	1.7F
	0345	0655	1.8E
	1107	1256	0.5F
	1435	1853	2.3E
	2233		
21 M		0122	1.7F
	0416	0731	2.0E
	1136	1338	0.7F
	1536	1940	2.3E
	2315		
22 Tu		0158	1.7F
	0440	0804	2.1E
	1203	1417	1.0F
	1627	2025	2.2E
	2353		
23 W ○		0232	1.7F
	0502	0837	2.3E
	1230	1455	1.2F
	1713	2109	2.1E
24 Th	0030	0305	1.6F
	0524	0908	2.5E
	1259	1531	1.3F
	1756	2152	2.0E
25 F	0106	0338	1.5F
	0546	0940	2.5E
	1331	1609	1.4F
	1839	2236	1.9E
26 Sa	0144	0411	1.3F
	0607	1013	2.6E
	1405	1647	1.4F
	1923	2320	1.7E
27 Su	0227	0444	1.0F
	0628	1048	2.5E
	1442	1727	1.4F
	2010		
28 M		0004	1.5E
	0317	0519	0.7F
	0650	1127	2.5E
	1525	1811	1.3F
	2109		
29 Tu		0048	1.4E
	0423	0559	0.4F
	0710	1212	2.4E
	1613	1859	1.3F
	2215		
30 W		0134	1.4E
		0615	*
		1302	2.3E
	1708	1955	1.3F
	2330		
31 Th ◑		0223	1.3E
		0708	*
		1359	2.2E
	1807	2056	1.4F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Race Rocks, Strait of Juan de Fuca, B.C., 2016

F–Flood, Dir. 091° True E–Ebb, Dir. 271° True

April

	Slack	Maximum	
	h m	h m	knots
1 F	0028	0317	1.4E
		0810	*
		1500	2.2E
	1905	2201	1.5F
2 Sa	0123	0415	1.5E
		0918	*
		1605	2.3E
	2002	2302	1.6F
3 Su	0214	0512	1.8E
	0927	1106	0.3F
	1219	1709	2.4E
	2058	2358	1.8F
4 M	0259	0602	2.1E
	1002	1208	0.7F
	1404	1811	2.5E
	2152		
5 Tu		0049	2.0F
	0340	0648	2.4E
	1040	1307	1.1F
	1525	1910	2.6E
	2245		
6 W		0137	2.1F
	0415	0732	2.8E
	1120	1401	1.6F
	1632	2008	2.6E
	2337		
7 Th ●		0221	2.1F
	0449	0816	3.1E
	1203	1450	2.0F
	1734	2107	2.5E
8 F	0028	0303	2.0F
	0520	0902	3.3E
	1247	1538	2.3F
	1834	2204	2.4E
9 Sa	0121	0345	1.7F
	0551	0950	3.4E
	1333	1626	2.4F
	1937	2259	2.3E
10 Su	0217	0427	1.4F
	0622	1039	3.3E
	1422	1715	2.4F
	2045	2353	2.2E
11 M	0320	0512	1.0F
	0652	1130	3.2E
	1515	1806	2.2F
	2151		
12 Tu		0046	2.0E
	0434	0602	0.6F
	0719	1223	2.9E
	1614	1903	2.0F
	2250		
13 W ◐		0141	1.9E
		0659	*
		1318	2.5E
	1717	2006	1.7F
	2344		
14 Th		0242	1.8E
		0729	*
		1418	2.2E
	1821	2114	1.5F
15 F	0033	0356	1.9E
		0851	*
		1527	2.0E
	1926	2218	1.3F

	Slack	Maximum	
	h m	h m	knots
16 Sa	0118	0502	2.0E
		1048	*
		1643	1.8E
	2030	2314	1.2F
17 Su	0158	0549	2.1E
		1211	*
		1748	1.8E
	2130		
18 M		0002	1.1F
	0231	0627	2.2E
	1108	1256	0.5F
	1442	1842	1.8E
	2224		
19 Tu		0045	1.0F
	0259	0701	2.4E
	1128	1334	0.8F
	1543	1930	1.8E
	2312		
20 W		0123	1.0F
	0324	0733	2.5E
	1150	1408	1.1F
	1633	2017	1.8E
	2355		
21 Th ○		0158	0.9F
	0348	0803	2.7E
	1212	1442	1.4F
	1717	2102	1.8E
22 F	0037	0232	0.8F
	0411	0833	2.8E
	1236	1516	1.6F
	1759	2146	1.8E
23 Sa	0119	0305	0.7F
	0433	0902	2.8E
	1303	1550	1.7F
	1840	2228	1.7E
24 Su	0204	0338	0.5F
	0454	0934	2.8E
	1332	1625	1.7F
	1923	2308	1.7E
25 M	0259	0412	0.3F
	0511	1009	2.7E
	1405	1703	1.7F
	2009	2347	1.7E
26 Tu		0435	*
		1051	2.6E
	1444	1743	1.7F
	2050		
27 W		0026	1.6E
		0516	*
		1137	2.5E
	1530	1827	1.6F
	2140		
28 Th		0106	1.6E
		0602	*
		1229	2.4E
	1623	1916	1.5F
	2240		
29 F ◑		0151	1.7E
		0654	0.3E
		1325	2.3E
	1722	2010	1.5F
	2328		
30 Sa		0242	1.7E
		0755	*
		1426	2.2E
	1822	2108	1.5F

May

	Slack	Maximum	
	h m	h m	knots
1 Su	0017	0339	1.9E
		0904	*
		1533	2.1E
	1922	2208	1.5F
2 M	0105	0435	2.2E
		1047	*
		1641	2.1E
	2023	2309	1.4F
3 Tu	0151	0526	2.5E
	0952	1157	0.7F
	1402	1748	2.1E
	2124		
4 W		0006	1.4F
	0233	0614	2.9E
	1025	1257	1.3F
	1530	1854	2.1E
	2226		
5 Th		0059	1.4F
	0312	0700	3.2E
	1103	1349	1.8F
	1641	1958	2.1E
	2325		
6 F ●		0147	1.4F
	0349	0747	3.4E
	1143	1438	2.3F
	1745	2059	2.1E
7 Sa	0022	0232	1.3F
	0424	0835	3.6E
	1225	1524	2.6F
	1846	2155	2.1E
8 Su	0120	0316	1.1F
	0457	0924	3.6E
	1309	1609	2.7F
	1944	2247	2.1E
9 M	0221	0400	0.8F
	0529	1015	3.4E
	1356	1655	2.6F
	2039	2336	2.1E
10 Tu	0329	0446	0.5F
	0558	1106	3.2E
	1447	1742	2.4F
	2130		
11 W		0025	2.0E
		0539	*
		1157	2.8E
	1543	1833	2.1F
	2217		
12 Th		0117	2.0F
		0627	*
		1251	2.4E
	1644	1929	1.7F
	2300		
13 F ◐		0219	1.9F
		0739	0.4E
		1349	2.0E
	1748	2029	1.3F
	2339		
14 Sa		0341	2.0E
		0931	0.4E
		1501	1.6E
	1854	2129	1.0F
15 Su	0014	0444	2.1E
		1106	*
		1625	1.5E
	2004	2224	0.8F

	Slack	Maximum	
	h m	h m	knots
16 M	0045	0527	2.3E
		1204	*
		1732	1.4E
	2115	2316	0.6F
17 Tu	0112	0603	2.4E
	1104	1248	0.5F
	1445	1828	1.4E
	2223		
18 W		0003	0.4F
	0137	0636	2.6E
	1119	1325	0.8F
	1548	1920	1.4E
	2324		
19 Th		0044	0.3F
	0203	0707	2.7E
	1137	1358	1.1F
	1639	2009	1.4F
20 F	0017	0122	0.3F
	0229	0736	2.8E
	1157	1429	1.4F
	1724	2055	1.5E
21 Sa ○		0157	*
		0805	2.8E
	1220	1501	1.6F
	1806	2138	1.5E
22 Su		0233	*
		0835	2.9E
	1245	1533	1.8F
	1846	2216	1.6E
23 M		0305	*
		0909	2.9E
	1313	1608	1.9F
	1926	2251	1.6E
24 Tu		0346	*
		0948	2.8E
	1346	1644	1.9F
	1955	2324	1.6E
25 W		0417	*
		1030	2.7E
	1424	1722	1.8F
	2035	2358	1.7E
26 Th		0454	0.3E
		1116	2.6E
	1507	1803	1.8F
	2110		
27 F		0036	1.7E
		0539	0.4E
		1205	2.5E
	1557	1848	1.7F
	2159		
28 Sa		0119	1.8E
		0634	0.5E
		1259	2.3E
	1651	1935	1.6F
	2238		
29 Su ◑		0210	1.9E
		0739	0.4E
		1400	2.0E
	1749	2026	1.4F
	2319		
30 M		0307	2.1E
		0907	*
		1509	1.8E
	1849	2121	1.3F
31 Tu	0001	0404	2.4E
		1036	*
		1621	1.7E
	1953	2222	1.1F

June

	Slack	Maximum	
	h m	h m	knots
1 W	0044	0457	2.7E
	0942	1149	0.7F
	1409	1732	1.6E
	2102	2324	0.9F
2 Th	0128	0547	3.0E
	1012	1247	1.4F
	1541	1843	1.6E
	2212		
3 F		0023	0.9F
	0211	0635	3.3E
	1049	1338	2.0F
	1652	1950	1.7E
	2318		
4 Sa ●		0116	0.8F
	0254	0725	3.5E
	1128	1424	2.4F
	1753	2049	1.7E
5 Su	0019	0204	0.7F
	0335	0815	3.6E
	1209	1509	2.7F
	1848	2140	1.8E
6 M	0116	0249	0.7F
	0414	0906	3.5E
	1252	1552	2.8F
	1936	2227	1.9E
7 Tu	0216	0335	0.5F
	0450	0956	3.3E
	1337	1635	2.6F
	2021	2311	1.9E
8 W	0322	0420	0.3F
	0522	1045	3.0E
	1425	1719	2.4F
	2101	2356	1.9E
9 Th		0518	*
		1135	2.6E
	1517	1805	2.0F
	2138		
10 F		0046	1.9F
		0617	*
		1226	2.2E
	1613	1853	1.6F
	2212		
11 Sa		0145	1.8E
		0730	0.4E
		1323	1.8E
	1712	1942	1.2F
	2242		
12 Su		0305	1.9E
		0935	0.4E
		1432	1.4E
◐	1816	2032	0.9F
	2308		
13 M		0412	2.0E
		1111	*
		1556	1.2E
	1928	2124	0.5F
	2329		
14 Tu		0456	2.2E
		1210	*
		1708	1.1E
		2218	*
15 W		0534	2.3E
	1044	1233	0.5F
	1448	1809	1.0E
		2305	*

	Slack	Maximum	
	h m	h m	knots
16 Th		0610	2.4E
	1058	1314	0.8F
	1554	1906	1.1E
		2351	*
17 F		0644	2.6E
	1117	1347	1.1F
	1646	1958	1.2E
18 Sa		0050	*
		0717	2.7E
	1138	1416	1.4F
	1730	2043	1.3E
19 Su		0135	*
		0750	2.8E
	1202	1447	1.7F
	1809	2122	1.4E
20 M ○		0213	*
		0824	2.8E
	1229	1519	1.9F
	1844	2156	1.5E
21 Tu		0248	*
		0901	2.9E
	1259	1553	2.0F
	1918	2227	1.5E
22 W		0321	*
		0940	2.9E
	1333	1629	2.0F
	1950	2256	1.6E
23 Th		0356	*
		1021	2.8E
	1411	1706	2.0F
	2021	2328	1.7E
24 F		0437	*
		1104	2.7E
	1452	1744	1.9F
	2052		
25 Sa		0006	1.8E
		0526	0.4E
		1151	2.5E
	1538	1825	1.8F
	2124		
26 Su		0051	1.9E
		0625	0.4E
		1245	2.2E
	1628	1908	1.6F
	2157		
27 M ◑		0142	2.0E
		0739	0.3E
		1348	1.8E
	1723	1954	1.3F
	2232		
28 Tu		0240	2.3E
		0921	*
		1458	1.6E
	1824	2045	1.1F
	2309		
29 W		0338	2.5E
	0859	1032	0.4F
	1228	1612	1.4E
	1934	2144	0.8F
	2349		
30 Th		0433	2.8E
	0921	1142	1.0F
	1438	1726	1.3E
	2052	2250	0.6F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Race Rocks, Strait of Juan de Fuca, B.C., 2016

F–Flood, Dir. 091° True E–Ebb, Dir. 271° True

July

		Slack	Maximum	
		h m	h m	knots
1	F	0033	0526	3.0E
		0955	1239	1.5F
		1558	1839	1.3E
		2211	2354	0.5F
2	Sa	0122	0619	3.2E
		1033	1328	2.1F
		1701	1942	1.4E
		2318		
3	Su		0050	0.5F
		0213	0711	3.3E
		1113	1412	2.4F
		1753	2035	1.5E
4	M	0014	0142	0.5F
		0303	0802	3.3E
		1154	1455	2.6F
	●	1839	2119	1.6E
5	Tu	0104	0230	0.5F
		0351	0852	3.3E
		1236	1536	2.7F
		1918	2201	1.7E
6	W	0154	0316	0.5F
		0436	0941	3.1E
		1319	1616	2.6F
		1953	2241	1.8E
7	Th	0250	0402	0.4F
		0517	1028	2.8E
		1404	1657	2.3F
		2025	2323	1.8E
8	F		0500	*
			1115	2.5E
		1450	1737	2.0F
		2054		
9	Sa		0008	1.8E
			0603	*
			1204	2.0E
		1538	1818	1.6F
		2121		
10	Su		0058	1.8E
			0718	*
			1259	1.6E
		1630	1859	1.2F
		2146		
11	M		0157	1.8E
			0903	*
			1403	1.2E
	◐	1727	1940	0.9F
		2207		
12	Tu		0303	1.9E
			1025	*
			1519	1.0E
		1839	2022	0.5F
		2221		
13	W		0402	2.0E
		0938	1125	0.3F
		1321	1635	0.8E
			2123	*
14	Th		0451	2.1E
		0952	1219	0.6F
		1447	1746	0.8E
			2218	*
15	F		0536	2.3E
		1014	1258	1.0F
		1551	1847	0.9E
			2322	*
16	Sa		0618	2.4E
		1038	1330	1.3F
		1640	1939	1.0E
17	Su		0022	*
			0658	2.5E
		1104	1359	1.6F
		1722	2022	1.2E
18	M		0112	*
			0737	2.7E
		1133	1430	1.9F
		1757	2057	1.3E
19	Tu		0157	*
			0814	2.8E
		1205	1502	2.1F
	○	1829	2128	1.5E
20	W		0220	*
			0852	2.9E
		1239	1537	2.2F
		1859	2157	1.6E
21	Th		0305	*
			0931	2.9E
		1315	1612	2.3F
		1928	2226	1.7E
22	F		0344	*
			1012	2.8E
		1354	1648	2.2F
		1956	2301	1.9E
23	Sa		0422	*
			1057	2.6E
		1435	1726	2.1F
		2024	2342	2.0E
24	Su		0528	*
			1148	2.3E
		1519	1805	1.9F
		2052		
25	M		0028	2.1E
			0638	*
			1245	1.9E
		1609	1846	1.6F
		2123		
26	Tu		0121	2.3E
			0758	*
			1350	1.6E
	◑	1706	1931	1.2F
		2155		
27	W		0217	2.4E
		0726	0908	0.5F
		1115	1459	1.3E
		1814	2023	0.9F
		2231		
28	Th		0316	2.6E
		0806	1029	0.9F
		1336	1612	1.2E
		1935	2123	0.6F
		2309		
29	F		0415	2.7E
		0847	1136	1.4F
		1457	1729	1.1E
		2102	2232	0.4F
		2355		
30	Sa		0513	2.8E
		0930	1230	1.8F
		1602	1838	1.2E
			2341	*
31	Su		0609	2.9E
		1012	1317	2.2F
		1655	1933	1.4E
		2317		

August

		Slack	Maximum	
		h m	h m	knots
1	M		0042	0.4F
		0157	0703	3.0E
		1055	1400	2.4F
		1740	2017	1.5E
2	Tu	0001	0136	0.5F
		0300	0753	3.0E
		1137	1440	2.6F
	●	1817	2056	1.6E
3	W	0042	0224	0.6F
		0359	0841	3.0E
		1218	1518	2.6F
		1849	2133	1.8E
4	Th	0123	0310	0.7F
		0452	0927	2.8E
		1259	1555	2.5F
		1917	2211	1.8E
5	F	0208	0355	0.7F
		0541	1012	2.6E
		1339	1632	2.3F
		1942	2250	1.9E
6	Sa	0258	0441	0.6F
		0629	1059	2.2E
		1420	1708	2.0F
		2007	2331	1.9E
7	Su	0355	0529	0.5F
		0718	1148	1.8E
		1503	1745	1.6F
		2030		
8	M		0015	1.9E
		0459	0623	0.4F
		0814	1242	1.5E
		1548	1822	1.3F
		2052		
9	Tu		0101	1.9E
		0606	0730	0.3F
		0924	1340	1.1E
		1642	1900	0.9F
		2110		
10	W		0151	1.9E
		0705	0857	0.4F
		1146	1444	0.9E
	◐	1756	1942	0.5F
		2124		
11	Th		0246	1.9E
		0752	1052	0.6F
		1319	1557	0.8E
			2038	*
12	F		0346	1.9E
		0832	1143	0.9F
		1429	1716	0.8E
			2118	*
13	Sa		0446	2.0E
		0908	1222	1.3F
		1526	1820	0.9E
			2237	*
14	Su		0541	2.2E
		0943	1257	1.6F
		1613	1909	1.1E
			2342	*
15	M		0630	2.4E
		1019	1330	1.9F
		1653	1949	1.3E
16	Tu		0038	*
			0714	2.6E
		1056	1404	2.2F
		1727	2023	1.5E
17	W		0123	*
			0755	2.8E
		1134	1439	2.4F
		1759	2053	1.6E
18	Th	0039	0224	0.5F
		0348	0837	2.9E
		1213	1515	2.5F
	○	1828	2124	1.9E
19	F	0110	0306	0.6F
		0444	0920	2.8E
		1253	1551	2.5F
		1856	2157	2.0E
20	Sa	0150	0350	0.8F
		0537	1006	2.7E
		1334	1628	2.4F
		1923	2236	2.2E
21	Su	0236	0438	0.8F
		0632	1057	2.4E
		1417	1705	2.2F
		1950	2320	2.4E
22	M	0328	0531	0.9F
		0734	1152	2.1E
		1505	1745	1.8F
		2019		
23	Tu		0008	2.5E
		0425	0631	0.9F
		0851	1251	1.8E
		1600	1828	1.5F
		2049		
24	W		0101	2.5E
		0524	0741	1.0F
		1056	1353	1.5E
	◑	1706	1917	1.0F
		2123		
25	Th		0157	2.6E
		0622	0859	1.2F
		1230	1459	1.3E
		1825	2016	0.7F
		2159		
26	F		0257	2.5E
		0717	1018	1.5F
		1345	1614	1.2E
		1949	2132	0.4F
		2245		
27	Sa		0359	2.5E
		0810	1122	1.8F
		1449	1731	1.3E
		2110	2301	0.4F
		2345		
28	Su		0503	2.6E
		0901	1215	2.0F
		1545	1832	1.4E
		2216		
29	M		0003	0.4F
		0113	0603	2.6E
		0950	1302	2.2F
		1632	1918	1.6E
		2304		
30	Tu		0056	0.6F
		0232	0656	2.6E
		1036	1344	2.4F
		1711	1956	1.7E
		2342		
31	W		0144	0.7F
		0336	0745	2.6E
		1120	1422	2.4F
		1743	2032	1.8E

September

		Slack	Maximum	
		h m	h m	knots
1	Th	0017	0228	0.9F
		0432	0831	2.6E
		1201	1458	2.4F
	●	1810	2107	2.0E
2	F	0052	0309	1.1F
		0522	0917	2.4E
		1240	1532	2.3F
		1833	2142	2.1E
3	Sa	0129	0349	1.2F
		0609	1003	2.2E
		1319	1606	2.1F
		1854	2219	2.1E
4	Su	0209	0430	1.2F
		0657	1050	2.0E
		1357	1640	1.8F
		1916	2257	2.1E
5	M	0253	0514	1.1F
		0747	1138	1.7E
		1439	1715	1.5F
		1937	2336	2.1E
6	Tu	0340	0601	1.0F
		0855	1229	1.4E
		1526	1752	1.1F
		1956		
7	W		0018	2.0E
		0432	0653	0.9F
		1026	1320	1.1E
		1626	1832	0.7F
		2015		
8	Th		0103	1.9E
		0526	0756	0.9F
		1146	1415	1.0E
		1747	1925	0.4F
		2030		
9	F		0153	1.8E
		0620	0916	1.0F
		1252	1516	0.9E
	◐		1938	*
10	Sa		0249	1.8E
		0711	1034	1.2F
		1350	1634	0.9E
			2026	*
11	Su		0351	1.8E
		0801	1126	1.4F
		1443	1743	1.0E
			2131	*
12	M		0456	2.0E
		0848	1210	1.7F
		1529	1830	1.2E
			2336	*
13	Tu		0556	2.2E
		0934	1251	2.0F
		1609	1908	1.4E
		2247		
14	W		0045	0.5F
		0217	0647	2.4E
		1019	1331	2.2F
		1645	1942	1.7E
		2315		
15	Th		0130	0.8F
		0328	0735	2.6E
		1104	1410	2.4F
		1717	2014	1.9E
		2347		
16	F	0428	0823	2.6E
		1148	1448	2.5F
	○	1747	2049	2.2E
17	Sa	0024	0300	1.4F
		0524	0913	2.6E
		1232	1526	2.4F
		1815	2128	2.4E
18	Su	0105	0346	1.6F
		0621	1005	2.4E
		1318	1604	2.3F
		1843	2210	2.6E
19	M	0151	0434	1.8F
		0722	1059	2.2E
		1407	1644	2.0F
		1911	2257	2.7E
20	Tu	0240	0525	1.8F
		0838	1155	2.0E
		1501	1726	1.6F
		1942	2346	2.7E
21	W	0335	0621	1.8F
		1004	1251	1.8E
		1604	1813	1.2F
		2015		
22	Th		0039	2.6E
		0433	0724	1.8F
		1118	1349	1.6E
		1718	1909	0.8F
		2052		
23	F		0136	2.5E
		0534	0838	1.8F
		1224	1453	1.5E
	◑	1837	2028	0.5F
		2140		
24	Sa		0237	2.3E
		0636	0953	1.9F
		1325	1613	1.5E
		1959	2215	0.5F
		2255		
25	Su		0346	2.2E
		0736	1056	1.9F
		1421	1726	1.6E
		2120	2310	0.5F
26	M	0035	0458	2.1E
		0835	1151	2.0F
		1511	1817	1.7E
		2206		
27	Tu		0010	0.6F
		0208	0600	2.2E
		0930	1240	2.0F
		1555	1858	1.8E
		2247		
28	W		0104	0.9F
		0314	0653	2.2E
		1021	1323	2.0F
		1630	1933	1.9E
		2322		
29	Th		0148	1.1F
		0411	0741	2.2E
		1108	1400	1.9F
		1658	2007	2.0E
		2353		
30	F		0226	1.3F
		0501	0828	2.1E
		1151	1435	1.9F
	●	1721	2040	2.1E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Race Rocks, Strait of Juan de Fuca, B.C., 2016

F–Flood, Dir. 091° True E–Ebb, Dir. 271° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa	0023	0302	1.5F
	0547	0913	2.0E
	1231	1508	1.7F
	1741	2114	2.2E
2 Su	0054	0338	1.7F
	0633	0959	1.9E
	1311	1540	1.6F
	1801	2149	2.2E
3 M	0126	0414	1.7F
	0721	1045	1.7E
	1352	1614	1.3F
	1821	2224	2.2E
4 Tu	0200	0452	1.7F
	0817	1130	1.5E
	1438	1649	1.0F
	1839	2301	2.1F
5 W	0238	0533	1.6F
	0921	1216	1.4E
	1532	1726	0.7F
	1900	2341	1.9E
6 Th	0320	0618	1.5F
	1015	1301	1.2E
	1640	1812	0.4F
	1915		
7 F		0024	1.7E
	0408	0709	1.4F
	1118	1347	1.1E
		1820	*
8 Sa ◐		0113	1.6E
	0503	0809	1.3F
	1210	1438	1.1E
		1905	*
9 Su		0207	1.5E
	0602	0915	1.4F
	1301	1543	1.1E
		2006	*
10 M		0307	1.5E
	0700	1018	1.5F
	1350	1658	1.2E
		2101	*
11 Tu		0414	1.6E
	0756	1113	1.6F
	1436	1746	1.4E
	2135	2333	0.4F
12 W	0117	0523	1.8E
	0851	1204	1.8F
	1517	1823	1.6E
	2202		
13 Th		0026	0.7F
	0242	0624	2.0E
	0945	1252	1.9F
	1554	1857	1.9E
	2232		
14 F		0116	1.2F
	0349	0719	2.1E
	1037	1336	2.0F
	1627	1934	2.2E
	2308		
15 Sa ○		0203	1.7F
	0450	0815	2.2E
	1128	1418	2.0F
	1658	2014	2.5E
	2347		

	Slack	Maximum	
	h m	h m	knots
16 Su		0248	2.1F
	0549	0910	2.2E
	1219	1459	2.0F
	1728	2057	2.7E
17 M	0028	0333	2.4F
	0651	1005	2.2E
	1310	1539	1.8F
	1758	2143	2.8E
18 Tu	0113	0419	2.6F
	0757	1057	2.1E
	1404	1621	1.5F
	1830	2232	2.8E
19 W	0201	0508	2.6F
	0903	1149	2.0E
	1503	1706	1.2F
	1904	2323	2.7E
20 Th	0253	0559	2.5F
	1005	1240	1.9E
	1611	1757	0.8F
	1942		
21 F		0016	2.5E
	0350	0658	2.3F
	1103	1335	1.8E
	1726	1901	0.5F
	2027		
22 Sa ◑		0113	2.2E
	0453	0805	2.1F
	1158	1442	1.7E
	1848	2046	0.4F
	2145		
23 Su		0217	1.9E
	0558	0916	1.9F
	1251	1610	1.7E
	2006	2201	0.4F
	2354		
24 M		0335	1.7E
	0704	1021	1.8F
	1342	1713	1.8E
	2108	2318	0.6F
25 Tu	0122	0457	1.6E
	0809	1119	1.6F
	1428	1758	1.9E
	2153		
26 W		0019	0.9F
	0238	0559	1.7E
	0913	1210	1.5F
	1508	1836	2.0E
	2230		
27 Th		0107	1.1F
	0343	0651	1.7F
	1012	1255	1.4F
	1539	1909	2.1E
	2301		
28 F		0145	1.4F
	0437	0740	1.7E
	1105	1334	1.3F
	1603	1942	2.1E
	2328		
29 Sa		0219	1.6F
	0526	0827	1.7E
	1153	1409	1.1F
	1623	2014	2.2E
	2355		
30 Su ●		0251	1.9F
	0612	0912	1.6E
	1237	1441	1.0F
	1642	2047	2.2E
31 M	0021	0322	2.0F
	0656	0956	1.6E
	1321	1514	0.9F
	1701	2119	2.2E

November

	Slack	Maximum	
	h m	h m	knots
1 Tu	0048	0354	2.1F
	0742	1039	1.6E
	1406	1548	0.7F
	1719	2153	2.1E
2 W	0117	0429	2.0F
	0827	1119	1.5E
	1457	1622	0.4F
	1736	2228	1.9E
3 Th	0148	0505	2.0F
	0911	1159	1.4E
		1645	*
		2306	1.8E
4 F	0224	0546	1.8F
	0955	1237	1.3E
		1713	*
		2348	1.6E
5 Sa	0306	0630	1.7F
	1038	1316	1.2E
		1808	*
6 Su		0035	1.5E
	0358	0719	1.6F
	1121	1359	1.2E
		1859	*
7 M ◐		0127	1.4F
	0458	0814	1.5F
	1205	1451	1.2E
		1959	*
8 Tu		0227	1.3E
	0600	0910	1.5F
	1249	1555	1.3E
		2205	*
9 W		0336	1.3E
	0703	1009	1.4F
	1332	1649	1.5E
	2104	2309	0.4F
10 Th	0124	0450	1.4E
	0805	1108	1.4F
	1413	1731	1.8E
	2127		
11 F		0009	0.9F
	0253	0601	1.5E
	0909	1204	1.4F
	1450	1812	2.1E
	2159		
12 Sa		0059	1.5F
	0404	0706	1.6E
	1013	1256	1.4F
	1526	1854	2.4E
	2236		
13 Su		0147	2.1F
	0507	0808	1.7E
	1113	1344	1.4F
	1600	1939	2.7E
	2316		
14 M ○		0232	2.6F
	0608	0905	1.8E
	1210	1429	1.3F
	1634	2026	2.8E
	2358		
15 Tu		0316	3.0F
	0707	0958	1.9E
	1305	1512	1.2F
	1710	2116	2.9E

	Slack	Maximum	
	h m	h m	knots
16 W	0041	0400	3.1F
	0803	1046	1.9E
	1401	1557	1.0F
	1746	2206	2.8E
17 Th	0127	0446	3.1F
	0856	1133	1.9E
	1501	1644	0.8F
	1826	2258	2.6E
18 F	0217	0535	2.9F
	0946	1220	1.8E
	1609	1736	0.5F
	1909	2351	2.3E
19 Sa	0313	0627	2.5F
	1035	1313	1.7E
	1726	1843	0.3F
	2008		
20 Su		0047	1.9E
	0413	0726	2.2F
	1122	1424	1.7F
		2023	*
21 M ◑		0152	1.5E
	0518	0828	1.8F
	1208	1555	1.8E
	2006	2210	0.4F
22 Tu	0003	0318	1.2E
	0625	0929	1.4F
	1251	1651	1.9E
	2057	2320	0.7F
23 W	0137	0444	1.2E
	0734	1028	1.1F
	1330	1733	2.0E
	2136		
24 Th		0013	1.0F
	0257	0547	1.2E
	0847	1125	0.9F
	1401	1809	2.1E
	2209		
25 F		0058	1.3F
	0402	0643	1.2E
	1004	1217	0.7F
	1426	1842	2.1E
	2238		
26 Sa		0135	1.6F
	0457	0736	1.2E
	1112	1301	0.5F
	1447	1914	2.1E
	2304		
27 Su		0208	1.8F
	0545	0825	1.2E
	1208	1338	0.4F
	1508	1947	2.2E
	2329		
28 M		0237	2.0F
	0627	0909	1.3E
	1257	1413	0.4F
	1528	2019	2.2E
	2354		
29 Tu ●		0305	2.2F
	0706	0949	1.4E
		1447	*
		2051	2.1E
30 W	0019	0335	2.2F
	0741	1026	1.4E
		1521	*
		2123	2.1E

December

	Slack	Maximum	
	h m	h m	knots
1 Th	0046	0407	2.3F
	0815	1101	1.4E
		1548	*
		2157	2.0E
2 F	0115	0441	2.2F
	0847	1134	1.3E
		1628	*
		2233	1.8E
3 Sa	0149	0518	2.1F
	0920	1205	1.3E
		1703	*
		2314	1.7E
4 Su	0227	0557	2.0F
	0953	1236	1.2E
		1743	*
		2358	1.5E
5 M	0313	0639	1.8F
	1026	1313	1.3E
		1833	0.3E
6 Tu		0049	1.4E
	0405	0724	1.7F
	1059	1359	1.3E
		1941	*
7 W ◐		0149	1.2E
	0503	0812	1.5F
	1133	1453	1.5E
		2130	*
8 Th		0259	1.0E
	0605	0904	1.3F
	1209	1550	1.7E
	2034	2247	0.5F
9 F	0126	0416	1.0E
	0712	1002	1.1F
	1247	1641	2.0E
	2058	2349	1.1F
10 Sa	0303	0534	1.0E
	0825	1106	1.0F
	1329	1730	2.3E
	2132		
11 Su		0042	1.7F
	0416	0649	1.1E
	0943	1210	0.9F
	1412	1819	2.6E
	2211		
12 M		0129	2.4F
	0519	0756	1.2E
	1055	1306	0.8F
	1456	1908	2.8E
	2251		
13 Tu ○		0214	2.9F
	0614	0852	1.4E
	1157	1356	0.8F
	1540	1959	2.9E
	2333		
14 W		0257	3.2F
	0705	0940	1.5E
	1252	1443	0.8F
	1624	2051	2.9E
15 Th	0017	0340	3.3F
	0751	1023	1.6E
	1346	1530	0.7F
	1708	2142	2.8E

	Slack	Maximum	
	h m	h m	knots
16 F	0101	0423	3.2F
	0835	1105	1.7E
	1444	1618	0.6F
	1753	2233	2.5E
17 Sa	0148	0508	3.0F
	0916	1149	1.7E
	1548	1710	0.4F
	1841	2324	2.2E
18 Su	0238	0554	2.6F
	0955	1236	1.6E
		1833	*
19 M		0018	1.7E
	0332	0643	2.2F
	1032	1340	1.6E
		2010	*
20 Tu ◑		0119	1.3E
	0430	0733	1.7F
	1106	1505	1.7E
	1945	2142	0.4F
	2341		
21 W		0238	0.9E
	0531	0824	1.3F
	1136	1608	1.8E
	2032	2252	0.6F
22 Th	0129	0406	0.8E
	0639	0916	0.9F
	1201	1652	1.9E
	2109	2351	0.9F
23 F	0256	0517	0.7E
	0757	1011	0.5F
	1221	1730	2.0E
	2141		
24 Sa		0039	1.3F
	0405	0621	0.7E
		1112	*
		1806	2.1E
	2210		
25 Su		0118	1.5F
	0459	0722	0.8E
		1200	*
		1842	2.1E
	2237		
26 M		0151	1.8F
	0545	0814	0.9E
		1250	*
		1918	2.2E
	2303		
27 Tu		0219	2.0F
	0622	0854	1.0E
		1323	*
		1952	2.2E
	2329		
28 W ●		0246	2.2F
	0654	0929	1.1E
		1406	*
		2026	2.2F
	2356		
29 Th		0314	2.3F
	0721	1001	1.2E
		1446	*
		2058	2.2E
30 F	0025	0345	2.4F
	0747	1031	1.2E
		1524	*
		2132	2.2E
31 Sa	0056	0419	2.4F
	0812	1057	1.3E
		1557	*
		2208	2.1E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Admiralty Inlet (off Bush Pt.), Washington, 2016

F–Flood, Dir. 180° True E–Ebb, Dir. 005° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◑	0404 1005 1827 2206	0041 0708 1356 2013	1.8E 1.6F 2.4E 0.5F
2 Sa	0459 1040 1914 2339	0144 0755 1446 2121	1.4E 1.3F 2.5E 0.7F
3 Su	0604 1116 1956	0256 0847 1535 2223	1.2E 1.0F 2.6E 1.0F
4 M	0108 0717 1154 2034	0410 0942 1623 2318	1.1E 0.8F 2.8E 1.4F
5 Tu	0222 0828 1234 2110	0517 1037 1708	1.2E 0.7F 3.0E
6 W	0321 0932 1315 2145	0006 0614 1128 1750	1.8F 1.4E 0.6F 3.2E
7 Th	0410 1026 1357 2220	0048 0703 1215 1831	2.2F 1.6E 0.6F 3.3E
8 F	0453 1113 1440 2255	0127 0747 1259 1910	2.5F 1.8E 0.6F 3.5E
9 Sa ●	0531 1155 1524 2330	0205 0827 1342 1949	2.8F 2.0E 0.7F 3.6E
10 Su	0608 1236 1610	0242 0905 1425 2029	2.9F 2.2E 0.8F 3.6E
11 M	0007 0643 1317 1659	0319 0944 1510 2111	3.0F 2.4E 0.9F 3.6E
12 Tu	0046 0718 1401 1751	0357 1024 1557 2155	3.0F 2.6E 1.0F 3.4E
13 W	0127 0753 1449 1849	0437 1106 1649 2243	2.9F 2.7E 1.0F 3.1E
14 Th	0211 0829 1542 1954	0519 1152 1747 2337	2.7F 2.9E 1.1F 2.7E
15 F	0300 0907 1639 2109	0604 1241 1851	2.4F 3.0E 1.2F
16 Sa ◐	0355 0947 1739 2237	0039 0654 1335 2002	2.2E 2.0F 3.1E 1.3F
17 Su	0459 1031 1839	0150 0751 1433 2116	1.8E 1.6F 3.3E 1.6F
18 M	0010 0615 1119 1936	0310 0853 1533 2227	1.6E 1.3F 3.4E 1.9F
19 Tu	0138 0737 1210 2031	0431 1000 1633 2331	1.5E 1.1F 3.5E 2.3F
20 W	0252 0855 1305 2121	0544 1105 1730	1.7E 0.9F 3.7E
21 Th	0352 1003 1401 2209	0028 0645 1206 1823	2.6F 1.9E 0.9F 3.7E
22 F	0443 1100 1455 2253	0118 0738 1301 1911	2.9F 2.1E 0.9F 3.8E
23 Sa ○	0526 1151 1545 2335	0203 0825 1350 1957	3.0F 2.3E 1.0F 3.7E
24 Su	0605 1237 1632	0244 0907 1436 2039	3.0F 2.4E 1.0F 3.5E
25 M	0014 0639 1321 1717	0322 0946 1520 2119	2.9F 2.5E 1.0F 3.3E
26 Tu	0052 0711 1404 1801	0358 1023 1603 2158	2.7F 2.5E 0.9F 3.0E
27 W	0128 0741 1448 1845	0432 1059 1646 2237	2.4F 2.6E 0.9F 2.6E
28 Th	0205 0809 1533 1933	0506 1136 1731 2318	2.1F 2.5E 0.8F 2.2E
29 F	0244 0837 1621 2027	0541 1215 1821	1.8F 2.5E 0.8F
30 Sa	0327 0905 1712 2132	0005 0619 1257 1917	1.8E 1.5F 2.5E 0.8F
31 Su ◑	0418 0935 1804 2251	0059 0701 1343 2021	1.5E 1.1F 2.5E 0.8F

February

	Slack	Maximum	
	h m	h m	knots
1 M	0521 1008 1855	0205 0751 1435 2128	1.2E 0.8F 2.5E 1.0F
2 Tu	0019 0640 1046 1943	0322 0849 1529 2231	1.1E 0.6F 2.6E 1.3F
3 W	0139 0802 1132 2028	0438 0951 1623 2327	1.1E 0.4F 2.7E 1.7F
4 Th	0244 0911 1227 2110	0542 1052 1714	1.3E 0.4F 2.9E
5 F	0336 1004 1326 2150	0015 0634 1148 1802	2.0F 1.6E 0.5F 3.2E
6 Sa	0419 1046 1424 2230	0057 0718 1238 1847	2.4F 1.9E 0.7F 3.4E
7 Su	0457 1124 1520 2309	0137 0758 1325 1931	2.7F 2.2E 1.0F 3.6E
8 M ●	0532 1202 1615 2349	0216 0836 1411 2015	2.9F 2.5E 1.2F 3.6E
9 Tu	0606 1241 1710	0254 0914 1457 2100	3.0F 2.8E 1.4F 3.6E
10 W	0030 0640 1324 1805	0332 0953 1545 2146	3.0F 3.0E 1.6F 3.4E
11 Th	0112 0714 1410 1904	0412 1035 1636 2236	2.8F 3.2E 1.7F 3.1E
12 F	0158 0750 1501 2006	0454 1119 1731 2329	2.5F 3.3E 1.8F 2.7E
13 Sa	0248 0827 1557 2116	0539 1208 1831	2.2F 3.4E 1.8F
14 Su ◐	0345 0908 1658 2235	0030 0630 1301 1939	2.2E 1.7F 3.3E 1.7F
15 M	0453 0952 1803	0139 0727 1401 2052	1.8E 1.3F 3.2E 1.8F
16 Tu	0000 0615 1044 1908	0259 0834 1507 2206	1.6E 1.0F 3.2E 2.0F
17 W	0123 0742 1144 2009	0421 0947 1613 2313	1.6E 0.8F 3.2E 2.2F
18 Th	0233 0900 1250 2105	0533 1058 1716	1.7E 0.7F 3.2E
19 F	0329 1001 1356 2155	0011 0632 1201 1812	2.4F 2.0E 0.8F 3.3E
20 Sa	0416 1051 1455 2240	0100 0721 1255 1902	2.5F 2.2E 1.0F 3.3E
21 Su	0455 1134 1548 2320	0143 0803 1343 1946	2.6F 2.4E 1.1F 3.3E
22 M ○	0529 1212 1636 2358	0221 0841 1425 2027	2.6F 2.6E 1.2F 3.2E
23 Tu	0559 1248 1720	0256 0915 1505 2104	2.5F 2.7E 1.3F 3.0E
24 W	0034 0626 1324 1802	0328 0947 1542 2141	2.3F 2.7E 1.3F 2.8E
25 Th	0108 0651 1359 1844	0359 1018 1620 2217	2.1F 2.7E 1.3F 2.5E
26 F	0144 0716 1436 1928	0430 1050 1659 2256	1.8F 2.7E 1.3F 2.2E
27 Sa	0221 0740 1516 2015	0502 1124 1742 2338	1.5F 2.6E 1.2F 1.9E
28 Su	0304 0805 1600 2110	0537 1201 1830	1.2F 2.6E 1.2F
29 M	0355 0832 1650 2215	0028 0616 1244 1925	1.6E 0.9F 2.5E 1.1F

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑	0500 0902 1746 2331	0128 0704 1334 2030	1.3E 0.6F 2.4E 1.2F
2 W	0622 0940 1843	0241 0804 1433 2137	1.2E 0.4F 2.4E 1.3F
3 Th	0048 0748 1035 1938	0358 0914 1536 2239	1.2E 0.3F 2.5E 1.6F
4 F	0154 0851 1151 2029	0504 1023 1637 2333	1.5E 0.4F 2.7E 1.9F
5 Sa	0247 0936 1309 2117	0557 1125 1734	1.8E 0.6F 2.9E
6 Su	0331 1013 1420 2202	0020 0642 1219 1825	2.2F 2.2E 1.0F 3.2E
7 M	0410 1050 1523 2246	0103 0722 1308 1914	2.5F 2.5E 1.4F 3.4E
8 Tu ●	0446 1128 1622 2329	0144 0801 1356 2002	2.6F 2.9E 1.8F 3.5E
9 W	0521 1208 1719	0224 0840 1443 2049	2.7F 3.3E 2.1F 3.4E
10 Th	0014 0556 1250 1815	0305 0921 1531 2138	2.6F 3.5E 2.3F 3.3E
11 F	0100 0631 1336 1913	0346 1003 1621 2228	2.5F 3.7E 2.5F 3.0E
12 Sa	0149 0708 1425 2012	0430 1048 1714 2323	2.2F 3.7E 2.4F 2.6E
13 Su	0242 0747 1520 2117	0517 1136 1812	1.8F 3.6E 2.3F
14 M	0344 0829 1620 2227	0023 0609 1230 1916	2.2E 1.3F 3.3E 2.1F
15 Tu ◐	0458 0916 1726 2342	0131 0710 1332 2026	1.9E 0.9F 3.1E 2.0F
16 W	0625 1014 1835	0249 0822 1441 2138	1.8E 0.7F 2.9E 2.0F
17 Th	0055 0751 1126 1942	0406 0940 1553 2246	1.8E 0.6F 2.8E 2.0F
18 F	0158 0858 1246 2042	0514 1054 1700 2344	2.0E 0.7F 2.8E 2.1F
19 Sa	0251 0950 1359 2135	0609 1155 1759	2.2E 0.9F 2.8E
20 Su	0334 1032 1501 2221	0032 0654 1247 1849	2.1F 2.5E 1.2F 2.8E
21 M	0410 1108 1554 2302	0114 0733 1331 1933	2.1F 2.7E 1.4F 2.8E
22 Tu	0441 1142 1641 2340	0151 0807 1411 2013	2.1F 2.8E 1.6F 2.7E
23 W ○	0508 1213 1723	0224 0838 1447 2050	1.9F 2.9E 1.7F 2.6E
24 Th	0016 0533 1244 1803	0255 0908 1521 2125	1.8F 2.9E 1.8F 2.5E
25 F	0051 0557 1315 1843	0325 0937 1556 2201	1.6F 2.9E 1.8F 2.3E
26 Sa	0129 0620 1347 1924	0355 1007 1632 2239	1.4F 2.9E 1.8F 2.1E
27 Su	0209 0642 1423 2008	0427 1038 1710 2321	1.1F 2.8E 1.7F 1.9E
28 M	0255 0705 1502 2056	0502 1113 1753	0.8F 2.7E 1.7F
29 Tu	0350 0730 1548 2152	0008 0541 1153 1843	1.7E 0.6F 2.5E 1.6F
30 W	0459 0758 1642 2254	0105 0630 1242 1941	1.5E 0.3F 2.4E 1.5F
31 Th ◑	1741 2359	0211 0732 1342 2045	1.4E * 2.3E 1.5F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
* Current weak and variable.

Admiralty Inlet (off Bush Pt.), Washington, 2016

F–Flood, Dir. 180° True E–Ebb, Dir. 005° True

April

	Slack	Maximum	
	h m	h m	knots
1 F		0321	1.5E
		0846	*
		1452	2.3E
	1844	2148	1.7F
2 Sa	0059	0423	1.8E
	0826	1000	0.4F
	1132	1602	2.4E
	1944	2246	1.8F
3 Su	0151	0516	2.1E
	0904	1105	0.8F
	1304	1708	2.6E
	2039	2338	2.0F
4 M	0236	0602	2.6E
	0941	1201	1.3F
	1421	1804	2.8E
	2131		
5 Tu		0025	2.2F
	0316	0645	3.0E
	1018	1252	1.8F
	1527	1857	3.0E
	2221		
6 W		0109	2.3F
	0355	0726	3.4E
	1057	1341	2.3F
	1628	1948	3.1E
	2310		
7 Th ●		0153	2.3F
	0432	0807	3.8E
	1138	1429	2.7F
	1725	2039	3.1E
	2359		
8 F		0236	2.2F
	0510	0849	4.0E
	1221	1517	3.0F
	1821	2129	3.0E
9 Sa	0049	0320	2.0F
	0548	0933	4.0E
	1307	1606	3.0F
	1916	2221	2.8E
10 Su	0143	0407	1.7F
	0627	1019	3.9E
	1356	1658	3.0F
	2013	2316	2.6E
11 M	0242	0456	1.3F
	0707	1108	3.6E
	1448	1753	2.7F
	2111		
12 Tu		0016	2.3E
	0349	0552	1.0F
	0752	1202	3.3E
	1546	1852	2.5F
	2213		
13 W ◐		0122	2.1E
	0508	0656	0.7F
	0843	1304	2.9E
	1649	1957	2.2F
	2316		
14 Th		0233	2.0E
	0633	0811	0.5F
	0949	1413	2.5E
	1757	2104	2.0F
15 F	0017	0343	2.1E
	0747	0931	0.5F
	1114	1528	2.3E
	1905	2208	1.8F

	Slack	Maximum	
	h m	h m	knots
16 Sa	0112	0444	2.3E
	0844	1042	0.7F
	1242	1638	2.2F
	2008	2305	1.8F
17 Su	0159	0536	2.5E
	0928	1142	1.1F
	1359	1738	2.3E
	2104	2354	1.7F
18 M	0239	0618	2.7E
	1005	1232	1.4F
	1502	1830	2.3E
	2154		
19 Tu		0036	1.6F
	0313	0656	2.9E
	1038	1314	1.6F
	1555	1915	2.3E
	2238		
20 W		0113	1.6F
	0344	0729	3.0E
	1109	1352	1.9F
	1641	1956	2.3E
	2319		
21 Th ○		0147	1.4F
	0411	0800	3.1E
	1139	1427	2.0F
	1723	2034	2.3E
	2358		
22 F		0219	1.3F
	0436	0829	3.1E
	1208	1500	2.1F
	1802	2111	2.2E
23 Sa	0038	0251	1.1F
	0500	0858	3.1E
	1238	1534	2.2F
	1841	2148	2.1E
24 Su	0120	0323	0.9F
	0523	0928	3.0E
	1309	1609	2.2F
	1920	2227	2.0E
25 M	0204	0356	0.7F
	0546	1000	2.9E
	1343	1646	2.2F
	2001	2309	1.9F
26 Tu	0255	0433	0.5F
	0609	1035	2.8E
	1420	1726	2.1F
	2046	2355	1.8E
27 W	0354	0515	0.3F
	0635	1116	2.6E
	1503	1812	2.0F
	2133		
28 Th		0047	1.7E
		0607	*
		1204	2.4E
	1553	1903	1.9F
	2224		
29 F ◑		0145	1.8F
		0711	*
		1304	2.3E
	1649	2000	1.8F
	2316		
30 Sa		0246	1.9E
		0826	*
		1415	2.1E
	1752	2100	1.8F

May

	Slack	Maximum	
	h m	h m	knots
1 Su	0007	0343	2.2E
	0753	0940	0.6F
	1127	1529	2.1E
	1857	2159	1.8F
2 M	0055	0435	2.6E
	0831	1046	1.1F
	1303	1639	2.2E
	2000	2254	1.9F
3 Tu	0140	0523	3.0E
	0910	1144	1.7F
	1423	1743	2.4E
	2100	2345	1.9F
4 W	0223	0609	3.5E
	0950	1236	2.2F
	1531	1841	2.6F
	2157		
5 Th		0034	1.9F
	0304	0653	3.8E
	1031	1326	2.8F
	1631	1936	2.7E
	2252		
6 F ●		0122	1.8F
	0345	0737	4.1E
	1113	1415	3.1F
	1728	2029	2.8E
	2346		
7 Sa		0209	1.7F
	0426	0821	4.2E
	1157	1503	3.4F
	1822	2121	2.7E
8 Su	0041	0257	1.5F
	0507	0907	4.2E
	1243	1552	3.4F
	1914	2214	2.7E
9 M	0139	0346	1.2F
	0549	0954	3.9E
	1331	1642	3.2F
	2007	2308	2.5E
10 Tu	0242	0439	1.0F
	0633	1043	3.6E
	1422	1734	3.0F
	2059		
11 W		0005	2.4E
	0351	0536	0.7F
	0720	1136	3.1F
	1515	1828	2.6F
	2151		
12 Th		0106	2.3E
	0507	0641	0.5F
	0815	1235	2.7E
	1613	1925	2.3F
	2243		
13 F ◐		0208	2.3E
	0623	0755	0.4F
	0927	1342	2.2E
	1714	2024	2.0F
	2332		
14 Sa		0309	2.4E
	0727	0910	0.5F
	1057	1454	1.9E
	1819	2122	1.7F
15 Su	0018	0405	2.5E
	0817	1020	0.8F
	1229	1604	1.8E
	1923	2216	1.5F

	Slack	Maximum	
	h m	h m	knots
16 M	0100	0454	2.7E
	0857	1119	1.1F
	1349	1708	1.7E
	2024	2306	1.4F
17 Tu	0138	0536	2.9E
	0933	1208	1.5F
	1454	1804	1.8E
	2119	2350	1.2F
18 W	0212	0614	3.1E
	1006	1251	1.8F
	1548	1853	1.8E
	2210		
19 Th		0031	1.1F
	0244	0649	3.2E
	1037	1329	2.0F
	1634	1937	1.9E
	2257		
20 F		0108	1.0F
	0313	0722	3.2E
	1107	1405	2.3F
	1717	2018	2.0E
	2342		
21 Sa ○		0144	0.9F
	0341	0754	3.3E
	1137	1439	2.4F
	1756	2057	2.0E
22 Su	0027	0219	0.7F
	0407	0825	3.2E
	1207	1514	2.5F
	1835	2136	2.0E
23 M	0113	0254	0.6F
	0433	0857	3.2E
	1239	1549	2.5F
	1913	2215	2.0E
24 Tu	0200	0331	0.5F
	0459	0931	3.1E
	1313	1625	2.5F
	1951	2256	2.0E
25 W	0252	0411	0.3F
	0529	1008	3.0E
	1350	1704	2.5F
	2031	2340	2.0E
26 Th	0348	0457	0.3F
	0605	1050	2.8E
	1431	1746	2.4F
	2112		
27 F		0027	2.0E
		0551	*
		1139	2.5E
	1518	1833	2.2F
	2154		
28 Sa		0118	2.2E
	0543	0655	0.3F
	0808	1238	2.3E
	1611	1924	2.1F
	2237		
29 Su ◑		0211	2.4E
	0632	0807	0.5F
	0944	1347	2.0E
	1711	2019	1.9F
	2320		
30 M		0305	2.7E
	0716	0919	0.8F
	1128	1502	1.9E
	1817	2116	1.8F
31 Tu	0005	0358	3.0E
	0759	1026	1.4F
	1303	1616	1.9E
	1925	2214	1.7F

June

	Slack	Maximum	
	h m	h m	knots
1 W	0050	0449	3.4E
	0842	1126	1.9F
	1423	1725	2.0E
	2033	2310	1.6F
2 Th	0135	0538	3.8E
	0926	1221	2.5F
	1532	1828	2.2E
	2137		
3 F		0004	1.5F
	0220	0626	4.1E
	1010	1313	3.0F
	1632	1926	2.3E
	2238		
4 Sa ●		0056	1.4F
	0305	0713	4.2E
	1054	1402	3.3F
	1726	2020	2.4E
	2337		
5 Su		0147	1.3F
	0350	0759	4.2E
	1139	1450	3.5F
	1817	2113	2.5E
6 M	0035	0238	1.1F
	0435	0846	4.1E
	1225	1538	3.4F
	1906	2204	2.5E
7 Tu	0134	0329	1.0F
	0521	0933	3.9E
	1311	1625	3.3F
	1953	2255	2.5E
8 W	0235	0422	0.8F
	0608	1022	3.5E
	1358	1712	3.0F
	2038	2347	2.5E
9 Th	0339	0519	0.6F
	0658	1112	3.0E
	1446	1800	2.7F
	2121		
10 F		0040	2.5E
	0446	0620	0.5F
	0755	1206	2.5E
	1537	1849	2.3F
	2203		
11 Sa		0133	2.5E
	0552	0727	0.5F
	0905	1306	2.1E
	1631	1939	1.9F
	2243		
12 Su ○		0227	2.5E
	0650	0837	0.6F
	1030	1412	1.7E
	1729	2030	1.6F
	2321		
13 M		0318	2.7E
	0738	0944	0.8F
	1201	1522	1.5E
	1832	2122	1.3F
	2359		
14 Tu		0406	2.8F
	0820	1045	1.1F
	1324	1630	1.4E
	1937	2213	1.1F
15 W	0036	0451	2.9E
	0857	1137	1.4F
	1434	1732	1.4E
	2041	2302	0.9F

	Slack	Maximum	
	h m	h m	knots
16 Th	0111	0532	3.1E
	0931	1222	1.8F
	1531	1826	1.5E
	2140	2348	0.8F
17 F	0146	0611	3.2E
	1004	1303	2.1F
	1619	1914	1.6E
	2234		
18 Sa		0031	0.7F
	0220	0647	3.3E
	1037	1341	2.3F
	1702	1958	1.8E
	2325		
19 Su		0112	0.6F
	0254	0723	3.3E
	1109	1417	2.5F
	1742	2039	1.9E
20 M ○	0012	0151	0.6F
	0327	0758	3.4E
	1142	1453	2.7F
	1820	2118	2.0E
21 Tu	0056	0230	0.5F
	0401	0833	3.3E
	1215	1528	2.7F
	1856	2156	2.1E
22 W	0141	0311	0.5F
	0438	0910	3.3E
	1250	1604	2.8F
	1931	2235	2.1E
23 Th	0225	0354	0.5F
	0521	0950	3.1E
	1328	1642	2.7F
	2006	2316	2.3E
24 F	0312	0442	0.5F
	0611	1034	2.9E
	1408	1722	2.6F
	2042	2359	2.4E
25 Sa	0402	0536	0.5F
	0711	1123	2.6E
	1453	1805	2.4F
	2119		
26 Su		0046	2.6E
	0453	0638	0.6F
	0825	1221	2.3E
	1544	1852	2.2F
	2157		
27 M ◑		0136	2.8E
	0546	0746	0.8F
	0953	1327	2.0E
	1642	1945	1.9F
	2238		
28 Tu		0230	3.0E
	0637	0858	1.2F
	1129	1442	1.7E
	1749	2042	1.6F
	2321		
29 W		0324	3.3E
	0728	1006	1.6F
	1301	1559	1.6E
	1902	2142	1.4F
30 Th	0008	0419	3.6E
	0817	1110	2.1F
	1421	1712	1.7E
	2016	2243	1.2F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
* Current weak and variable.

Admiralty Inlet (off Bush Pt.), Washington, 2016

F–Flood, Dir. 180° True E–Ebb, Dir. 005° True

July

	Slack	Maximum	
	h m	h m	knots
1 F	0057	0513	3.8E
	0906	1208	2.6F
	1529	1818	1.9E
	2127	2342	1.2F
2 Sa	0147	0605	4.0E
	0953	1301	3.0F
	1627	1917	2.1E
	2231		
3 Su	0238	0039	1.1F
	1039	0655	4.1E
	1718	1350	3.2F
	2331	2011	2.3E
4 M ●	0328	0133	1.1F
	1125	0744	4.1E
	1805	1437	3.3F
		2101	2.4E
5 Tu	0026	0225	1.0F
	0418	0831	3.9E
	1209	1522	3.3F
	1848	2148	2.5E
6 W	0120	0315	1.0F
	0507	0917	3.7E
	1253	1605	3.1F
	1928	2234	2.5E
7 Th	0214	0406	0.9F
	0556	1003	3.3E
	1336	1647	2.8F
	2006	2318	2.6E
8 F	0308	0457	0.8F
	0646	1049	2.9E
	1419	1728	2.5F
	2041		
9 Sa	0404	0003	2.6E
	0741	0551	0.7F
	1504	1137	2.4E
	2115	1809	2.1F
10 Su	0500	0049	2.6E
	0843	0649	0.7F
	1551	1229	2.0E
	2149	1852	1.7F
11 M ◐	0555	0136	2.6E
	0957	0752	0.7F
	1643	1328	1.6E
	2222	1938	1.4F
12 Tu	0646	0224	2.6E
	1121	0857	0.8F
	1745	1435	1.3E
	2257	2028	1.1F
13 W	0732	0314	2.7E
	1246	1000	1.1F
	1855	1547	1.2E
	2334	2121	0.8F
14 Th	0815	0402	2.8E
	1400	1058	1.4F
	2008	1656	1.2E
		2216	0.7F
15 F	0014	0449	2.9E
	0854	1148	1.7F
	1502	1756	1.3E
	2115	2309	0.6F

	Slack	Maximum	
	h m	h m	knots
16 Sa	0056	0534	3.0E
	0931	1233	2.0F
	1553	1848	1.5E
	2213	2359	0.6F
17 Su	0139	0616	3.2E
	1007	1313	2.3F
	1637	1933	1.7E
	2302		
18 M	0223	0045	0.6F
	1042	0656	3.3E
	1716	1351	2.5F
	2345	2013	1.9E
19 Tu ○	0307	0128	0.6F
	1118	0735	3.4E
	1752	1428	2.7F
		2051	2.1E
20 W	0024	0211	0.7F
	0353	0814	3.4E
	1153	1503	2.8F
	1825	2128	2.3E
21 Th	0103	0254	0.8F
	0441	0854	3.4E
	1230	1539	2.8F
	1858	2205	2.5E
22 F	0143	0339	0.9F
	0532	0936	3.2E
	1309	1617	2.8F
	1931	2244	2.6E
23 Sa	0226	0427	1.0F
	0628	1022	3.0E
	1350	1656	2.6F
	2004	2326	2.8F
24 Su	0313	0520	1.1F
	0729	1112	2.7E
	1436	1738	2.3F
	2039		
25 M	0405	0011	3.0E
	0839	0619	1.2F
	1527	1209	2.3E
	2116	1824	2.0F
26 Tu ◑	0501	0101	3.1E
	0959	0725	1.3F
	1626	1315	1.9E
	2157	1917	1.7F
27 W	0559	0156	3.2E
	1127	0835	1.5F
	1736	1429	1.7E
	2243	2016	1.3F
28 Th	0658	0255	3.3E
	1254	0947	1.8F
	1855	1549	1.6E
	2334	2121	1.1F
29 F	0755	0356	3.5E
	1412	1053	2.2F
	2015	1704	1.6E
		2228	1.0F
30 Sa	0031	0455	3.6E
	0846	1154	2.5F
	1517	1810	1.9E
	2127	2332	0.9F
31 Su	0130	0552	3.7E
	0939	1247	2.8F
	1611	1907	2.1E
	2228		

August

	Slack	Maximum	
	h m	h m	knots
1 M		0031	1.0F
	0228	0645	3.8E
	1027	1336	3.0F
	1658	1957	2.3E
	2321		
2 Tu ●		0125	1.1F
	0324	0733	3.7E
	1112	1420	3.0F
	1740	2042	2.5E
3 W	0010	0215	1.1F
	0416	0819	3.6E
	1155	1501	2.9F
	1817	2124	2.6E
4 Th	0055	0302	1.2F
	0506	0903	3.4E
	1236	1540	2.7F
	1851	2203	2.7E
5 F	0140	0347	1.1F
	0554	0945	3.1E
	1315	1616	2.5F
	1922	2241	2.7E
6 Sa	0224	0432	1.1F
	0641	1027	2.7E
	1354	1652	2.2F
	1952	2319	2.7E
7 Su	0310	0518	1.0F
	0730	1110	2.3E
	1435	1728	1.8F
	2021	2358	2.6E
8 M	0357	0608	1.0F
	0824	1156	1.9E
	1519	1806	1.5F
	2049		
9 Tu		0040	2.6E
	0448	0702	0.9F
	0926	1249	1.6E
	1610	1849	1.1F
	2120		
10 W ◐		0126	2.5E
	0540	0802	1.0F
	1038	1352	1.3E
	1712	1937	0.8F
	2153		
11 Th		0216	2.5E
	0633	0907	1.1F
	1159	1505	1.2E
	1828	2034	0.6F
	2231		
12 F		0311	2.5E
	0724	1010	1.3F
	1316	1619	1.2E
	1948	2137	0.4F
	2318		
13 Sa		0406	2.6E
	0811	1107	1.6F
	1421	1723	1.3E
	2058	2238	0.4F
14 Su	0012	0458	2.8E
	0854	1156	1.9F
	1514	1816	1.6E
	2150	2333	0.5F
15 M	0111	0546	3.0E
	0935	1240	2.2F
	1557	1900	1.8F
	2232		

	Slack	Maximum	
	h m	h m	knots
16 Tu		0023	0.7F
	0209	0631	3.2E
	1014	1319	2.4F
	1635	1939	2.1E
	2309		
17 W		0109	0.9F
	0304	0715	3.3E
	1053	1357	2.6F
	1710	2016	2.4E
	2344		
18 Th ○		0153	1.1F
	0358	0757	3.4E
	1131	1433	2.7F
	1742	2052	2.7E
19 F	0021	0237	1.4F
	0451	0840	3.4E
	1210	1510	2.7F
	1814	2129	2.9E
20 Sa	0100	0323	1.6F
	0545	0925	3.3E
	1252	1548	2.6F
	1846	2208	3.1E
21 Su	0143	0411	1.7F
	0641	1012	3.0E
	1336	1628	2.4F
	1920	2250	3.3E
22 M	0230	0503	1.8F
	0741	1103	2.7E
	1424	1711	2.1F
	1956	2336	3.3E
23 Tu	0322	0600	1.8F
	0847	1201	2.3E
	1518	1800	1.7F
	2035		
24 W ◑		0027	3.3E
	0420	0703	1.8F
	1000	1306	1.9E
	1623	1855	1.3F
	2119		
25 Th		0125	3.2E
	0522	0813	1.9F
	1120	1422	1.7E
	1740	1959	1.0F
	2210		
26 F		0229	3.2E
	0628	0926	2.0F
	1241	1542	1.7E
	1905	2111	0.8F
	2310		
27 Sa		0337	3.2E
	0732	1035	2.2F
	1353	1656	1.8E
	2024	2225	0.8F
28 Su	0019	0443	3.2E
	0831	1136	2.4F
	1454	1759	2.0E
	2128	2331	0.9F
29 M	0129	0543	3.3E
	0925	1229	2.5F
	1543	1851	2.3E
	2220		
30 Tu		0029	1.1F
	0233	0636	3.3E
	1013	1316	2.6F
	1626	1936	2.5E
	2305		
31 W		0120	1.3F
	0331	0724	3.3E
	1058	1357	2.6F
	1702	2016	2.7E
	2346		

September

	Slack	Maximum	
	h m	h m	knots
1 Th ●		0205	1.4F
	0423	0808	3.2E
	1139	1435	2.5F
	1735	2052	2.8E
2 F	0024	0247	1.5F
	0510	0849	3.0E
	1218	1509	2.3F
	1804	2126	2.8E
3 Sa	0101	0327	1.5F
	0555	0928	2.8E
	1255	1542	2.0F
	1830	2159	2.8E
4 Su	0138	0406	1.5F
	0638	1006	2.5E
	1333	1615	1.7F
	1856	2232	2.8E
5 M	0215	0446	1.5F
	0722	1046	2.2E
	1413	1648	1.4F
	1921	2306	2.7E
6 Tu	0256	0528	1.4F
	0809	1129	1.9E
	1457	1724	1.1F
	1946	2344	2.6E
7 W	0340	0615	1.3F
	0902	1219	1.6E
	1551	1804	0.8F
	2013		
8 Th		0027	2.4E
	0430	0710	1.2F
	1003	1318	1.4E
	1658	1853	0.5F
	2043		
9 F ◐		0117	2.3E
	0525	0812	1.2F
	1114	1429	1.3E
	1822	1954	0.3F
	2122		
10 Sa		0216	2.3E
	0623	0917	1.3F
	1226	1543	1.3E
		2103	*
11 Su		0319	2.3E
	0719	1019	1.5F
	1330	1647	1.5E
	2044	2212	0.3F
	2336		
12 M		0421	2.5E
	0811	1113	1.8F
	1422	1739	1.8E
	2126	2311	0.6F
13 Tu	0055	0516	2.7E
	0858	1159	2.0F
	1506	1822	2.1E
	2159		
14 W		0003	0.9F
	0204	0607	2.9E
	0943	1241	2.2F
	1544	1901	2.5E
	2232		
15 Th		0050	1.3F
	0306	0655	3.1E
	1025	1321	2.4F
	1618	1938	2.9E
	2307		

	Slack	Maximum	
	h m	h m	knots
16 F ○		0136	1.7F
	0403	0741	3.2E
	1108	1400	2.5F
	1652	2015	3.2E
	2343		
17 Sa		0221	2.1F
	0459	0827	3.2E
	1151	1438	2.4F
	1725	2053	3.5E
18 Su	0023	0307	2.3F
	0553	0914	3.1E
	1236	1519	2.3F
	1759	2134	3.6E
19 M	0106	0354	2.5F
	0649	1003	2.9E
	1324	1601	2.0F
	1835	2217	3.7E
20 Tu	0153	0445	2.5F
	0747	1056	2.6E
	1417	1647	1.7F
	1913	2304	3.6E
21 W	0245	0541	2.5F
	0848	1154	2.3E
	1517	1738	1.3F
	1955	2356	3.4E
22 Th	0343	0642	2.3F
	0956	1300	2.0E
	1629	1838	1.0F
	2042		
23 F ◑		0056	3.1E
	0447	0750	2.2F
	1107	1415	1.9E
	1754	1949	0.7F
	2140		
24 Sa		0205	2.9E
	0556	0901	2.1F
	1219	1532	1.9E
	1919	2108	0.6F
	2255		
25 Su		0319	2.8E
	0705	1010	2.1F
	1323	1641	2.1E
	2028	2224	0.7F
26 M	0018	0429	2.7E
	0808	1111	2.1F
	1418	1739	2.4E
	2121	2329	1.0F
27 Tu	0136	0532	2.8E
	0905	1203	2.2F
	1503	1827	2.6E
	2205		
28 W		0024	1.3F
	0243	0626	2.8E
	0955	1248	2.2F
	1541	1908	2.8E
	2244		
29 Th		0111	1.5F
	0340	0713	2.8E
	1040	1327	2.1F
	1615	1944	3.0E
	2319		
30 F ●		0153	1.7F
	0429	0756	2.7E
	1121	1403	1.9F
	1644	2017	3.0E
	2352		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
* Current weak and variable.

Admiralty Inlet (off Bush Pt.), Washington, 2016

F–Flood, Dir. 180° True E–Ebb, Dir. 005° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa	0513	0231	1.9F
	1200	0835	2.6E
	1710	1436	1.7F
		2048	3.1E
2 Su	0024	0306	1.9F
	0555	0912	2.5E
	1238	1507	1.5F
	1734	2118	3.0E
3 M	0056	0342	2.0F
	0635	0949	2.3E
	1317	1538	1.3F
	1757	2148	2.9E
4 Tu	0129	0417	1.9F
	0715	1028	2.1E
	1359	1611	1.0F
	1819	2220	2.8E
5 W	0204	0455	1.8F
	0758	1110	1.9E
	1447	1646	0.7F
	1842	2255	2.6E
6 Th	0243	0538	1.7F
	0845	1157	1.7E
	1546	1727	0.5F
	1905	2334	2.5E
7 F	0328	0626	1.6F
	0938	1253	1.5E
		1816	*
8 Sa ◐	0420	0023	2.3E
	1037	0722	1.5F
		1358	1.5E
		1919	*
9 Su	0519	0122	2.1E
	1138	0824	1.5F
		1506	1.6E
		2034	*
10 M	0620	0231	2.1E
	1235	0926	1.6F
	2024	1606	1.8E
	2310	2147	0.3F
11 Tu	0721	0341	2.1E
	1325	1023	1.7F
	2054	1657	2.1E
		2250	0.7F
12 W	0045	0445	2.3E
	0816	1113	1.9F
	1408	1740	2.5E
	2125	2343	1.2F
13 Th	0202	0542	2.5E
	0908	1159	2.0F
	1447	1821	3.0E
	2158		
14 F	0308	0032	1.7F
	0957	0635	2.8E
	1524	1243	2.1F
	2234	1900	3.4E
15 Sa ○	0407	0119	2.3F
	1045	0725	2.9E
	1601	1325	2.1F
	2312	1940	3.7E
16 Su	0503	0205	2.7F
	1133	0814	3.0E
	1637	1407	2.0F
	2354	2021	4.0E
17 M	0557	0251	3.0F
	1223	0904	2.9E
	1714	1451	1.9F
		2103	4.1E
18 Tu	0038	0339	3.1F
	0652	0955	2.8E
	1315	1537	1.6F
	1753	2148	4.0E
19 W	0125	0429	3.1F
	0747	1049	2.6E
	1413	1626	1.3F
	1834	2236	3.8E
20 Th	0216	0523	2.9F
	0844	1147	2.4E
	1520	1721	1.0F
	1919	2330	3.4E
21 F	0312	0621	2.7F
	0944	1252	2.2E
	1637	1825	0.7F
	2010		
22 Sa ◑	0414	0030	3.0E
	1046	0724	2.4F
	1802	1402	2.1E
	2117	1940	0.5F
23 Su	0521	0140	2.6E
	1147	0831	2.1F
	1919	1513	2.2E
	2244	2101	0.5F
24 M	0630	0256	2.4E
	1243	0937	2.0F
	2018	1616	2.4E
		2217	0.8F
25 Tu	0018	0410	2.2E
	0737	1036	1.9F
	1331	1710	2.7E
	2104	2320	1.1F
26 W	0140	0515	2.2E
	0837	1128	1.8F
	1413	1755	2.9E
	2143		
27 Th	0247	0012	1.5F
	0930	0610	2.3E
	1449	1213	1.7F
	2218	1834	3.1E
28 F	0343	0057	1.8F
	1018	0659	2.3E
	1521	1252	1.6F
	2251	1909	3.2E
29 Sa	0431	0137	2.0F
	1102	0741	2.3E
	1549	1328	1.4F
	2322	1941	3.2E
30 Su ●	0513	0213	2.2F
	1143	0821	2.2E
	1615	1402	1.2F
	2352	2012	3.2E
31 M	0553	0247	2.3F
	1224	0858	2.2E
	1639	1434	1.1F
		2041	3.2E

November

	Slack	Maximum	
	h m	h m	knots
1 Tu	0022	0320	2.3F
	0631	0936	2.1E
	1307	1506	0.9F
	1702	2111	3.1E
2 W	0052	0354	2.3F
	0709	1014	2.0E
	1352	1540	0.7F
	1724	2142	3.0E
3 Th	0125	0430	2.2F
	0749	1055	1.9E
	1444	1616	0.4F
	1745	2216	2.8E
4 F	0201	0509	2.1F
	0831	1140	1.8E
		1657	*
		2255	2.6E
5 Sa	0242	0552	2.0F
	0916	1231	1.7E
		1748	*
		2341	2.4E
6 Su	0329	0641	1.9F
	1004	1328	1.8E
		1851	*
7 M ◐	0423	0038	2.1E
	1053	0736	1.8F
		1426	1.9E
		2005	*
8 Tu	0524	0147	2.0E
	1141	0834	1.7F
	1946	1522	2.2E
	2255	2120	0.4F
9 W	0628	0302	1.9E
	1227	0931	1.7F
	2018	1613	2.5E
		2225	0.9F
10 Th	0037	0413	2.0E
	0732	1026	1.7F
	1310	1659	3.0E
	2052	2322	1.5F
11 F	0200	0518	2.1E
	0832	1117	1.7F
	1352	1743	3.4E
	2128		
12 Sa	0308	0014	2.1F
	0930	0617	2.3E
	1433	1206	1.7F
	2207	1827	3.8E
13 Su	0409	0103	2.7F
	1024	0711	2.5E
	1514	1253	1.7F
	2248	1910	4.1E
14 M ○	0504	0150	3.1F
	1118	0803	2.6E
	1555	1340	1.6F
	2331	1954	4.3E
15 Tu	0558	0238	3.4F
	1212	0855	2.7E
	1637	1428	1.5F
		2039	4.3E
16 W	0016	0325	3.5F
	0650	0947	2.7E
	1309	1517	1.3F
	1719	2125	4.1E
17 Th	0103	0415	3.4F
	0741	1040	2.6E
	1410	1609	1.0F
	1804	2214	3.8E
18 F	0152	0506	3.2F
	0833	1136	2.5E
	1518	1706	0.8F
	1852	2307	3.4E
19 Sa	0245	0559	2.9F
	0925	1236	2.4E
	1633	1810	0.6F
	1948		
20 Su	0342	0005	2.9E
	1016	0655	2.5F
	1750	1339	2.4E
	2059	1924	0.5F
21 M ◑	0443	0111	2.4E
	1106	0755	2.1F
	1858	1442	2.5E
	2229	2042	0.6F
22 Tu	0549	0225	2.0E
	1154	0854	1.8F
	1953	1540	2.6E
		2156	0.8F
23 W	0006	0340	1.8E
	0656	0952	1.6F
	1237	1632	2.8E
	2037	2300	1.2F
24 Th	0132	0448	1.7E
	0801	1044	1.4F
	1317	1718	3.0E
	2116	2353	1.5F
25 F	0242	0548	1.7E
	0900	1132	1.2F
	1353	1758	3.2E
	2151		
26 Sa	0338	0037	1.9F
	0954	0639	1.8E
	1426	1214	1.1F
	2223	1834	3.3E
27 Su	0426	0117	2.1F
	1043	0725	1.9E
	1456	1253	1.0F
	2254	1908	3.3E
28 M	0507	0153	2.3F
	1129	0806	1.9E
	1525	1330	0.9F
	2324	1940	3.3E
29 Tu ●	0546	0228	2.5F
	1213	0845	2.0E
	1552	1405	0.7F
	2354	2012	3.3E
30 W	0623	0301	2.5F
	1258	0923	2.0E
	1618	1440	0.6F
		2043	3.2E

December

	Slack	Maximum	
	h m	h m	knots
1 Th	0025	0335	2.6F
	0659	1001	2.0E
	1345	1516	0.5F
	1644	2116	3.1E
2 F	0057	0409	2.5F
	0736	1040	2.0E
	1435	1554	0.3F
	1711	2150	3.0E
3 Sa	0132	0446	2.5F
	0813	1121	2.0E
		1637	*
		2229	2.8E
4 Su	0210	0525	2.3F
	0850	1205	2.0E
		1727	*
		2314	2.5E
5 M	0253	0608	2.2F
	0929	1253	2.1E
		1827	*
6 Tu	0341	0007	2.2E
	1009	0655	2.0F
	1815	1344	2.3E
	2100	1936	0.3F
7 W ◐	0438	0112	1.9E
	1050	0747	1.8F
	1857	1437	2.5E
	2248	2050	0.6F
8 Th	0542	0227	1.7E
	1133	0843	1.6F
	1938	1529	2.9E
		2159	1.1F
9 F	0029	0344	1.7E
	0652	0941	1.5F
	1217	1620	3.3E
	2020	2301	1.7F
10 Sa	0155	0456	1.8E
	0802	1039	1.4F
	1303	1710	3.7E
	2102	2356	2.3F
11 Su	0306	0601	2.0E
	0908	1134	1.4F
	1349	1759	4.0E
	2145		
12 M	0407	0048	2.9F
	1010	0700	2.2E
	1436	1228	1.4F
	2229	1846	4.2E
13 Tu ○	0502	0137	3.3F
	1108	0754	2.4E
	1523	1320	1.3F
	2314	1934	4.3E
14 W	0553	0225	3.5F
	1205	0846	2.5E
	1611	1411	1.2F
	2359	2021	4.3E
15 Th	0641	0313	3.6F
	1302	0937	2.6E
	1659	1502	1.1F
		2109	4.1E
16 F	0046	0359	3.5F
	0727	1027	2.6E
	1400	1555	1.0F
	1748	2157	3.8E
17 Sa	0133	0446	3.3F
	0812	1118	2.6E
	1502	1651	0.8F
	1839	2247	3.3E
18 Su	0221	0534	2.9F
	0855	1211	2.6E
	1607	1751	0.7F
	1936	2341	2.8E
19 M	0311	0623	2.5F
	0938	1304	2.6E
	1714	1857	0.6F
	2043		
20 Tu ◑	0405	0040	2.2E
	1019	0713	2.0F
	1818	1359	2.6E
	2205	2009	0.6F
21 W	0503	0146	1.8E
	1058	0805	1.7F
	1913	1454	2.7E
	2338	2121	0.8F
22 Th	0609	0259	1.5E
	1137	0900	1.3F
	2001	1546	2.8E
		2227	1.1F
23 F	0108	0412	1.3E
	0718	0954	1.1F
	1216	1634	2.9E
	2042	2323	1.4F
24 Sa	0222	0519	1.3E
	0827	1047	0.9F
	1254	1719	3.1E
	2120		
25 Su	0322	0011	1.8F
	0930	0616	1.5E
	1332	1136	0.8F
	2154	1759	3.2E
26 M	0410	0053	2.1F
	1025	0705	1.6E
	1409	1221	0.7F
	2227	1837	3.3E
27 Tu	0453	0131	2.3F
	1115	0748	1.7E
	1445	1302	0.6F
	2259	1913	3.3E
28 W ●	0531	0207	2.5F
	1200	0828	1.9E
	1519	1342	0.6F
	2331	1948	3.3E
29 Th	0607	0241	2.6F
	1243	0905	2.0E
	1554	1420	0.8F
		2022	3.3E
30 F	0003	0315	2.7F
	0640	0942	2.1E
	1324	1458	0.5F
	1630	2057	3.2E
31 Sa	0036	0348	2.7F
	0713	1018	2.2E
	1405	1538	0.5F
	1709	2133	3.1E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
* Current weak and variable.

The Narrows (north end), Puget Sound, Washington, 2016

F–Flood, Dir. 135° True E–Ebb, Dir. 335° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◑	0418 1051 1738 2254	0050 0720 1405 1954	2.2E 3.3F 2.4E 2.0F
2 Sa	0510 1129 1831	0146 0807 1453 2052	1.7E 2.9F 2.4E 2.1F
3 Su	0014 0608 1209 1923	0255 0858 1545 2154	1.3E 2.5F 2.5E 2.3F
4 M	0138 0713 1250 2012	0429 0951 1637 2254	1.1E 2.2F 2.7E 2.6F
5 Tu	0254 0818 1334 2059	0559 1045 1725 2350	1.2E 2.0F 2.9E 3.1F
6 W	0355 0919 1418 2143	0700 1138 1809	1.4E 1.9F 3.1E
7 Th	0446 1014 1502 2225	0040 0748 1229 1850	3.6F 1.7E 1.9F 3.4E
8 F	0529 1104 1545 2305	0126 0828 1316 1929	4.0F 1.9E 2.0F 3.7E
9 Sa ●	0608 1149 1628 2344	0209 0902 1402 2008	4.5F 2.1E 2.2F 4.0E
10 Su	0645 1231 1712	0250 0933 1447 2048	4.8F 2.3E 2.3F 4.1E
11 M	0023 0720 1313 1758	0331 1004 1532 2129	5.0F 2.6E 2.5F 4.2E
12 Tu	0103 0756 1356 1847	0413 1039 1619 2213	5.1F 2.8E 2.7F 4.1E
13 W	0144 0831 1440 1940	0455 1117 1707 2259	5.1F 3.0E 2.8F 3.9E
14 Th	0228 0908 1528 2039	0539 1159 1759 2349	4.8F 3.1E 2.9F 3.4E
15 F	0315 0946 1621 2147	0625 1244 1855	4.4F 3.3E 3.0F
16 Sa ◐	0407 1026 1718 2304	0046 0714 1335 1955	2.9E 3.9F 3.4E 3.1F
17 Su	0507 1111 1818	0150 0807 1432 2059	2.3E 3.4F 3.5E 3.2F
18 M	0031 0616 1159 1919	0308 0904 1534 2207	1.8E 2.9F 3.6E 3.5F
19 Tu	0200 0730 1253 2019	0447 1004 1642 2315	1.6E 2.5F 3.7E 3.6F
20 W	0319 0842 1351 2115	0617 1106 1748	1.8E 2.3F 3.9E
21 Th	0424 0947 1449 2208	0019 0723 1207 1848	4.2F 2.1E 2.3F 4.1E
22 F	0517 1045 1546 2257	0116 0817 1304 1940	4.5F 2.4E 2.3F 4.2E
23 Sa ○	0602 1137 1638 2343	0205 0904 1356 2027	4.7F 2.6E 2.4F 4.2E
24 Su	0643 1224 1727	0249 0946 1444 2108	4.8F 2.8E 2.6F 4.1E
25 M	0026 0719 1308 1814	0329 1023 1529 2146	4.8F 2.8E 2.6F 3.9E
26 Tu	0107 0753 1351 1858	0407 1056 1612 2222	4.6F 2.8E 2.7F 3.6E
27 W	0146 0824 1432 1943	0444 1126 1655 2258	4.4F 2.8E 2.6F 3.2E
28 Th	0224 0854 1514 2030	0522 1154 1739 2336	4.0F 2.7E 2.6F 2.8E
29 F	0303 0924 1557 2121	0601 1224 1825	3.7F 2.7E 2.5F
30 Sa	0344 0955 1644 2220	0017 0642 1259 1914	2.3E 3.2F 2.6E 2.5F
31 Su ◑	0429 1028 1734 2329	0104 0726 1340 2008	1.8E 2.7F 2.5E 2.4F

February

	Slack	Maximum	
	h m	h m	knots
1 M	0523 1105 1828	0200 0814 1428 2106	1.4E 2.3F 2.5E 2.5F
2 Tu	0048 0628 1148 1922	0311 0907 1522 2207	1.1E 1.9F 2.5E 2.6F
3 W	0209 0739 1237 2016	0455 1003 1622 2308	1.0E 1.7F 2.7E 3.0F
4 Th	0319 0846 1331 2107	0625 1101 1721 2.9E	1.2E 1.7F
5 F	0413 0945 1426 2154	0004 0719 1157 1815	3.4F 1.5E 1.8F 3.2E
6 Sa	0458 1036 1520 2239	0055 0759 1250 1904	3.9F 1.8E 2.0F 3.6F
7 Su	0537 1121 1613 2322	0142 0832 1339 1949	4.3F 2.2E 2.4F 3.9E
8 M ●	0612 1203 1704	0225 0903 1427 2034	4.7F 2.6E 2.8F 4.2E
9 Tu	0005 0647 1244 1755	0307 0936 1514 2118	5.0F 3.0E 3.1F 4.3E
10 W	0047 0720 1326 1848	0349 1011 1601 2204	5.1F 3.3E 3.5F 4.2E
11 Th	0131 0755 1410 1944	0432 1049 1650 2251	4.9F 3.6E 3.7F 3.9F
12 F	0215 0830 1457 2043	0515 1129 1741 2341	4.6F 3.8F 3.8F 3.5E
13 Sa	0303 0907 1548 2148	0601 1214 1835	4.2F 3.8E 3.6F
14 Su ◐	0355 0948 1644 2300	0037 0649 1304 1933	2.9E 3.6F 3.8E 3.7F
15 M	0455 1033 1746	0140 0741 1400 2036	2.3E 3.0F 3.6E 3.5F
16 Tu	0603 1126 1850	0022 0300 0839 1505 2144	1.8E 2.5F 3.5E 3.6F
17 W	0718 1227 1955	0147 0445 0942 1621 2255	1.6E 2.1F 3.4E 3.6F
18 Th	0830 1335 2056	0304 0609 1048 1739	1.8E 2.0F 3.5E
19 F	0935 1442 2152	0406 0002 0711 1154 1845	3.8F 2.1E 2.0F 3.6E
20 Sa	1031 1544 2242	0456 0059 0802 1253 1939	4.0F 2.5E 2.2F 3.7E
21 Su	1119 1638 2327	0537 0148 0846 1345 2025	4.2F 2.7E 2.5F 3.8E
22 M ○	1202 1727	0613 0229 0924 1430 2104	4.2F 2.9E 2.7F 3.7E
23 Tu	1242 1811	0009 0645 0306 0956 1511 2137	4.2F 3.0E 2.9F 3.5E
24 W	1320 1853	0048 0714 0341 1022 1551 2209	4.1F 3.0E 3.1F 3.3E
25 Th	1356 1934	0126 0741 0415 1044 1631 2240	3.9F 3.0E 3.2F 3.1E
26 F	1432 2017	0203 0807 0450 1107 1711 2314	3.6F 2.9E 3.2F 2.7E
27 Sa	1510 2103	0239 0833 0527 1135 1753 2352	3.3F 2.9E 3.1F 2.4E
28 Su	1550 2154	0318 0901 0607 1208 1839	2.9F 2.8E 3.0F
29 M		0401 0933 1636 2253	0034 0649 1247 1929	2.0E 2.5F 2.7E 2.9F

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑	0452 1009 1728	0124 0736 1332 2023	1.6E 2.1F 2.6E 2.8F
2 W	0002 0556 1053 1827	0225 0829 1425 2123	1.2F 1.7F 2.5E 2.8F
3 Th	0119 0708 1147 1928	0345 0927 1528 2225	1.1E 1.5F 2.5E 3.0F
4 F	0230 0817 1252 2026	0531 1028 1636 2325	1.2E 1.5F 2.7E 3.3F
5 Sa	0327 0916 1400 2120	0635 1128 1741	1.6E 1.8F 3.0E
6 Su	0414 1005 1505 2211	0020 0717 1225 1839	3.7F 2.0E 2.2F 3.4E
7 M	0453 1050 1605 2258	0110 0752 1317 1931	4.1F 2.5E 2.8F 3.8E
8 Tu ●	0529 1132 1701 2345	0156 0826 1407 2020	4.5F 3.0E 3.4F 4.0E
9 W	0604 1213 1756	0240 0901 1456 2107	4.7F 3.5E 3.9F 4.2E
10 Th	0030 0638 1256 1851	0323 0939 1544 2155	4.7F 3.9E 4.4F 4.1E
11 F	0116 0714 1340 1946	0406 1018 1632 2244	4.5F 4.2E 4.7F 3.8E
12 Sa	0203 0750 1427 2044	0450 1100 1723 2335	4.2F 4.3E 4.7F 3.4E
13 Su	0253 0829 1518 2145	0536 1145 1815	3.7F 4.2E 4.6F
14 M	0347 0912 1614 2253	0030 0625 1235 1911	2.8E 3.2F 4.0E 4.3F
15 Tu ◐	0447 1001 1715	0134 0719 1331 2012	2.3E 2.7F 3.6E 3.9F
16 W	0556 1059 1821	0006 0258 0818 1439 2118	1.9E 2.2F 3.2E 3.6F
17 Th	0709 1209 1928	0123 0436 0924 1604 2228	1.8E 1.9F 3.0E 3.4F
18 F	0818 1327 2032	0234 0551 1034 1731 2335	2.0E 1.8F 3.0E 3.4F
19 Sa	0919 1441 2129	0332 0649 1143 1838	2.3E 2.0F 3.1E
20 Su	1011 1545 2221	0419 0033 0737 1242 1932	3.5F 2.6E 2.3F 3.2E
21 M	1056 1639 2307	0458 0120 0818 1331 2017	3.6F 2.9E 2.7F 3.3E
22 Tu	1135 1726 2349	0531 0200 0853 1414 2055	3.6F 3.0E 3.0F 3.2E
23 W ○	1212 1808	0600 0235 0920 1452 2127	3.6F 3.1E 3.3F 3.2E
24 Th	1247 1848	0028 0627 0310 0941 1529 2156	3.5F 3.1E 3.5F 3.0E
25 F	1320 1927	0106 0652 0344 1001 1606 2225	3.3F 3.2E 3.7F 2.8E
26 Sa	1353 2007	0143 0717 0419 1025 1645 2257	3.1F 3.2E 3.7F 2.6E
27 Su	1427 2049	0220 0743 0456 1054 1725 2332	2.8F 3.1E 3.7F 2.3E
28 M	1504 2135	0300 0811 0535 1126 1809	2.5F 3.0E 3.6F
29 Tu	1545 2228	0344 0844 0012 0618 1204 1856	2.0E 2.1F 2.9E 3.4F
30 W	1639 2307	0435 0922 0059 0705 1248 1948 2327	1.7E 1.8F 2.7E 3.2F
31 Th ◑	1732	0537 1009 0155 0758 1341 2045	1.5E 1.5F 2.5E 3.1F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
NOTE–These predictions are for midstream. On the west side the current floods most of the time while on the east side it ebbs most of the time.

The Narrows (north end), Puget Sound, Washington, 2016

F–Flood, Dir. 135° True E–Ebb, Dir. 335° True

April

		Slack	Maximum	
		h m	h m	knots
1	F	0033	0305	1.3E
		0646	0857	1.4F
		1110	1444	2.4E
		1837	2145	3.2F
2	Sa	0137	0427	1.5E
		0750	1000	1.6F
		1224	1556	2.5E
		1942	2245	3.3F
3	Su	0233	0537	1.9E
		0846	1103	2.0F
		1343	1709	2.7E
		2043	2342	3.6F
4	M	0320	0626	2.4E
		0934	1202	2.6F
		1456	1815	3.0E
		2140		
5	Tu		0034	3.9F
		0401	0707	3.0E
		1019	1256	3.3F
		1601	1914	3.4E
		2233		
6	W		0123	4.1F
		0440	0747	3.5E
		1102	1348	4.0F
		1700	2007	3.7E
		2323		
7	Th		0209	4.2F
		0517	0826	4.1E
		1145	1437	4.7F
	●	1757	2058	3.8E
8	F	0012	0254	4.1F
		0554	0907	4.4E
		1228	1526	5.1F
		1851	2147	3.8E
9	Sa	0101	0340	3.9F
		0632	0948	4.7E
		1314	1615	5.4F
		1946	2237	3.5E
10	Su	0151	0426	3.6F
		0712	1032	4.6E
		1402	1705	5.3F
		2041	2329	3.2E
11	M	0243	0513	3.2F
		0754	1119	4.4E
		1452	1756	5.0F
		2139		
12	Tu		0026	2.8E
		0338	0604	2.8F
		0841	1209	4.0E
		1547	1850	4.6F
		2240		
13	W		0131	2.4E
		0440	0659	2.3F
		0934	1306	3.4E
	◐	1646	1948	4.1F
		2345		
14	Th		0251	2.1E
		0547	0759	2.0F
		1038	1414	2.9E
		1749	2050	3.6F
15	F	0050	0414	2.1E
		0655	0906	1.8F
		1156	1542	2.5E
		1855	2154	3.3F
16	Sa	0151	0522	2.3E
		0800	1018	1.8F
		1320	1712	2.5E
		1959	2257	3.1F
17	Su	0245	0617	2.6E
		0856	1126	2.1F
		1437	1820	2.5E
		2058	2353	3.1F
18	M	0329	0703	2.8E
		0945	1224	2.5F
		1541	1915	2.6E
		2152		
19	Tu		0041	3.0F
		0407	0742	3.0E
		1027	1312	2.9F
		1635	2001	2.7E
		2240		
20	W		0122	3.0F
		0439	0814	3.2E
		1105	1352	3.3F
		1721	2041	2.7E
		2324		
21	Th		0159	3.0F
		0509	0839	3.3E
		1141	1430	3.7F
	○	1803	2115	2.7E
22	F	0005	0235	2.9F
		0536	0659	3.3E
		1215	1506	3.9F
		1842	2145	2.6E
23	Sa	0045	0312	2.8F
		0603	0922	3.4E
		1247	1543	4.1F
		1920	2213	2.5E
24	Su	0124	0348	2.6F
		0629	0948	3.4E
		1320	1621	4.2F
		1958	2243	2.4E
25	M	0204	0427	2.4F
		0657	1019	3.3E
		1353	1701	4.1F
		2039	2318	2.2E
26	Tu	0246	0507	2.1F
		0728	1053	3.2E
		1429	1743	4.0F
		2122	2357	2.0E
27	W	0332	0551	1.9F
		0804	1131	3.1E
		1508	1829	3.9F
		2208		
28	Th		0042	1.9E
		0423	0639	1.6F
		0846	1216	2.9E
		1553	1918	3.7F
		2300		
29	F		0135	1.8E
		0522	0732	1.5F
		0938	1309	2.6E
	◑	1647	2012	3.5F
		2354		
30	Sa		0236	1.8E
		0623	0832	1.5F
		1045	1412	2.4E
		1751	2108	3.4F

May

		Slack	Maximum	
		h m	h m	knots
1	Su	0047	0342	2.0E
		0722	0935	1.8F
		1207	1524	2.3E
		1859	2206	3.4F
2	M	0138	0444	2.4E
		0815	1039	2.3F
		1333	1640	2.4E
		2006	2303	3.5F
3	Tu	0225	0538	2.9E
		0903	1139	3.0F
		1451	1753	2.6E
		2109	2357	3.5F
4	W	0308	0625	3.5E
		0949	1236	3.8F
		1559	1858	2.9E
		2207		
5	Th		0049	3.6F
		0350	0710	4.0E
		1035	1329	4.6F
		1700	1956	3.2E
		2302		
6	F		0138	3.6F
		0431	0754	4.5E
		1120	1420	5.2F
	●	1756	2050	3.3E
		2355		
7	Sa		0227	3.5F
		0512	0838	4.8E
		1206	1509	5.6F
		1850	2142	3.3E
8	Su	0046	0314	3.3F
		0555	0923	4.9E
		1252	1558	5.7F
		1943	2233	3.2E
9	M	0138	0402	3.1F
		0639	1009	4.7E
		1340	1647	5.6F
		2035	2325	3.0E
10	Tu	0231	0452	2.8F
		0725	1056	4.4E
		1430	1737	5.2F
		2128		
11	W		0021	2.7E
		0328	0544	2.5F
		0816	1147	3.9E
		1522	1828	4.7F
		2222		
12	Th		0122	2.5E
		0427	0639	2.1F
		0912	1242	3.3E
		1617	1921	4.2F
		2316		
13	F		0231	2.4E
		0530	0739	1.9F
		1019	1346	2.7E
	◐	1715	2017	3.7F
14	Sa	0010	0341	2.4E
		0633	0843	1.8F
		1138	1506	2.2E
		1817	2114	3.2F
15	Su	0102	0443	2.5E
		0732	0952	1.9F
		1303	1638	2.0E
		1919	2211	2.9F
16	M	0149	0536	2.7E
		0825	1058	2.2F
		1422	1751	2.0E
		2019	2305	2.7F
17	Tu	0231	0621	2.9E
		0912	1155	2.6F
		1529	1850	2.1E
		2116	2354	2.6F
18	W	0309	0659	3.1E
		0954	1244	3.1F
		1624	1939	2.2E
		2207		
19	Th		0039	2.5F
		0343	0730	3.3E
		1033	1326	3.5F
		1711	2022	2.3E
		2255		
20	F		0121	2.4F
		0415	0755	3.4E
		1110	1405	3.9F
		1753	2100	2.3E
		2340		
21	Sa		0201	2.4F
		0446	0820	3.5E
		1145	1443	4.1F
	○	1833	2133	2.3E
22	Su	0023	0240	2.3F
		0516	0847	3.5E
		1219	1521	4.3F
		1911	2203	2.3E
23	M	0105	0320	2.2F
		0547	0918	3.6E
		1253	1559	4.5F
		1949	2233	2.2E
24	Tu	0148	0400	2.1F
		0620	0951	3.5E
		1327	1639	4.5F
		2027	2306	2.2E
25	W	0231	0442	1.9F
		0655	1027	3.5E
		1403	1721	4.4F
		2107	2344	2.1E
26	Th	0317	0527	1.8F
		0736	1108	3.3E
		1442	1805	4.3F
		2148		
27	F		0026	2.1E
		0406	0616	1.7F
		0824	1153	3.1E
		1526	1852	4.1F
		2231		
28	Sa		0114	2.2E
		0459	0710	1.7F
		0922	1246	2.8E
		1616	1942	3.9F
		2316		
29	Su		0207	2.3E
		0555	0809	1.9F
		1034	1348	2.5E
	◑	1716	2036	3.7F
30	M	0002	0304	2.6E
		0650	0912	2.2F
		1159	1459	2.2E
		1823	2131	3.4F
31	Tu	0048	0401	2.9E
		0743	1015	2.7F
		1327	1616	2.1E
		1932	2228	3.3F

June

		Slack	Maximum	
		h m	h m	knots
1	W	0134	0457	3.4E
		0834	1118	3.4F
		1447	1736	2.2E
		2040	2324	3.1F
2	Th	0220	0550	3.9E
		0923	1217	4.1F
		1557	1848	2.4E
		2143		
3	F		0018	3.1F
		0306	0640	4.3E
		1012	1312	4.8F
		1659	1950	2.6E
		2242		
4	Sa		0111	3.0F
		0352	0729	4.7E
		1100	1404	5.3F
	●	1754	2046	2.8E
		2338		
5	Su		0202	3.0F
		0439	0817	4.9E
		1147	1454	5.6F
		1846	2138	2.9E
6	M	0031	0252	2.9F
		0526	0904	4.8E
		1235	1543	5.6F
		1936	2228	2.9E
7	Tu	0124	0342	2.7F
		0615	0951	4.6E
		1322	1630	5.5F
		2023	2318	2.9E
8	W	0217	0432	2.6F
		0704	1038	4.2E
		1410	1717	5.1F
		2110		
9	Th		0009	2.8E
		0310	0524	2.4F
		0757	1127	3.7E
		1458	1804	4.7F
		2155		
10	F		0101	2.7E
		0406	0617	2.2F
		0854	1218	3.1E
		1548	1852	4.2F
		2240		
11	Sa		0156	2.6E
		0503	0713	2.0F
		0958	1315	2.5E
		1640	1941	3.7F
		2324		
12	Su		0253	2.6E
		0600	0813	1.9F
		1112	1421	2.0E
	◐	1735	2031	3.2F
13	M	0008	0350	2.6E
		0655	0915	2.0F
		1234	1544	1.6E
		1834	2123	2.8F
14	Tu	0050	0442	2.7E
		0746	1018	2.3F
		1355	1710	1.5E
		1935	2215	2.5F
15	W	0130	0527	2.9E
		0834	1117	2.6F
		1506	1817	1.6E
		2036	2307	2.2F
16	Th	0210	0607	3.0E
		0918	1209	3.1F
		1605	1913	1.7E
		2132	2356	2.1F
17	F	0248	0642	3.2E
		1000	1256	3.5F
		1655	2000	1.8E
		2225		
18	Sa		0043	2.1F
		0326	0714	3.4E
		1039	1338	3.9F
		1738	2042	2.0E
		2314		
19	Su		0128	2.0F
		0403	0746	3.5E
		1117	1419	4.2F
		1818	2118	2.1E
		2359		
20	M		0211	2.0F
		0439	0819	3.6E
		1154	1458	4.5F
	○	1856	2149	2.1E
21	Tu	0043	0254	2.1F
		0516	0853	3.7E
		1230	1538	4.6F
		1932	2219	2.2E
22	W	0126	0336	2.1F
		0555	0930	3.7E
		1307	1618	4.7F
		2008	2250	2.3E
23	Th	0208	0420	2.1F
		0636	1009	3.7E
		1344	1659	4.7F
		2044	2325	2.4E
24	F	0252	0506	2.1F
		0723	1051	3.5E
		1423	1742	4.6F
		2121		
25	Sa		0004	2.5E
		0338	0556	2.1F
		0816	1138	3.3E
		1507	1827	4.4F
		2158		
26	Su		0048	2.7E
		0428	0649	2.2F
		0918	1231	2.9E
		1555	1915	4.0F
		2238		
27	M		0136	2.9E
		0521	0747	2.4F
		1031	1331	2.5E
	◑	1651	2006	3.7F
		2319		
28	Tu		0229	3.1E
		0616	0849	2.7F
		1155	1440	2.1E
		1756	2100	3.3F
29	W	0003	0325	3.4E
		0712	0953	3.2F
		1322	1559	1.8E
		1907	2156	3.0F
30	Th	0051	0424	3.7E
		0807	1057	3.7F
		1444	1726	1.8E
		2018	2254	2.7F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
NOTE–These predictions are for midstream. On the west side the current floods most of the time while on the east side it ebbs most of the time.

The Narrows (north end), Puget Sound, Washington, 2016

F–Flood, Dir. 135° True E–Ebb, Dir. 335° True

July

		Slack	Maximum	
		h m	h m	knots
1	F	0141	0522	4.0E
		0901	1159	4.2F
		1555	1845	2.0E
		2125	2352	2.6F
2	Sa	0233	0619	4.3E
		0953	1257	4.7F
		1655	1949	2.3E
		2226		
3	Su		0049	2.6F
		0326	0713	4.6E
		1044	1350	5.1F
		1748	2043	2.6E
		2323		
4	M ●		0143	2.6F
		0419	0804	4.6E
		1133	1440	5.3F
		1837	2133	2.7E
5	Tu	0016	0234	2.6F
		0510	0852	4.6E
		1220	1526	5.3F
		1921	2219	2.8E
6	W	0106	0324	2.6F
		0601	0939	4.4E
		1306	1611	5.2F
		2003	2303	2.9E
7	Th	0156	0413	2.6F
		0652	1023	4.0E
		1350	1654	4.9F
		2042	2345	2.8E
8	F	0245	0502	2.5F
		0743	1108	3.5E
		1435	1737	4.5F
		2120		
9	Sa		0026	2.8E
		0334	0551	2.4F
		0837	1153	3.0E
		1519	1819	4.0F
		2157		
10	Su		0107	2.7E
		0424	0642	2.3F
		0935	1241	2.4E
		1605	1903	3.5F
		2234		
11	M ◐		0150	2.6E
		0516	0736	2.2F
		1041	1335	1.9E
		1655	1949	3.0F
		2311		
12	Tu		0235	2.6E
		0608	0833	2.2F
		1155	1440	1.5E
		1750	2038	2.6F
		2349		
13	W		0325	2.6E
		0700	0932	2.4F
		1315	1607	1.2E
		1852	2129	2.2F
14	Th	0030	0416	2.7E
		0751	1032	2.6F
		1432	1738	1.2E
		1956	2223	2.0F
15	F	0114	0507	2.8E
		0839	1129	3.0F
		1537	1843	1.4E
		2058	2317	1.8F
16	Sa	0159	0554	3.0E
		0926	1222	3.4F
		1630	1935	1.6E
		2155		
17	Su		0009	1.8F
		0245	0637	3.2E
		1009	1309	3.8F
		1715	2017	1.8E
		2246		
18	M		0058	1.9F
		0330	0717	3.5E
		1051	1353	4.1F
		1754	2053	2.0E
		2332		
19	Tu ○		0145	2.0F
		0414	0755	3.7E
		1130	1434	4.4F
		1830	2124	2.2E
20	W	0015	0230	2.2F
		0457	0834	3.8E
		1209	1514	4.7F
		1904	2152	2.4E
21	Th	0057	0314	2.4F
		0542	0913	3.9E
		1247	1554	4.8F
		1938	2223	2.6E
22	F	0137	0400	2.6F
		0629	0955	3.9E
		1327	1635	4.8F
		2011	2257	2.8E
23	Sa	0219	0446	2.8F
		0720	1039	3.7E
		1408	1717	4.6F
		2045	2335	3.0E
24	Su	0304	0536	2.9F
		0816	1126	3.4E
		1452	1801	4.3F
		2120		
25	M		0017	3.2E
		0352	0628	3.0F
		0919	1219	3.0E
		1540	1848	3.9F
		2157		
26	Tu ◑		0103	3.4E
		0445	0725	3.2F
		1030	1318	2.5E
		1635	1938	3.5F
		2239		
27	W		0155	3.5E
		0542	0826	3.3F
		1151	1427	2.0E
		1740	2032	3.0F
		2325		
28	Th		0253	3.6E
		0642	0931	3.5F
		1316	1551	1.7E
		1851	2131	2.6F
29	F	0016	0357	3.7E
		0743	1037	3.8F
		1437	1727	1.7E
		2004	2232	2.4F
30	Sa	0114	0504	3.9E
		0842	1142	4.1F
		1547	1844	1.9E
		2113	2334	2.3F
31	Su	0215	0609	4.0E
		0938	1243	4.4F
		1645	1944	2.3E
		2214		

August

		Slack	Maximum	
		h m	h m	knots
1	M		0034	2.4F
		0315	0708	4.2E
		1030	1336	4.7F
		1734	2035	2.6E
		2309		
2	Tu ●		0129	2.5F
		0413	0800	4.3E
		1119	1424	4.8F
		1817	2119	2.8E
		2358		
3	W		0221	2.7F
		0506	0847	4.2E
		1205	1508	4.8F
		1856	2200	2.9E
4	Th	0045	0309	2.8F
		0557	0930	4.0E
		1249	1548	4.7F
		1931	2236	3.0E
5	F	0129	0354	2.9F
		0645	1010	3.7E
		1331	1627	4.4F
		2005	2309	2.9E
6	Sa	0212	0439	2.9F
		0733	1049	3.3E
		1411	1706	4.1F
		2037	2340	2.9E
7	Su	0255	0523	2.8F
		0821	1128	2.9E
		1452	1745	3.7F
		2108		
8	M		0011	2.8E
		0339	0609	2.7F
		0913	1209	2.4E
		1534	1826	3.2F
		2139		
9	Tu		0046	2.7E
		0425	0658	2.7F
		1010	1256	1.9E
		1620	1909	2.8F
		2212		
10	W ◐		0126	2.6E
		0514	0750	2.6F
		1115	1350	1.5E
		1713	1956	2.3F
		2249		
11	Th		0212	2.6E
		0607	0846	2.6F
		1230	1500	1.2E
		1815	2048	1.9F
		2332		
12	F		0306	2.5F
		0702	0946	2.6F
		1347	1644	1.0E
		1922	2144	1.7F
13	Sa	0021	0406	2.6E
		0757	1047	2.9F
		1457	1809	1.2E
		2028	2242	1.6F
14	Su	0116	0506	2.7E
		0849	1144	3.2F
		1553	1903	1.5E
		2126	2338	1.7F
15	M	0212	0601	3.0E
		0937	1236	3.6F
		1638	1945	1.8E
		2217		
16	Tu		0031	2.0F
		0307	0650	3.3E
		1022	1322	4.0F
		1717	2018	2.1E
		2302		
17	W		0121	2.3F
		0358	0734	3.6E
		1105	1405	4.3F
		1752	2047	2.4E
		2344		
18	Th ○		0208	2.6F
		0448	0816	3.8E
		1147	1447	4.6F
		1825	2116	2.8E
19	F	0023	0253	3.0F
		0538	0859	4.0E
		1228	1527	4.7F
		1857	2148	3.1E
20	Sa	0103	0339	3.4F
		0629	0942	4.0E
		1310	1609	4.6F
		1929	2223	3.4E
21	Su	0144	0426	3.7F
		0721	1028	3.8E
		1353	1651	4.4F
		2003	2302	3.7E
22	M	0228	0516	3.9F
		0818	1116	3.4E
		1439	1735	4.1F
		2038	2344	3.8E
23	Tu	0317	0607	3.9F
		0919	1209	3.0E
		1529	1822	3.6F
		2117		
24	W ◑		0031	3.8E
		0410	0703	3.9F
		1028	1308	2.4E
		1626	1913	3.1F
		2201		
25	Th		0124	3.7E
		0510	0804	3.8F
		1144	1420	1.9E
		1732	2009	2.6F
		2252		
26	F		0225	3.5E
		0614	0909	3.7F
		1305	1563	1.7E
		1845	2111	2.2F
		2352		
27	Sa		0337	3.4E
		0719	1017	3.7F
		1423	1728	1.8E
		1957	2217	2.1F
28	Su	0100	0456	3.5F
		0823	1125	3.9F
		1529	1836	2.1E
		2104	2323	2.1F
29	M	0211	0609	3.6E
		0921	1226	4.0F
		1622	1931	2.5E
		2202		
30	Tu		0025	2.4F
		0317	0709	3.7E
		1015	1319	4.2F
		1707	2017	2.8E
		2252		
31	W		0120	2.6F
		0416	0800	3.8E
		1104	1404	4.2F
		1745	2057	3.0E
		2338		

September

		Slack	Maximum	
		h m	h m	knots
1	Th ●		0209	2.9F
		0509	0844	3.8E
		1148	1444	4.2F
		1819	2132	3.1E
2	F	0019	0253	3.1F
		0556	0923	3.6E
		1230	1521	4.1F
		1851	2202	3.1E
3	Sa	0059	0334	3.3F
		0641	0957	3.4E
		1310	1557	3.9F
		1920	2227	3.1E
4	Su	0136	0414	3.4F
		0724	1031	3.1E
		1349	1633	3.6F
		1947	2252	3.0E
5	M	0213	0455	3.4F
		0808	1105	2.7E
		1428	1710	3.2F
		2015	2320	3.0E
6	Tu	0252	0537	3.3F
		0853	1142	2.4E
		1508	1750	2.8F
		2043	2352	2.8E
7	W	0332	0622	3.1F
		0943	1224	2.0E
		1553	1832	2.4F
		2115		
8	Th		0030	2.7E
		0418	0711	3.0F
		1041	1313	1.6E
		1645	1919	2.0F
		2152		
9	F ◐		0115	2.5E
		0509	0804	2.8F
		1147	1414	1.3E
		1747	2012	1.7F
		2237		
10	Sa		0208	2.4E
		0607	0903	2.8F
		1259	1538	1.1E
		1856	2110	1.5F
		2333		
11	Su		0311	2.3E
		0708	1004	2.9F
		1408	1724	1.3E
		2002	2211	1.5F
12	M	0039	0419	2.4E
		0807	1104	3.1F
		1504	1822	1.6E
		2059	2311	1.7F
13	Tu	0147	0525	2.7E
		0901	1158	3.5F
		1550	1901	2.0E
		2148		
14	W		0006	2.1F
		0251	0623	3.0E
		0951	1247	3.8F
		1629	1933	2.4E
		2231		
15	Th		0058	2.7F
		0349	0713	3.4E
		1038	1333	4.1F
		1704	2004	2.9E
		2311		
16	F ○		0146	3.3F
		0444	0800	3.7E
		1123	1416	4.3F
		1737	2036	3.4E
		2350		
17	Sa		0233	3.8F
		0536	0845	3.9E
		1207	1458	4.4F
		1810	2111	3.8E
18	Su	0030	0320	4.3F
		0629	0931	3.9E
		1252	1540	4.3F
		1844	2149	4.1E
19	M	0112	0407	4.7F
		0722	1018	3.7E
		1338	1624	4.0F
		1919	2230	4.3E
20	Tu	0157	0456	4.8F
		0818	1108	3.4E
		1427	1709	3.6F
		1958	2314	4.3E
21	W	0246	0547	4.7F
		0917	1201	2.9E
		1520	1758	3.2F
		2040		
22	Th		0002	4.1E
		0340	0642	4.5F
		1022	1302	2.4E
		1620	1851	2.7F
		2128		
23	F ◑		0057	3.7E
		0440	0742	4.2F
		1133	1418	2.0E
		1727	1949	2.2F
		2226		
24	Sa		0201	3.4E
		0546	0846	3.8F
		1247	1554	1.9E
		1840	2055	2.0F
		2336		
25	Su		0321	3.0E
		0654	0954	3.6F
		1357	1716	2.1E
		1950	2205	1.9F
26	M	0056	0451	3.0E
		0800	1102	3.6F
		1457	1817	2.4E
		2052	2315	2.1F
27	Tu	0215	0607	3.1E
		0900	1202	3.6F
		1547	1908	2.8E
		2145		
28	W		0018	2.5F
		0323	0706	3.2E
		0965	1253	3.6F
		1628	1951	3.1E
		2232		
29	Th		0110	2.9F
		0421	0755	3.3E
		1044	1336	3.6F
		1704	2028	3.2E
		2314		
30	F ●		0155	3.2F
		0511	0837	3.3E
		1128	1414	3.6F
		1735	2058	3.3E
		2352		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
NOTE–These predictions are for midstream. On the west side the current floods most of the time while on the east side it ebbs most of the time.

The Narrows (north end), Puget Sound, Washington, 2016

F–Flood, Dir. 135° True E–Ebb, Dir. 335° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa	0555	0235	3.5F
	1210	0914	3.2E
	1804	1450	3.4F
		2123	3.3E
2 Su	0027	0313	3.7F
	0637	0946	3.0E
	1249	1525	3.2F
	1830	2144	3.3E
3 M	0102	0350	3.8F
	0716	1016	2.8E
	1328	1600	3.0F
	1856	2208	3.3E
4 Tu	0135	0428	3.9F
	0756	1047	2.5E
	1407	1637	2.7F
	1923	2236	3.2E
5 W	0210	0508	3.8F
	0838	1121	2.3E
	1448	1717	2.4F
	1951	2308	3.0E
6 Th	0246	0551	3.6F
	0923	1200	2.0E
	1533	1759	2.0F
	2024	2346	2.8E
7 F	0327	0637	3.4F
	1014	1246	1.7E
	1625	1847	1.7F
	2102		
8 Sa ◐	0415	0029	2.6E
	1111	0728	3.2F
	1727	1342	1.4E
	2150	1940	1.4F
9 Su	0511	0121	2.4E
	1214	0824	3.1F
	1834	1452	1.4E
	2251	2039	1.3F
10 M	0615	0223	2.2E
	1315	0923	3.1F
	1936	1616	1.5E
		2141	1.5F
11 Tu	0006	0335	2.2E
	0719	1022	3.2F
	1409	1722	1.9E
	2030	2244	1.8F
12 W	0127	0448	2.4E
	0820	1118	3.4F
	1455	1807	2.3E
	2116	2342	2.4F
13 Th	0239	0554	2.7E
	0916	1209	3.6F
	1535	1845	2.9E
	2158		
14 F	0343	0035	3.1F
	1009	0652	3.1E
	1612	1257	3.8F
	2239	1921	3.4E
15 Sa ○	0440	0125	3.9F
	1059	0744	3.4E
	1648	1343	3.9F
	2320	1959	4.0E
16 Su	0535	0213	4.6F
	1147	0833	3.6E
	1724	1428	3.9F
		2038	4.4E
17 M	0002	0301	5.1F
	0628	0921	3.6E
	1235	1513	3.8F
	1801	2119	4.7E
18 Tu	0046	0349	5.4F
	0721	1010	3.5E
	1324	1558	3.5F
	1840	2202	4.7E
19 W	0132	0438	5.5F
	0816	1101	3.2E
	1416	1646	3.2F
	1922	2248	4.6E
20 Th	0222	0529	5.3F
	0912	1156	2.8E
	1511	1736	2.8F
	2009	2338	4.2E
21 F	0315	0622	4.9F
	1012	1258	2.5E
	1612	1831	2.4F
	2102		
22 Sa ◑	0413	0034	3.7E
	1114	0719	4.4F
	1719	1414	2.2E
	2206	1931	2.0F
23 Su	0517	0139	3.1E
	1218	0820	3.9F
	1828	1539	2.2E
	2324	2038	1.8F
24 M	0624	0302	2.7E
	1320	0924	3.5F
	1934	1651	2.4E
		2151	1.9F
25 Tu	0052	0437	2.5F
	0730	1028	3.3F
	1415	1749	2.7E
	2033	2303	2.2F
26 W	0214	0554	2.5E
	0832	1127	3.2F
	1501	1838	3.0E
	2123		
27 Th	0323	0005	2.6F
	0928	0653	2.6E
	1541	1217	3.1F
	2207	1919	3.3E
28 F	0420	0055	3.1F
	1019	0743	2.7E
	1616	1301	3.0F
	2247	1954	3.4E
29 Sa	0509	0137	3.5F
	1105	0826	2.8E
	1647	1340	2.9F
	2323	2022	3.5E
30 Su ●	0551	0215	3.8F
	1148	0903	2.7E
	1715	1417	2.8F
	2358	2044	3.5E
31 M	0631	0251	4.0F
	1229	0936	2.6E
	1743	1453	2.7F
		2107	3.5E

November

	Slack	Maximum	
	h m	h m	knots
1 Tu	0031	0328	4.2F
	0709	1005	2.5E
	1309	1530	2.5F
	1810	2132	3.5E
2 W	0104	0405	4.2F
	0747	1034	2.3E
	1349	1608	2.3F
	1838	2202	3.4E
3 Th	0137	0444	4.2F
	0826	1106	2.2E
	1431	1648	2.1F
	1909	2235	3.2E
4 F	0212	0525	4.1F
	0907	1143	2.0E
	1517	1731	1.8F
	1943	2312	3.0E
5 Sa	0249	0609	3.9F
	0952	1226	1.8E
	1608	1819	1.6F
	2024	2355	2.8E
6 Su	0332	0657	3.7F
	1040	1316	1.7E
	1706	1911	1.4F
	2115		
7 M ◐	0423	0045	2.5E
	1131	0749	3.5F
	1806	1414	1.7E
	2220	2010	1.4F
8 Tu	0523	0145	2.2E
	1222	0844	3.3F
	1904	1518	1.9E
	2341	2112	1.6F
9 W	0630	0255	2.1E
	1311	0940	3.2F
	1956	1620	2.3E
		2216	2.1F
10 Th	0109	0412	2.1E
	0737	1037	3.2F
	1357	1712	2.8E
	2043	2316	2.8F
11 F	0229	0526	2.3E
	0841	1131	3.3F
	1439	1759	3.3E
	2127		
12 Sa	0337	0012	3.6F
	0940	0632	2.6E
	1520	1222	3.4F
	2211	1843	3.9E
13 Su	0437	0105	4.4F
	1035	0730	2.9E
	1601	1311	3.4F
	2255	1927	4.4E
14 M ○	0533	0155	5.1F
	1128	0824	3.1E
	1642	1400	3.4F
	2339	2010	4.8E
15 Tu	0626	0244	5.6F
	1219	0914	3.2E
	1725	1447	3.3F
		2055	5.0E
16 W	0025	0333	5.8F
	0718	1005	3.2E
	1311	1536	3.1F
	1809	2141	5.0E
17 Th	0113	0422	5.8F
	0810	1056	3.1E
	1403	1625	2.9F
	1856	2228	4.7E
18 F	0202	0511	5.5F
	0901	1150	2.9E
	1459	1717	2.6F
	1947	2319	4.2E
19 Sa	0254	0602	5.1F
	0954	1249	2.7E
	1558	1812	2.3F
	2043		
20 Su	0348	0013	3.6E
	1048	0655	4.5F
	1701	1356	2.5E
	2149	1912	2.0F
21 M ◑	0446	0116	2.9E
	1142	0750	4.0F
	1806	1507	2.5E
	2309	2017	1.9F
22 Tu	0548	0232	2.3E
	1234	0848	3.4F
	1908	1614	2.6E
		2127	2.0F
23 W	0037	0407	2.0E
	0652	0946	3.0F
	1323	1711	2.9E
	2004	2237	2.2F
24 Th	0202	0529	2.0E
	0755	1042	2.8F
	1408	1800	3.1E
	2053	2339	2.7F
25 F	0314	0632	2.0E
	0855	1134	2.6F
	1448	1842	3.3E
	2137		
26 Sa	0413	0031	3.1F
	0949	0725	2.1E
	1525	1221	2.5F
	2218	1917	3.4E
27 Su	0502	0114	3.5F
	1039	0810	2.2E
	1559	1304	2.4F
	2255	1945	3.5E
28 M	0544	0153	3.9F
	1125	0851	2.3E
	1630	1344	2.3F
	2331	2011	3.6E
29 Tu ●	0623	0230	4.2F
	1208	0926	2.3E
	1701	1424	2.3F
		2037	3.6E
30 W	0006	0307	4.4F
	0700	0957	2.3E
	1250	1503	2.2F
	1732	2105	3.6E

December

	Slack	Maximum	
	h m	h m	knots
1 Th	0040	0344	4.5F
	0736	1025	2.2E
	1331	1543	2.1F
	1805	2137	3.6E
2 F	0113	0422	4.5F
	0812	1054	2.2F
	1413	1624	1.9F
	1839	2211	3.5E
3 Sa	0148	0502	4.4F
	0849	1128	2.1E
	1457	1708	1.8F
	1918	2249	3.3E
4 Su	0224	0545	4.3F
	0928	1206	2.1E
	1545	1755	1.7F
	2002	2331	3.0E
5 M	0303	0629	4.1F
	1008	1250	2.1E
	1636	1846	1.7F
	2056		
6 Tu	0349	0020	2.7E
	1049	0717	3.8F
	1730	1339	2.2E
	2203	1943	1.7F
7 W ◐	0443	0117	2.4E
	1133	0808	3.5F
	1824	1432	2.4E
	2325	2044	2.0F
8 Th	0547	0224	2.0E
	1217	0902	3.3F
	1917	1528	2.8E
		2147	2.5F
9 F	0055	0340	1.9E
	0657	0958	3.1F
	1302	1625	3.2E
	2008	2250	3.1F
10 Sa	0219	0501	1.9E
	0808	1054	3.0F
	1348	1719	3.7E
	2058	2350	3.9F
11 Su	0332	0617	2.1E
	0914	1150	2.9F
	1435	1811	4.2E
	2146		
12 M	0434	0046	4.6F
	1015	0723	2.4E
	1523	1243	2.9F
	2234	1901	4.6E
13 Tu ○	0530	0139	5.2F
	1111	0819	2.7E
	1611	1336	2.9F
	2322	1950	4.9E
14 W	0622	0229	5.6F
	1205	0911	2.9E
	1700	1427	2.9F
		2038	5.0E
15 Th	0010	0318	5.8F
	0711	1001	3.0E
	1257	1517	2.9F
	1749	2126	4.9E
16 F	0058	0406	5.8F
	0758	1049	3.0E
	1348	1607	2.8F
	1840	2214	4.6E
17 Sa	0146	0453	5.5F
	0844	1138	3.0E
	1441	1659	2.6F
	1933	2303	4.1E
18 Su	0234	0540	5.0F
	0929	1229	2.9E
	1536	1752	2.4F
	2030	2354	3.5E
19 M	0323	0628	4.5F
	1013	1322	2.8E
	1633	1848	2.3F
	2133		
20 Tu ◑	0415	0049	2.8E
	1058	0717	3.9F
	1731	1420	2.7E
	2246	1947	2.1F
21 W	0510	0153	2.2E
	1142	0807	3.3F
	1829	1520	2.7E
		2051	2.1F
22 Th	0009	0315	1.7E
	0610	0859	2.8F
	1226	1618	2.8E
	1925	2156	2.3F
23 F	0135	0450	1.5E
	0713	0953	2.4F
	1309	1711	2.9E
	2016	2300	2.6F
24 Sa	0253	0603	1.5E
	0817	1047	2.2F
	1352	1757	3.0E
	2103	2357	3.0F
25 Su	0356	0702	1.6E
	0916	1139	2.0F
	1434	1836	3.2E
	2146		
26 M	0447	0045	3.4F
	1011	0751	1.8E
	1514	1228	2.0F
	2227	1911	3.3E
27 Tu	0530	0128	3.8F
	1100	0834	2.0E
	1552	1314	2.0F
	2306	1942	3.5E
28 W ●	0609	0208	4.1F
	1146	0912	2.1E
	1630	1357	2.0F
	2343	2013	3.6E
29 Th	0644	0246	4.4F
	1228	0944	2.2E
	1707	1439	2.1F
		2045	3.7E
30 F	0019	0324	4.5F
	0719	1011	2.2E
	1310	1521	2.1F
	1745	2119	3.7E
31 Sa	0054	0402	4.6F
	0752	1038	2.3E
	1350	1603	2.1F
	1824	2154	3.6E

Time meridian 120° W. 0000 is midnight. 1200 is noon Times are not adjusted for Daylight Saving Time.
NOTE–These predictions are for midstream. On the west side the current floods most of the time while on the east side it ebbs most of the time.

Deception Pass (Narrows), Washington, 2016

F–Flood, Dir. 090° True E–Ebb, Dir. 270° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◑	0141	0505	5.4F
	0826	1123	6.6E
	1517	1746	4.4F
	2102	2337	5.5E
2 Sa	0238	0556	4.9F
	0912	1213	6.5E
	1610	1843	4.5F
	2214		
3 Su		0036	5.2E
	0347	0651	4.6F
	1000	1306	6.4E
	1701	1941	4.7F
	2322		
4 M		0137	5.2E
	0502	0747	4.3F
	1051	1358	6.5E
	1750	2037	5.0F
5 Tu	0023	0238	5.3E
	0612	0843	4.2F
	1141	1450	6.6E
	1835	2130	5.4F
6 W	0116	0335	5.6E
	0714	0937	4.2F
	1230	1539	6.8E
	1917	2218	5.8F
7 Th	0204	0428	6.0E
	0808	1028	4.3F
	1316	1626	7.0E
	1956	2304	6.2F
8 F	0248	0516	6.3E
	0856	1115	4.5F
	1359	1712	7.2E
	2033	2347	6.5F
9 Sa ●	0328	0601	6.7E
	0939	1201	4.7F
	1440	1755	7.3E
	2110		
10 Su		0028	6.7F
	0406	0644	7.0E
	1020	1245	4.8F
	1521	1839	7.4E
	2146		
11 M		0110	6.8F
	0443	0726	7.2E
	1058	1328	5.0F
	1603	1922	7.5E
	2224		
12 Tu		0152	6.9F
	0520	0808	7.3E
	1136	1413	5.1F
	1648	2007	7.4E
	2304		
13 W		0234	6.8F
	0557	0851	7.4E
	1216	1459	5.2F
	1737	2054	7.3E
	2347		
14 Th		0319	6.6F
	0635	0935	7.4E
	1258	1547	5.3F
	1830	2143	7.0E
15 F	0034	0405	6.3F
	0716	1022	7.4E
	1345	1639	5.3F
	1931	2237	6.7E

	Slack	Maximum	
	h m	h m	knots
16 Sa ◐	0126	0456	5.9F
	0800	1112	7.3E
	1438	1736	5.3F
	2042	2335	6.3E
17 Su	0227	0551	5.4F
	0848	1206	7.2E
	1537	1836	5.4F
	2201		
18 M	0343	0038	6.0E
	0944	0650	5.0F
	1640	1304	7.1E
	2320	1940	5.6F
19 Tu	0510	0146	5.9E
	1045	0754	4.7F
	1743	1403	7.1E
		2045	5.9F
20 W	0032	0255	5.9E
	0631	0858	4.5F
	1150	1504	7.2E
	1842	2147	6.2F
21 Th	0134	0402	6.2E
	0740	1000	4.6F
	1253	1601	7.3E
	1937	2244	6.5F
22 F	0228	0501	6.6E
	0837	1058	4.8F
	1351	1656	7.4E
	2027	2335	6.7F
23 Sa ○	0316	0552	6.9E
	0928	1150	5.0F
	1444	1745	7.5E
	2114		
24 Su		0021	6.9F
	0359	0637	7.1E
	1013	1237	5.2F
	1532	1832	7.6E
	2157		
25 M		0103	6.9F
	0439	0718	7.3E
	1054	1321	5.3F
	1618	1916	7.5E
	2237		
26 Tu		0143	6.8F
	0516	0757	7.3E
	1133	1403	5.4F
	1701	1958	7.3E
	2314		
27 W		0223	6.6F
	0551	0835	7.3E
	1210	1445	5.3F
	1743	2040	7.1E
	2350		
28 Th		0302	6.3F
	0624	0914	7.2E
	1247	1527	5.2F
	1826	2123	6.8E
29 F	0026	0342	5.9F
	0656	0954	7.0E
	1325	1611	5.1F
	1912	2208	6.3E
30 Sa	0103	0425	5.4F
	0729	1037	6.8E
	1405	1659	4.9F
	2005	2256	5.9E
31 Su ◑	0146	0511	4.9F
	0805	1123	6.5E
	1451	1750	4.7F
	2108	2349	5.4E

February

	Slack	Maximum	
	h m	h m	knots
1 M	0240	0602	4.4F
	0847	1214	6.3E
	1546	1847	4.6F
	2223		
2 Tu		0049	5.1E
	0357	0700	3.9F
	0939	1309	8.1E
	1647	1949	4.7F
	2339		
3 W		0154	5.0E
	0534	0802	3.6F
	1043	1407	6.1E
	1748	2050	5.0F
4 Th	0044	0300	5.2E
	0652	0905	3.6F
	1151	1506	6.2E
	1843	2148	5.4F
5 F	0138	0402	5.7E
	0752	1004	3.9F
	1252	1601	6.5E
	1931	2239	5.9F
6 Sa	0224	0454	6.2E
	0839	1056	4.4F
	1345	1651	6.9E
	2015	2325	6.3F
7 Su	0305	0540	6.7E
	0920	1143	4.8F
	1432	1738	7.3E
	2056		
8 M ●		0008	6.7F
	0342	0622	7.2E
	0956	1227	5.3F
	1516	1823	7.6E
	2135		
9 Tu		0050	6.9F
	0417	0703	7.5E
	1030	1309	5.7F
	1559	1907	7.8E
	2215		
10 W		0131	7.0F
	0452	0743	7.8E
	1105	1352	6.0F
	1643	1950	7.9E
	2255		
11 Th		0212	7.0F
	0526	0823	7.9E
	1141	1435	6.1F
	1729	2036	7.8E
	2336		
12 F		0254	6.8F
	0602	0906	7.9E
	1220	1521	6.2F
	1818	2123	7.5E
13 Sa	0021	0339	6.4F
	0640	0950	7.8E
	1303	1610	6.1F
	1914	2213	7.1E
14 Su ◐	0110	0427	5.9F
	0721	1038	7.5E
	1353	1704	5.9F
	2018	2309	6.6E
15 M	0209	0521	5.2F
	0808	1132	7.2E
	1451	1804	5.7F
	2134		

	Slack	Maximum	
	h m	h m	knots
16 Tu		0012	6.0E
	0326	0622	4.6F
	0906	1231	6.8E
	1602	1911	5.5F
	2258		
17 W		0122	5.7E
	0503	0731	4.1F
	1020	1337	6.6E
	1718	2022	5.6F
18 Th	0016	0239	5.7E
	0629	0844	4.0F
	1142	1445	6.6E
	1828	2133	5.8F
19 F	0120	0356	6.0E
	0736	0955	4.3F
	1255	1551	6.7E
	1929	2235	6.1F
20 Sa	0213	0458	6.5E
	0830	1055	4.7F
	1355	1649	7.0E
	2021	2325	6.4F
21 Su	0258	0543	6.9E
	0914	1143	5.2F
	1446	1738	7.3E
	2107		
22 M ○		0007	6.6F
	0338	0621	7.2E
	0953	1225	5.5F
	1531	1821	7.4E
	2147		
23 Tu		0045	6.6F
	0413	0655	7.4E
	1028	1303	5.8F
	1611	1900	7.5E
	2224		
24 W		0121	6.6F
	0445	0729	7.5E
	1100	1340	5.9F
	1648	1938	7.4E
	2258		
25 Th		0156	6.4F
	0515	0803	7.5E
	1130	1417	5.9F
	1724	2016	7.3E
	2329		
26 F		0232	6.2F
	0542	0839	7.4E
	1159	1454	5.8F
	1800	2055	7.0E
27 Sa	0000	0309	5.8F
	0609	0915	7.2E
	1228	1534	5.6F
	1837	2136	6.6E
28 Su	0032	0348	5.3F
	0637	0954	6.9E
	1259	1617	5.3F
	1920	2220	6.2E
29 M	0110	0431	4.7F
	0708	1037	6.5E
	1337	1705	5.0F
	2013	2311	5.6E

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑	0158	0520	4.0F
	0746	1126	6.1E
	1424	1800	4.7F
	2124		
2 W		0010	5.1E
	0311	0620	3.4F
	0836	1224	5.7E
	1528	1904	4.6F
	2250		
3 Th		0117	4.9E
	0509	0729	3.1F
	0949	1329	5.5E
	1650	2012	4.7F
4 F	0006	0228	5.1E
	0634	0839	3.2F
	1124	1435	5.7E
	1806	2116	5.1F
5 Sa	0105	0333	5.7E
	0730	0942	3.8F
	1239	1536	6.2E
	1905	2212	5.7F
6 Su	0152	0427	6.3E
	0813	1035	4.6F
	1335	1630	6.8E
	1954	2259	6.2F
7 M	0232	0512	7.0E
	0849	1122	5.3F
	1423	1719	7.3E
	2038	2343	6.6F
8 Tu ●	0308	0554	7.5E
	0923	1204	5.9F
	1507	1804	7.7E
	2119		
9 W		0024	6.9F
	0343	0633	7.9E
	0956	1246	6.4F
	1549	1847	8.0E
	2200		
10 Th		0105	7.0F
	0417	0713	8.2E
	1030	1328	6.7F
	1632	1931	8.1E
	2241		
11 F		0146	6.9F
	0451	0753	8.3E
	1105	1410	6.9F
	1717	2016	8.0E
	2323		
12 Sa		0229	6.6F
	0526	0835	8.2E
	1144	1455	6.8F
	1805	2102	7.7E
13 Su	0008	0313	6.2F
	0604	0919	7.9E
	1226	1543	6.6F
	1857	2152	7.3E
14 M	0058	0402	5.6F
	0646	1007	7.5E
	1315	1636	6.2F
	1959	2248	6.7E
15 Tu ◐	0201	0457	4.8F
	0735	1101	7.0E
	1413	1736	5.8F
	2113	2351	6.1E

	Slack	Maximum	
	h m	h m	knots
16 W	0326	0601	4.1F
	0840	1204	6.4E
	1528	1845	5.4F
	2236		
17 Th		0104	5.7E
	0503	0715	3.7F
	1012	1315	6.1E
	1656	2001	5.3F
	2353		
18 F		0226	5.7E
	0623	0837	3.8F
	1144	1431	6.0E
	1813	2116	5.5F
19 Sa	0056	0348	6.1E
	0722	0952	4.4F
	1256	1543	6.3E
	1915	2218	5.8F
20 Su	0146	0443	6.6E
	0809	1047	5.0F
	1352	1640	6.7E
	2007	2305	6.0F
21 M	0229	0520	7.0E
	0849	1129	5.5F
	1439	1725	7.1E
	2051	2344	6.2F
22 Tu	0306	0552	7.3E
	0923	1205	5.9F
	1519	1803	7.3E
	2130		
23 W ○		0019	6.3F
	0338	0624	7.5E
	0955	1239	6.2F
	1556	1839	7.4E
	2205		
24 Th		0053	6.2F
	0408	0656	7.6E
	1023	1313	6.3F
	1630	1915	7.4E
	2237		
25 F		0127	6.1F
	0434	0729	7.6E
	1049	1348	6.3F
	1703	1951	7.3E
	2308		
26 Sa		0202	5.8F
	0459	0803	7.5E
	1114	1423	6.2F
	1736	2029	7.1E
	2338		
27 Su		0238	5.4F
	0524	0839	7.2E
	1140	1501	6.0F
	1811	2109	6.7E
28 M	0011	0316	4.9F
	0551	0917	6.8E
	1209	1542	5.7F
	1851	2152	6.3E
29 Tu	0049	0359	4.3F
	0621	0958	6.4E
	1244	1628	5.3F
	1939	2242	5.8E
30 W	0140	0449	3.6F
	0700	1047	5.9E
	1328	1723	4.9F
	2043	2341	5.4E
31 Th ◑	0302	0551	3.0F
	0753	1147	5.4E
	1427	1827	4.7F
	2204		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Deception Pass (Narrows), Washington, 2016

F–Flood, Dir. 090° True E–Ebb, Dir. 270° True

April

		Slack	Maximum	
		h m	h m	knots
1	F		0048	5.2E
		0455	0702	2.9F
		0917	1256	5.2E
		1551	1935	4.7F
		2321		
2	Sa		0157	5.5E
		0608	0814	3.3F
		1108	1406	5.5E
		1724	2041	5.1F
3	Su	0021	0300	6.0E
		0658	0917	4.1F
		1224	1510	6.0E
		1833	2138	5.5F
4	M	0108	0353	6.7E
		0737	1009	5.0F
		1320	1606	6.7E
		1927	2227	6.0F
5	Tu	0149	0438	7.3E
		0812	1055	5.8F
		1407	1655	7.3E
		2014	2312	6.4F
6	W	0227	0520	7.8E
		0846	1138	6.5F
		1452	1741	7.7E
		2058	2355	6.6F
7	Th	0303	0601	8.2E
		0920	1221	6.9F
		1535	1826	8.0E
	●	2141		
8	F		0037	6.7F
		0338	0642	8.4E
		0956	1303	7.2F
		1619	1911	8.1E
		2225		
9	Sa		0120	6.6F
		0414	0724	8.4E
		1033	1346	7.3F
		1704	1956	8.0E
		2310		
10	Su		0204	6.3F
		0452	0806	8.2E
		1113	1432	7.2F
		1752	2044	7.7E
		2358		
11	M		0250	5.8F
		0532	0852	7.9E
		1156	1520	6.9F
		1845	2134	7.2E
12	Tu	0054	0341	5.1F
		0618	0941	7.3E
		1245	1613	6.4F
		1945	2230	6.7E
13	W	0203	0439	4.4F
		0713	1037	6.7E
		1344	1713	5.9F
	◐	2055	2334	6.2E
14	Th	0329	0545	3.9F
		0830	1142	6.1E
		1501	1821	5.4F
		2210		
15	F		0045	5.9E
		0454	0702	3.7F
		1011	1255	5.7E
		1630	1934	5.2F
		2320		
16	Sa		0204	6.0E
		0602	0825	4.0F
		1138	1412	5.7E
		1748	2046	5.3F
17	Su	0019	0315	6.4E
		0655	0935	4.7F
		1244	1523	6.0E
		1851	2145	5.5F
18	M	0107	0404	6.8E
		0738	1024	5.3F
		1337	1618	6.4E
		1942	2231	5.6F
19	Tu	0149	0441	7.1E
		0815	1102	5.8F
		1421	1701	6.8E
		2027	2310	5.8F
20	W	0225	0515	7.4E
		0848	1137	6.1F
		1500	1738	7.0E
		2106	2346	5.8F
21	Th	0257	0548	7.5E
		0918	1210	6.4F
		1536	1814	7.2E
	○	2142		
22	F		0021	5.8F
		0326	0622	7.6E
		0946	1245	6.5F
		1611	1850	7.2E
		2216		
23	Sa		0057	5.6F
		0353	0656	7.6E
		1011	1320	6.5F
		1644	1927	7.1E
		2249		
24	Su		0133	5.3F
		0418	0731	7.4E
		1036	1356	6.4F
		1718	2006	7.0E
		2323		
25	M		0211	5.0F
		0444	0807	7.1E
		1103	1434	6.2F
		1754	2047	6.7E
26	Tu	0001	0251	4.5F
		0513	0846	6.8E
		1133	1515	5.9F
		1834	2132	6.4E
27	W	0045	0336	3.9F
		0548	0929	6.3E
		1209	1602	5.6F
		1922	2222	6.0E
28	Th	0144	0429	3.4F
		0632	1019	5.8E
		1254	1655	5.2F
		2019	2319	5.8E
29	F	0307	0530	3.1F
		0733	1120	5.4E
		1352	1756	5.0F
	◑	2126		
30	Sa		0021	5.7E
		0428	0638	3.2F
		0905	1228	5.3E
		1509	1901	5.0F
		2232		

May

		Slack	Maximum	
		h m	h m	knots
1	Su		0124	6.0E
		0529	0745	3.8F
		1048	1336	5.5E
		1639	2003	5.2F
		2329		
2	M		0222	6.5E
		0615	0846	4.6F
		1201	1440	6.0E
		1755	2100	5.5F
3	Tu	0018	0314	7.0E
		0655	0938	5.4F
		1258	1537	6.6E
		1855	2152	5.8F
4	W	0102	0402	7.5E
		0733	1026	6.2F
		1348	1629	7.1E
		1948	2240	6.0F
5	Th	0143	0446	8.0E
		0810	1111	6.8F
		1435	1718	7.5E
		2036	2325	6.2F
6	F	0222	0530	8.3E
		0848	1156	7.2F
		1521	1805	7.8E
	●	2124		
7	Sa		0010	6.2F
		0301	0613	8.4E
		0927	1240	7.4F
		1607	1851	7.8E
		2211		
8	Su		0056	6.0F
		0341	0657	8.3E
		1007	1325	7.4F
		1654	1939	7.7E
		2301		
9	M		0142	5.7F
		0423	0742	8.1E
		1050	1412	7.3F
		1743	2028	7.5E
		2354		
10	Tu		0232	5.3F
		0508	0829	7.7E
		1135	1502	6.9F
		1835	2120	7.1E
11	W	0054	0325	4.8F
		0559	0921	7.2E
		1225	1554	6.5F
		1932	2215	6.8E
12	Th	0203	0424	4.3F
		0702	1017	6.5E
		1323	1652	6.0F
		2033	2315	6.4E
13	F	0317	0529	4.0F
		0825	1120	6.0E
		1435	1754	5.5F
	◐	2137		
14	Sa		0020	6.3E
		0427	0641	4.0F
		0956	1229	5.6E
		1556	1859	5.2F
		2238		
15	Su		0125	6.4E
		0526	0753	4.3F
		1115	1340	5.5E
		1711	2003	5.1F
		2332		
16	M		0224	6.6E
		0616	0856	4.9F
		1219	1446	5.7E
		1814	2059	5.1F
17	Tu	0019	0314	6.8E
		0659	0946	5.4F
		1311	1541	6.1E
		1908	2148	5.2F
18	W	0101	0356	7.1E
		0737	1027	5.8F
		1356	1627	6.4E
		1955	2231	5.2F
19	Th	0139	0434	7.3E
		0811	1104	6.1F
		1437	1708	6.6E
		2038	2311	5.3F
20	F	0213	0511	7.4E
		0843	1141	6.4F
		1515	1748	6.8E
		2119	2350	5.2F
21	Sa	0244	0548	7.5E
		0912	1217	6.5F
		1552	1827	6.9E
	○	2158		
22	Su		0028	5.1F
		0314	0625	7.4E
		0940	1255	6.6F
		1628	1906	6.9E
		2236		
23	M		0108	4.8F
		0344	0703	7.3E
		1008	1333	6.5F
		1705	1947	6.8E
		2316		
24	Tu		0149	4.5F
		0415	0742	7.0E
		1038	1413	6.4F
		1743	2030	6.7E
		2359		
25	W		0232	4.2F
		0449	0824	6.7E
		1111	1456	6.2F
		1823	2116	6.5E
26	Th	0048	0319	3.9F
		0531	0909	6.4E
		1150	1542	5.9F
		1908	2204	6.4E
27	F	0143	0412	3.7F
		0622	1000	6.0E
		1237	1633	5.7F
		1957	2257	6.3E
28	Sa	0244	0509	3.6F
		0728	1058	5.8E
		1332	1728	5.4F
		2049	2352	6.4E
29	Su	0345	0611	3.9F
		0852	1201	5.6E
		1441	1827	5.3F
	◑	2143		
30	M		0048	6.6E
		0439	0712	4.4F
		1020	1305	5.7E
		1559	1925	5.3F
		2237		
31	Tu		0143	6.9E
		0528	0811	5.1F
		1133	1408	6.0E
		1716	2022	5.3F
		2327		

June

		Slack	Maximum	
		h m	h m	knots
1	W		0236	7.3E
		0613	0906	5.8F
		1234	1508	6.4E
		1823	2117	5.5F
2	Th	0015	0326	7.6E
		0657	0958	6.4F
		1329	1603	6.8E
		1923	2208	5.6F
3	F	0101	0414	7.9E
		0740	1047	6.8F
		1420	1656	7.2E
		2019	2259	5.6F
4	Sa	0147	0502	8.1E
		0823	1134	7.2F
		1509	1746	7.4E
	●	2112	2348	5.6F
5	Su	0232	0548	8.2E
		0906	1222	7.3F
		1558	1836	7.5E
		2204		
6	M		0037	5.5F
		0318	0635	8.1E
		0950	1309	7.3F
		1646	1925	7.4E
		2256		
7	Tu		0126	5.3F
		0405	0723	7.9E
		1035	1357	7.2F
		1734	2014	7.3E
		2350		
8	W		0217	5.0F
		0456	0812	7.5E
		1122	1445	6.9F
		1823	2105	7.1E
9	Th	0047	0310	4.7F
		0551	0903	7.1E
		1211	1536	6.5F
		1913	2156	6.9E
10	F	0146	0406	4.5F
		0654	0957	6.6E
		1304	1628	6.1F
		2004	2249	6.8E
11	Sa	0246	0505	4.4F
		0807	1055	6.1E
		1404	1722	5.6F
		2056	2344	6.6E
12	Su	0345	0606	4.4F
		0924	1155	5.7E
		1512	1818	5.2F
	◐	2147		
13	M		0039	6.6E
		0440	0708	4.6F
		1037	1257	5.5E
		1622	1915	5.0F
		2237		
14	Tu		0132	6.6E
		0529	0806	4.9F
		1141	1359	5.6E
		1728	2010	4.8F
		2325		
15	W		0222	6.8E
		0615	0859	5.2F
		1237	1457	5.6E
		1828	2102	4.7F
16	Th	0010	0310	6.9E
		0656	0947	5.6F
		1327	1549	5.9E
		1922	2151	4.7F
17	F	0052	0354	7.0E
		0734	1031	5.9F
		1412	1637	6.1E
		2012	2237	4.7F
18	Sa	0131	0437	7.1E
		0810	1112	6.2F
		1454	1722	6.4E
		2059	2321	4.7F
19	Su	0209	0519	7.2E
		0844	1153	6.4F
		1534	1805	6.6E
		2143		
20	M		0005	4.6F
		0245	0600	7.2E
		0916	1233	6.5F
	○	1613	1848	6.7E
		2226		
21	Tu		0048	4.6F
		0322	0641	7.2E
		0949	1314	6.6F
		1651	1930	6.8E
		2308		
22	W		0131	4.5F
		0359	0723	7.1E
		1023	1355	6.5F
		1729	2013	6.8E
		2349		
23	Th		0216	4.4F
		0440	0807	6.9E
		1100	1438	6.4F
		1807	2057	6.9E
24	F	0032	0302	4.4F
		0526	0853	6.7E
		1141	1522	6.3F
		1846	2142	6.9E
25	Sa	0116	0351	4.4F
		0619	0942	6.5E
		1226	1610	6.0F
		1927	2230	6.9E
26	Su	0203	0444	4.5F
		0720	1036	6.3E
		1317	1700	5.8F
		2011	2320	6.9E
27	M	0254	0539	4.7F
		0831	1133	6.1E
		1417	1753	5.5F
	◑	2058		
28	Tu		0012	7.0E
		0347	0637	5.0F
		0948	1235	6.0E
		1526	1850	5.3F
		2148		
29	W		0106	7.1E
		0441	0737	5.4F
		1104	1337	6.0E
		1643	1948	5.1F
		2241		
30	Th		0200	7.3E
		0535	0835	5.9F
		1212	1440	6.2E
		1759	2046	5.0F
		2336		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Deception Pass (Narrows), Washington, 2016

F–Flood, Dir. 090° True E–Ebb, Dir. 270° True

July

	Slack	Maximum	
	h m	h m	knots
1 F	0627	0255	7.5E
	1313	0932	6.3F
	1908	1541	6.4E
		2143	5.0F
2 Sa	0030	0348	7.7E
	0718	1027	6.7F
	1409	1639	6.7E
	2010	2239	5.1F
3 Su	0124	0441	7.8E
	0807	1118	6.9F
	1501	1733	7.0E
	2106	2332	5.1F
4 M ●	0217	0531	7.8E
	0855	1208	7.1F
	1549	1824	7.2E
	2159		
5 Tu		0024	5.2F
	0309	0621	7.8E
	0942	1256	7.1F
	1635	1912	7.3E
	2249		
6 W		0114	5.2F
	0400	0709	7.7E
	1027	1342	7.0F
	1720	1959	7.3E
	2337		
7 Th		0203	5.2F
	0452	0757	7.5E
	1112	1428	6.8F
	1802	2044	7.3E
8 F	0025	0252	5.1F
	0544	0845	7.1E
	1157	1513	6.5F
	1844	2130	7.2E
9 Sa	0112	0341	5.0F
	0638	0934	6.8E
	1242	1559	6.1F
	1925	2215	7.0E
10 Su	0200	0431	4.9F
	0736	1024	6.3E
	1330	1646	5.7F
	2007	2302	6.8E
11 M ◐	0250	0524	4.8F
	0839	1117	5.9E
	1423	1735	5.2F
	2050	2351	6.7E
12 Tu	0341	0618	4.7F
	0946	1213	5.5E
	1524	1827	4.8F
	2136		
13 W		0041	6.6E
	0433	0715	4.8F
	1054	1312	5.3E
	1634	1922	4.4F
	2225		
14 Th		0133	6.5E
	0524	0812	5.0F
	1158	1412	5.3E
	1747	2019	4.2F
	2317		
15 F		0226	6.5E
	0613	0907	5.2F
	1255	1512	5.4E
	1853	2115	4.1F

	Slack	Maximum	
	h m	h m	knots
16 Sa	0009	0318	6.6E
	0659	0959	5.6F
	1346	1608	5.7E
	1951	2208	4.2F
17 Su	0059	0407	6.7E
	0742	1046	5.9F
	1432	1659	6.1E
	2042	2258	4.3F
18 M	0146	0454	6.9E
	0821	1131	6.2F
	1514	1745	6.5E
	2127	2345	4.5F
19 Tu ○	0230	0540	7.1E
	0859	1213	6.5F
	1553	1828	6.8E
	2208		
20 W		0030	4.7F
	0312	0623	7.2E
	0936	1255	6.6F
	1630	1910	7.0F
	2246		
21 Th		0113	4.9F
	0353	0707	7.3E
	1013	1335	6.7F
	1705	1950	7.2F
	2322		
22 F		0156	5.1F
	0436	0750	7.3E
	1051	1417	6.7F
	1740	2032	7.3E
	2358		
23 Sa		0240	5.2F
	0521	0835	7.2E
	1130	1459	6.5F
	1815	2114	7.4E
24 Su	0035	0325	5.3F
	0610	0922	7.1E
	1213	1543	6.3F
	1852	2158	7.4E
25 M	0117	0414	5.4F
	0704	1012	6.8E
	1301	1630	5.9F
	1931	2245	7.3E
26 Tu ◑	0204	0506	5.4F
	0807	1106	6.5E
	1356	1721	5.5F
	2015	2336	7.2E
27 W	0257	0603	5.5F
	0919	1206	6.2E
	1501	1818	5.1F
	2106		
28 Th		0031	7.1F
	0357	0705	5.6F
	1038	1311	5.9E
	1623	1919	4.7F
	2204		
29 F		0129	7.0E
	0502	0809	5.8F
	1154	1418	5.9E
	1750	2024	4.5F
	2310		
30 Sa		0230	7.1E
	0605	0913	6.0F
	1301	1526	6.1E
	1905	2128	4.5F
31 Su	0018	0330	7.2E
	0705	1013	6.4F
	1359	1629	6.5E
	2008	2229	4.7F

August

	Slack	Maximum	
	h m	h m	knots
1 M	0121	0428	7.4E
	0800	1107	6.6F
	1450	1725	6.8E
	2101	2324	5.0F
2 Tu ●	0219	0521	7.5E
	0850	1157	6.8F
	1535	1813	7.1E
	2148		
3 W		0014	5.3F
	0311	0611	7.6E
	0936	1242	6.9F
	1617	1857	7.3E
	2232		
4 Th		0101	5.5F
	0400	0657	7.6E
	1019	1324	6.8F
	1656	1937	7.4E
	2312		
5 F		0144	5.6F
	0445	0741	7.5E
	1100	1405	6.7F
	1732	2017	7.4E
	2350		
6 Sa		0227	5.6F
	0529	0824	7.3E
	1138	1445	6.4F
	1807	2056	7.3E
7 Su	0028	0310	5.5F
	0613	0907	7.0E
	1216	1526	6.0F
	1840	2136	7.2E
8 M	0106	0353	5.3F
	0659	0951	6.6E
	1255	1608	5.5F
	1913	2218	6.9E
9 Tu	0146	0440	5.1F
	0750	1038	6.1E
	1337	1653	5.0F
	1949	2303	6.6E
10 W ◐	0230	0530	4.9F
	0849	1130	5.6E
	1429	1743	4.4F
	2030	2352	6.3E
11 Th	0323	0625	4.7F
	1000	1228	5.2E
	1542	1839	3.9F
	2121		
12 F		0047	6.1E
	0424	0726	4.7F
	1115	1332	5.0E
	1714	1941	3.6F
	2225		
13 Sa		0146	6.0E
	0527	0828	4.9F
	1222	1439	5.2E
	1833	2046	3.6F
	2336		
14 Su		0246	6.1E
	0626	0928	5.2F
	1318	1542	5.6E
	1934	2146	3.8F
15 M	0040	0342	6.3E
	0717	1021	5.7F
	1406	1636	6.1E
	2023	2239	4.3F

	Slack	Maximum	
	h m	h m	knots
16 Tu	0134	0434	6.7E
	0801	1108	6.1F
	1447	1722	6.6E
	2103	2326	4.8F
17 W	0221	0521	7.1E
	0842	1150	6.4F
	1524	1803	7.0E
	2139		
18 Th ○		0009	5.2F
	0304	0605	7.4E
	0921	1231	6.7F
	1559	1843	7.4E
	2212		
19 F		0050	5.6F
	0344	0648	7.6E
	0958	1311	6.8F
	1631	1922	7.7E
	2244		
20 Sa		0131	5.9F
	0426	0731	7.7E
	1036	1351	6.8F
	1704	2001	7.8E
	2317		
21 Su		0213	6.1F
	0509	0814	7.7E
	1116	1432	6.6F
	1737	2042	7.8E
	2353		
22 M		0257	6.2F
	0555	0859	7.5E
	1158	1515	6.3F
	1813	2124	7.7E
23 Tu	0033	0344	6.1F
	0646	0948	7.2E
	1245	1601	5.9F
	1852	2210	7.5E
24 W ◑	0119	0435	6.0F
	0745	1042	6.7E
	1339	1652	5.3F
	1936	2302	7.2E
25 Th	0213	0533	5.8F
	0856	1142	6.2E
	1449	1751	4.7F
	2030	2359	6.9E
26 F	0319	0637	5.6F
	1018	1249	5.8E
	1622	1858	4.2F
	2140		
27 Sa		0104	6.6E
	0436	0747	5.6F
	1138	1403	5.8E
	1754	2011	4.0F
	2305		
28 Su		0213	6.5E
	0552	0858	5.8F
	1246	1518	6.0E
	1905	2123	4.3F
29 M	0023	0320	6.7E
	0658	1002	6.1F
	1343	1624	6.5E
	2001	2226	4.8F
30 Tu	0128	0421	7.0E
	0754	1057	6.4F
	1431	1715	6.9E
	2047	2318	5.3F
31 W	0222	0514	7.3E
	0843	1142	6.6F
	1512	1756	7.3E
	2128		

September

	Slack	Maximum	
	h m	h m	knots
1 Th ●		0002	5.7F
	0310	0559	7.5E
	0926	1223	6.6F
	1550	1833	7.5E
	2204		
2 F		0043	5.9F
	0352	0641	7.6E
	1006	1301	6.6F
	1623	1908	7.6E
	2238		
3 Sa		0121	6.1F
	0432	0720	7.5E
	1042	1337	6.4F
	1655	1943	7.6E
	2310		
4 Su		0158	6.1F
	0509	0759	7.4E
	1116	1414	6.1F
	1723	2019	7.5E
	2340		
5 M		0236	6.0F
	0546	0838	7.1E
	1149	1451	5.8F
	1751	2056	7.2E
6 Tu	0009	0316	5.8F
	0625	0919	6.7E
	1223	1530	5.3F
	1819	2135	6.9E
7 W	0041	0358	5.5F
	0707	1003	6.2E
	1301	1613	4.7F
	1851	2218	6.5E
8 Th	0118	0446	5.1F
	0759	1053	5.7E
	1350	1703	4.0F
	1929	2307	6.0E
9 F ◐	0205	0541	4.7F
	0907	1151	5.2E
	1509	1803	3.4F
	2021		
10 Sa		0004	5.6E
	0308	0644	4.5F
	1030	1258	5.0E
	1659	1911	3.0F
	2140		
11 Su		0110	5.4E
	0432	0751	4.6F
	1145	1409	5.2E
	1819	2022	3.2F
	2317		
12 M		0216	5.5E
	0550	0856	5.0F
	1244	1514	5.7E
	1914	2126	3.8F
13 Tu	0030	0318	6.0E
	0649	0952	5.5F
	1331	1608	6.3E
	1955	2218	4.5F
14 W	0123	0412	6.5E
	0738	1039	6.0F
	1410	1652	6.9E
	2031	2303	5.2F
15 Th	0209	0459	7.1E
	0820	1122	6.3F
	1446	1732	7.4E
	2103	2344	5.8F

	Slack	Maximum	
	h m	h m	knots
16 F ○	0250	0544	7.5E
	0900	1203	6.6F
	1519	1811	7.8E
	2134		
17 Sa		0024	6.3F
	0330	0626	7.8E
	0939	1242	6.7F
	1552	1849	8.1E
	2205		
18 Su		0105	6.7F
	0411	0709	8.0E
	1018	1322	6.7F
	1624	1928	8.2E
	2238		
19 M		0146	6.9F
	0453	0752	7.9E
	1059	1404	6.5F
	1658	2009	8.1E
	2315		
20 Tu		0230	6.9F
	0539	0838	7.7E
	1142	1447	6.1F
	1735	2052	7.9E
	2355		
21 W		0316	6.7F
	0630	0926	7.3E
	1232	1535	5.5F
	1815	2139	7.5E
22 Th	0041	0408	6.4F
	0728	1021	6.8E
	1331	1629	4.9F
	1903	2232	7.0E
23 F ◑	0136	0506	5.9F
	0839	1122	6.3E
	1453	1732	4.2F
	2005	2334	6.5E
24 Sa	0247	0613	5.6F
	1000	1233	5.9E
	1630	1845	3.8F
	2134		
25 Su		0044	6.1E
	0416	0727	5.4F
	1118	1352	5.9E
	1752	2005	3.9F
	2312		
26 M		0200	6.1E
	0539	0842	5.6F
	1224	1510	6.3E
	1854	2121	4.5F
27 Tu	0029	0313	6.3E
	0646	0947	5.8F
	1317	1610	6.7E
	1942	2220	5.1F
28 W	0128	0414	6.7E
	0741	1038	6.1F
	1401	1653	7.2E
	2023	2305	5.7F
29 Th	0217	0502	7.1E
	0828	1120	6.2F
	1440	1729	7.4E
	2100	2344	6.1F
30 F ●	0300	0543	7.3E
	0909	1157	6.3F
	1514	1802	7.6E
	2132		

Time meridian 120° W. 0000 is midnight 1200 is noon. Times are not adjusted for Daylight Saving Time.

Deception Pass (Narrows), Washington, 2016

F–Flood, Dir. 090° True E–Ebb, Dir. 270° True

October

	Slack h m	Maximum h m	Maximum knots
1 Sa	0338	0019	6.3F
	0947	0621	7.4E
	1545	1232	6.2F
	2202	1835	7.7E
2 Su	0414	0054	6.5F
	1021	0657	7.4E
	1613	1307	6.0F
	2230	1909	7.7E
3 M	0448	0129	6.5F
	1053	0734	7.3E
	1639	1342	5.8F
	2255	1943	7.5E
4 Tu	0522	0205	6.3F
	1125	0811	7.1E
	1704	1419	5.4F
	2321	2019	7.2E
5 W	0558	0242	6.1F
	1159	0851	6.7E
	1731	1458	4.8F
	2350	2057	6.8E
6 Th	0637	0323	5.7F
	1239	0935	6.3E
	1802	1541	4.2F
		2139	6.3E
7 F	0024	0409	5.3F
	0725	1024	5.8E
	1333	1632	3.5F
	1841	2228	5.8E
8 Sa ◐	0107	0503	4.9F
	0828	1122	5.4E
	1503	1734	2.9F
	1936	2328	5.3E
9 Su	0205	0607	4.6F
	0946	1229	5.2E
	1646	1845	2.8F
	2107		
10 M	0329	0036	5.0E
	1100	0715	4.6F
	1754	1337	5.5E
	2300	1957	3.2F
11 Tu	0505	0147	5.2E
	1159	0820	4.9F
	1842	1440	6.0E
		2100	4.1F
12 W	0012	0250	5.8E
	0614	0916	5.3F
	1246	1532	6.6E
	1919	2151	4.9F
13 Th	0105	0346	6.4E
	0707	1005	5.8F
	1326	1616	7.2E
	1952	2235	5.7F
14 F	0150	0434	7.1E
	0753	1049	6.2F
	1402	1657	7.7E
	2024	2317	6.4F
15 Sa ○	0232	0519	7.5E
	0836	1131	6.4F
	1437	1737	8.1E
	2056	2358	6.9F

	Slack h m	Maximum h m	Maximum knots
16 Su	0314	0603	7.9E
	0918	1213	6.5F
	1511	1817	8.3E
	2130		
17 M	0356	0039	7.2F
	1000	0647	8.0E
	1546	1255	6.4F
	2206	1858	8.4E
18 Tu	0440	0121	7.3F
	1044	0731	7.9E
	1622	1338	6.2F
	2244	1940	8.3E
19 W	0526	0206	7.3F
	1131	0818	7.7E
	1702	1424	5.7F
	2326	2024	8.0E
20 Th	0618	0253	7.0F
	1226	0909	7.3E
	1746	1514	5.2F
		2113	7.5E
21 F	0014	0346	6.6F
	0716	1004	6.8E
	1333	1611	4.5F
	1840	2209	6.9E
22 Sa ◑	0110	0445	6.1F
	0623	1106	6.4E
	1458	1717	4.0F
	1954	2312	6.2E
23 Su	0223	0551	5.6F
	0938	1216	6.1E
	1623	1833	3.8F
	2136		
24 M	0353	0025	5.8E
	1049	0703	5.4F
	1734	1332	6.2E
	2309	1954	4.1F
25 Tu	0516	0143	5.8E
	1150	0815	5.4F
	1829	1444	6.5E
		2107	4.8F
26 W	0019	0256	6.0E
	0624	0918	5.5F
	1241	1538	6.9E
	1914	2201	5.4F
27 Th	0115	0356	6.4E
	0719	1007	5.7F
	1324	1618	7.2E
	1953	2242	5.9F
28 F	0202	0441	6.8E
	0806	1049	5.8F
	1402	1654	7.5E
	2028	2318	6.3F
29 Sa	0243	0521	7.0E
	0847	1126	5.8F
	1435	1728	7.6E
	2059	2353	6.5F
30 Su ●	0321	0557	7.2E
	0925	1202	5.7F
	1505	1802	7.7E
	2128		
31 M	0356	0027	6.6F
	1001	0633	7.2E
	1533	1238	5.6F
	2155	1836	7.6E

November

	Slack h m	Maximum h m	Maximum knots
1 Tu	0430	0102	6.6F
	1035	0710	7.1E
	1559	1314	5.3F
	2220	1912	7.4E
2 W	0504	0138	6.5F
	1110	0748	6.9E
	1626	1352	4.9F
	2246	1948	7.2E
3 Th	0540	0216	6.3F
	1148	0829	6.7E
	1655	1432	4.4F
	2316	2027	6.8E
4 F	0620	0257	6.0F
	1233	0913	6.3E
	1729	1517	3.9F
	2350	2109	6.3E
5 Sa	0705	0342	5.6F
	1333	1003	6.0E
	1812	1609	3.4F
		2159	5.8E
6 Su	0033	0434	5.2F
	0800	1058	5.8E
	1454	1710	3.0F
	1912	2258	5.3E
7 M ◐	0127	0534	5.0F
	0903	1159	5.7E
	1613	1817	3.1F
	2044		
8 Tu	0240	0005	5.1E
	1008	0637	4.9F
	1712	1301	5.9E
	2230	1924	3.6F
9 W	0411	0113	5.2E
	1105	0739	5.0F
	1757	1359	6.4E
	2344	2025	4.4F
10 Th	0530	0217	5.7E
	1153	0836	5.2F
	1836	1451	6.9E
		2117	5.3F
11 F	0040	0314	6.3E
	0631	0928	5.5F
	1236	1538	7.4E
	1912	2204	6.0F
12 Sa	0128	0406	6.9E
	0724	1015	5.8F
	1316	1622	7.8E
	1947	2249	6.7F
13 Su	0214	0454	7.3E
	0812	1101	6.0F
	1355	1705	8.2E
	2024	2332	7.1F
14 M ○	0258	0541	7.6E
	0859	1146	6.1F
	1434	1748	8.4E
	2102		
15 Tu	0343	0016	7.4F
	0948	0627	7.8E
	1514	1231	6.0F
	2141	1831	8.4E

	Slack h m	Maximum h m	Maximum knots
16 W	0429	0101	7.5F
	1034	0714	7.8E
	1555	1317	5.7F
	2223	1916	8.2E
17 Th	0517	0147	7.4F
	1126	0803	7.6E
	1640	1406	5.4F
	2308	2004	7.9E
18 F	0608	0236	7.1F
	1225	0854	7.3E
	1730	1458	4.9F
	2357	2054	7.4E
19 Sa	0704	0328	6.7F
	1331	0949	7.0E
	1831	1556	4.5F
		2150	6.8E
20 Su	0053	0425	6.2F
	0803	1048	6.7E
	1444	1700	4.1F
	1949	2252	6.2E
21 M ◑	0201	0526	5.8F
	0906	1151	6.5E
	1556	1811	4.1F
	2122		
22 Tu	0321	0000	5.8E
	1008	0631	5.4F
	1659	1256	6.5E
	2246	1924	4.4F
23 W	0441	0112	5.6E
	1105	0735	5.2F
	1752	1358	6.7E
	2355	2032	4.9F
24 Th	0550	0222	5.7E
	1156	0835	5.2F
	1838	1451	6.9E
		2126	5.4F
25 F	0052	0322	6.0E
	0648	0927	5.2F
	1240	1536	7.1E
	1918	2210	5.8F
26 Sa	0140	0411	6.3E
	0738	1012	5.2F
	1320	1616	7.3E
	1954	2249	6.2F
27 Su	0223	0454	6.5E
	0823	1054	5.2F
	1356	1654	7.4E
	2028	2326	6.4F
28 M	0302	0533	6.7E
	0905	1133	5.1F
	1429	1731	7.5E
	2059		
29 Tu ●	0339	0002	6.5F
	0945	0612	6.8E
	1500	1212	5.0F
	2128	1809	7.4E
30 W	0416	0039	6.6F
	1024	0651	6.9E
	1530	1251	4.8F
	2156	1847	7.3E

December

	Slack h m	Maximum h m	Maximum knots
1 Th	0452	0117	6.5F
	1103	0731	6.8E
	1601	1332	4.6F
	2225	1925	7.1E
2 F	0529	0157	6.4F
	1145	0812	6.7E
	1635	1415	4.3F
	2257	2006	6.8E
3 Sa	0607	0238	6.2F
	1230	0856	6.6E
	1714	1500	4.0F
	2333	2050	6.5E
4 Su	0648	0322	6.0F
	1322	0943	6.4E
	1801	1550	3.7F
		2138	6.1E
5 M	0015	0410	5.7F
	0733	1033	6.3E
	1419	1645	3.6F
	1902	2233	5.7E
6 Tu	0105	0503	5.4F
	0822	1126	6.3E
	1518	1744	3.8F
	2019	2333	5.5E
7 W ◐	0207	0559	5.2F
	0913	1221	6.4E
	1613	1845	4.2F
	2148		
8 Th	0321	0037	5.5E
	1006	0657	5.1F
	1703	1316	6.7E
	2306	1944	4.8F
9 F	0441	0140	5.7E
	1057	0755	5.1F
	1749	1409	7.0E
		2041	5.4F
10 Sa	0010	0241	6.1E
	0554	0850	5.2F
	1146	1500	7.4E
	1833	2133	6.1F
11 Su	0106	0338	6.5E
	0657	0943	5.3F
	1234	1549	7.7E
	1916	2223	6.6F
12 M	0158	0432	6.9E
	0754	1034	5.4F
	1320	1637	8.0E
	1959	2311	7.1F
13 Tu ○	0247	0523	7.2E
	0847	1124	5.5F
	1406	1725	8.2E
	2042	2358	7.3F
14 W	0335	0612	7.5E
	0939	1213	5.5F
	1453	1812	8.2E
	2127		
15 Th	0422	0046	7.4F
	1030	0701	7.5E
	1541	1302	5.4F
	2212	1900	8.1E

	Slack h m	Maximum h m	Maximum knots
16 F	0509	0133	7.4F
	1123	0750	7.5E
	1632	1353	5.3F
	2258	1949	7.8E
17 Sa	0557	0221	7.2F
	1217	0840	7.4E
	1726	1445	5.1F
	2347	2039	7.4E
18 Su	0645	0311	6.8F
	1313	0930	7.2E
	1826	1539	4.8F
		2132	6.9E
19 M	0038	0402	6.4F
	0735	1022	7.0E
	1412	1636	4.7F
	1934	2228	6.4E
20 Tu ◑	0136	0455	5.9F
	0826	1116	6.8E
	1512	1736	4.6F
	2050	2328	5.9E
21 W	0240	0551	5.4F
	0918	1211	6.7E
	1610	1839	4.6F
	2207		
22 Th	0352	0030	5.6E
	1011	0648	5.0F
	1705	1306	6.6E
	2317	1941	4.8F
23 F	0504	0134	5.4E
	1102	0746	4.7F
	1755	1400	6.7E
		2039	5.1F
24 Sa	0610	0019	5.5E
	1151	0237	4.6F
	1840	0842	6.8E
		1451	5.5F
		2132	
25 Su	0709	0113	5.7E
	1237	0335	4.5F
	1921	0934	6.9E
		1538	5.8F
		2218	
26 M	0801	0200	6.0E
	1320	0425	4.5F
	2000	1023	7.0E
		1623	6.1F
		2300	
27 Tu	0849	0243	6.3E
	1400	0511	4.6F
	2036	1108	7.1E
		1705	6.3F
		2341	
28 W ●	0933	0324	6.5E
	1439	0553	4.6F
	2109	1152	7.2E
		1747	
29 Th	0402	0021	6.5F
	1015	0635	6.7E
	1515	1234	4.6F
	2142	1828	7.2E
30 F	0438	0100	6.6F
	1054	0715	6.8E
	1552	1316	4.6F
	2214	1909	7.1E
31 Sa	0514	0140	6.6F
	1133	0756	6.9E
	1630	1359	4.6F
	2248	1951	7.0E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Rosario Strait, Washington, 2016

F–Flood, Dir. 335° True E–Ebb, Dir. 175° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◑	0419 1026	0102 0705 1435 1943	1.3E 1.6F 1.9E *
2 Sa	0503 1053	0215 0748 1524 2044	0.9E 1.3F 2.0E *
3 Su	0556 1121 2037	0324 0834 1609 2344	0.7E 1.0F 2.2E 0.4F
4 M	0159 0709 1151 2119	0429 0926 1654	0.6E 0.8F 2.3E
5 Tu	0332 0839 1224 2156	0033 0535 1024 1740	0.8F 0.5E 0.6F 2.4E
6 W	0437 0954 1302 2232	0108 0646 1120 1826	1.2F 0.6E 0.5F 2.6E
7 Th	0527 1053 1341 2307	0133 0751 1211 1912	1.5F 0.8E 0.5F 2.7E
8 F	0608 1142 1423 2341	0150 0837 1258 1955	1.8F 1.0E 0.5F 2.8E
9 Sa ●	0643 1227 1506	0218 0915 1343 2034	2.0F 1.2E 0.5F 2.9E
10 Su	0014 0712 1310 1553	0253 0950 1429 2111	2.2F 1.4E 0.5F 2.9E
11 M	0047 0738 1354 1643	0332 1026 1517 2145	2.4F 1.5E 0.6F 2.9F
12 Tu	0121 0804 1442 1737	0412 1102 1608 2219	2.4F 1.7E 0.6F 2.7E
13 W	0156 0830 1533 1834	0454 1142 1702 2254	2.4F 1.8E 0.6F 2.4E
14 Th	0233 0857 1626 1934	0536 1226 1755 2336	2.3F 2.0F 0.7F 2.0E
15 F	0314 0924 1721 2039	0618 1317 1850	2.1F 2.1E 0.7F
16 Sa ◐	0358 0955 1817 2208	0038 0701 1412 1948	1.5E 1.8F 2.3E 0.7F
17 Su	0449 1028 1915	0210 0748 1507 2054	1.0E 1.5F 2.5E 0.8F
18 M	0023 0552 1108 2014	0330 0839 1601 2226	0.8E 1.2F 2.7E 1.0F
19 Tu	0228 0720 1155 2109	0442 0938 1656	0.7E 0.9F 2.8F
20 W	0352 0856 1249 2200	0023 0556 1043 1752	1.4F 0.7E 0.7F 2.9E
21 Th	0454 1014 1346 2246	0114 0716 1145 1849	1.7F 0.9E 0.6F 3.0F
22 F	0544 1115 1440 2329	0157 0821 1241 1942	2.0F 1.1E 0.6F 3.1E
23 Sa ○	0625 1207 1533	0234 0905 1332 2030	2.1F 1.4E 0.6F 3.0E
24 Su	0009 0700 1256 1623	0305 0942 1420 2113	2.2F 1.6E 0.6F 2.9F
25 M	0047 0730 1344 1712	0334 1017 1508 2152	2.2F 1.8E 0.6F 2.7E
26 Tu	0124 0756 1433 1758	0405 1053 1557 2229	2.1F 1.9E 0.6F 2.5E
27 W	0200 0820 1522 1842	0439 1130 1646 2305	2.0F 1.9E 0.6F 2.1E
28 Th	0234 0842 1612 1925	0515 1210 1734 2342	1.9F 1.9E 0.6F 1.7E
29 F	0309 0903 1701 2010	0552 1253 1821	1.7F 1.9E 0.6F
30 Sa	0344 0923 1751 2103	0024 0631 1341 1910	1.3E 1.5F 1.9E 0.5F
31 Su ◑	0424 0941 1843 2230	0130 0711 1430 2002	0.9E 1.2F 2.0E 0.5F

February

	Slack	Maximum	
	h m	h m	knots
1 M	0513 1001 1936	0245 0755 1520 2103	0.7E 0.9F 2.0E 0.5F
2 Tu	0101 0625 1028 2028	0353 0844 1609 2222	0.5E 0.6F 2.1E 0.7F
3 W	0256 0811 1105 2116	0501 0942 1658	0.5E 0.4F 2.2E
4 Th	0405 0938 1156 2159	0033 0611 1044 1749	1.0F 0.5E 0.3F 2.3E
5 F	0453 1038 1259 2239	0059 0721 1143 1841	1.4F 0.8E 0.3F 2.5E
6 Sa	0531 1123 1403 2316	0120 0810 1236 1930	1.7F 1.0E 0.4F 2.6E
7 Su	0601 1202 1504 2352	0150 0847 1325 2016	1.9F 1.3E 0.6F 2.8E
8 M ●	0627 1239 1605	0225 0922 1413 2057	2.1F 1.6E 0.8F 2.8E
9 Tu	0027 0652 1318 1707	0303 0956 1502 2137	2.3F 1.9E 0.9F 2.8F
10 W	0103 0716 1401 1807	0344 1031 1553 2216	2.3F 2.1E 1.1F 2.6E
11 Th	0139 0744 1448 1907	0425 1108 1646 2256	2.3F 2.3E 1.2F 2.3E
12 F	0217 0810 1539 2007	0508 1148 1739 2342	2.1F 2.5E 1.3F 1.9E
13 Sa	0259 0838 1633 2112	0551 1235 1832	1.9F 2.5E 1.3F
14 Su ◐	0346 0908 1731 2232	0043 0635 1330 1927	1.4E 1.6F 2.6E 1.2F
15 M	0442 0941 1833	0159 0721 1431 2027	1.0E 1.3F 2.6F 1.1F
16 Tu	0021 0555 1019 1937	0316 0813 1532 2147	0.8E 0.9F 2.6E 1.1F
17 W	0212 0729 1107 2041	0428 0912 1632	0.7E 0.6F 2.6E
18 Th	0328 0902 1217 2138	0006 0544 1022 1732	1.3F 0.8E 0.4F 2.6E
19 F	0424 1015 1339 2228	0100 0711 1135 1833	1.6F 1.0E 0.4F 2.6E
20 Sa	0509 1110 1450 2312	0143 0812 1238 1930	1.7F 1.3E 0.5F 2.6E
21 Su	0547 1155 1551 2352	0218 0849 1328 2019	1.8F 1.6E 0.6F 2.6E
22 M ○	0618 1237 1646	0243 0919 1413 2102	1.9F 1.8E 0.8F 2.6E
23 Tu	0030 0644 1317 1736	0304 0950 1457 2140	1.8F 2.0E 0.8F 2.4E
24 W	0105 0707 1357 1822	0331 1021 1540 2216	1.8F 2.1E 0.9F 2.2E
25 Th	0140 0727 1437 1904	0404 1054 1625 2251	1.7F 2.2E 1.0F 1.9E
26 F	0214 0746 1519 1945	0441 1127 1709 2327	1.6F 2.1E 1.0F 1.6E
27 Sa	0249 0803 1602 2027	0519 1201 1753	1.4F 2.1E 1.0F
28 Su	0326 0818 1647 2115	0006 0558 1239 1839	1.3E 1.2F 2.0E 1.0F
29 M	0410 0835 1736 2220	0100 0638 1325 1927	1.0E 0.9F 1.9E 0.9F

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑	0507 0857 1829	0214 0721 1421 2020	0.7F 0.7F 1.9E 0.9F
2 W	0004 0629 0925 1927	0325 0810 1519 2122	0.6E 0.4F 1.9E 0.9F
3 Th	0156 0025	0431 0908 1615 2236	0.6E * 1.9E 1.0F
4 F	0305 0118	0536 1014 1712 2348	0.7E * 2.0E 1.2F
5 Sa	0352 2205	0638 1120 1810	0.9E * 2.1E
6 Su	0427 1059 1406 2248	0035 0728 1219 1906	1.5F 1.2E 0.5F 2.3E
7 M	0457 1133 1523 2327	0113 0809 1310 1957	1.7F 1.6E 0.8F 2.4E
8 Tu ●	0525 1208 1632	0151 0846 1359 2043	1.9F 2.0E 1.2F 2.5E
9 W	0005 0553 1245 1735	0230 0922 1448 2127	2.0F 2.4E 1.4F 2.5E
10 Th	0043 0622 1325 1835	0312 0958 1538 2209	2.0F 2.6E 1.7F 2.4E
11 F	0123 0651 1410 1932	0354 1034 1630 2253	1.9F 2.8E 1.8F 2.1E
12 Sa	0205 0720 1458 2028	0439 1113 1721 2341	1.8F 2.9E 1.8F 1.8E
13 Su	0253 0751 1552 2128	0524 1157 1813	1.6F 2.8E 1.8F
14 M	0348 0823 1650 2238	0040 0610 1251 1905	1.4E 1.3F 2.7E 1.6F
15 Tu ◐	0455 0856 1751	0151 0659 1356 2001	1.1E 1.0F 2.5E 1.4F
16 W	0006 0615 0933 1857	0304 0752 1503 2108	1.0E 0.6F 2.3E 1.2F
17 Th	0136 0743 1021 2004	0415 0853 1608 2329	1.0E 0.3F 2.2E 1.2F
18 F	0243 2108	0527 1009 1712	1.1E * 2.1E
19 Sa	0334 1013 1355 2203	0031 0643 1155 1816	1.3F 1.4E 0.3F 2.1E
20 Su	0415 1058 1510 2249	0113 0739 1304 1915	1.4F 1.6E 0.6F 2.1E
21 M	0449 1137 1613 2331	0144 0815 1341 2006	1.5F 1.9E 0.8F 2.1E
22 Tu	0517 1212 1707	0201 0846 1412 2049	1.5F 2.1E 1.0F 2.1E
23 W ○	0542 1247 1755	0222 0917 1446 2127	1.4F 2.3E 1.1F 2.0E
24 Th	0604 1321 1838	0252 0947 1523 2203	1.4F 2.4E 1.3F 1.9E
25 F	0624 1355 1918	0327 1017 1603 2239	1.3F 2.4E 1.4F 1.7E
26 Sa	0640 1430 1958	0405 1046 1645 2315	1.2F 2.4E 1.4F 1.5E
27 Su	0655 1507 2038	0445 1112 1727 2356	1.0F 2.3E 1.5F 1.3E
28 M	0712 1547 2123	0526 1134 1811	0.8F 2.1E 1.4F
29 Tu	0421 0735 1631 2217	0048 0609 1156 1857	1.0E 0.6F 2.0E 1.4F
30 W	0530 0801 1722 2329	0155 0653 1236 1946	0.8E 0.4F 1.8E 1.3F
31 Th ◑	1819	0304 0743 1403 2041	0.8E * 1.7E 1.2F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Rosario Strait, Washington, 2016

F–Flood, Dir. 335° True E–Ebb, Dir. 175° True

April

	Slack	Maximum	
	h m	h m	knots
1 F	0050	0405	0.9E
		0841	*
		1530	1.7E
	1922	2143	1.1F
2 Sa	0152	0501	1.0E
		0950	*
		1636	1.7E
	2025	2248	1.2F
3 Su	0236	0554	1.3E
	0959	1101	0.3F
	1228	1739	1.6E
	2123	2344	1.4F
4 M	0312	0643	1.7E
	1031	1204	0.7F
	1426	1840	1.9E
	2213		
5 Tu		0031	1.5F
	0345	0727	2.1E
	1104	1257	1.1F
	1545	1937	2.0E
	2258		
6 W		0114	1.7F
	0416	0808	2.5E
	1139	1346	1.6F
	1653	2029	2.1E
	2341		
7 Th ●		0156	1.7F
	0448	0847	2.8E
	1216	1434	1.9F
	1755	2116	2.1E
8 F	0024	0238	1.7F
	0521	0926	3.1E
	1256	1523	2.2F
	1852	2201	2.1E
9 Sa	0109	0323	1.5F
	0555	1004	3.2E
	1339	1614	2.3F
	1946	2247	1.9E
10 Su	0157	0410	1.4F
	0629	1043	3.2E
	1426	1704	2.3F
	2039	2336	1.7E
11 M	0253	0458	1.2F
	0704	1126	3.0E
	1518	1754	2.2F
	2134		
12 Tu		0034	1.4E
	0358	0548	0.9F
	0739	1217	2.7E
	1613	1844	2.0F
	2234		
13 W ◐		0141	1.3E
	0510	0639	0.6F
	0814	1322	2.3E
	1712	1936	1.7F
	2342		
14 Th		0252	1.2E
	0628	0734	0.4F
	0851	1434	2.0E
	1814	2032	1.4F
15 F	0050	0359	1.3E
		0837	*
		1542	1.8E
	1920	2141	1.2F
16 Sa	0147	0501	1.5E
		1002	*
		1647	1.6E
	2025	2333	1.1F
17 Su	0232	0559	1.7E
	1002	1230	0.4F
	1410	1751	1.5E
	2125		
18 M		0021	1.1F
	0308	0649	2.0E
	1039	1316	0.7F
	1527	1854	1.5E
	2217		
19 Tu		0045	1.1F
	0339	0730	2.2E
	1112	1351	1.0F
	1630	1949	1.6E
	2303		
20 W		0108	1.1F
	0406	0806	2.4E
	1145	1414	1.2F
	1723	2034	1.6E
	2345		
21 Th ○		0139	1.1F
	0431	0840	2.5E
	1216	1435	1.4F
	1809	2113	1.6E
22 F	0025	0213	1.0F
	0451	0912	2.6E
	1248	1505	1.6F
	1851	2150	1.6E
23 Sa	0106	0251	0.9F
	0509	0942	2.6E
	1319	1542	1.7F
	1929	2227	1.5E
24 Su	0149	0331	0.8F
	0525	1010	2.6E
	1350	1622	1.8F
	2007	2305	1.4E
25 M	0238	0413	0.6F
	0546	1032	2.4E
	1423	1704	1.8F
	2045	2348	1.2E
26 Tu	0335	0457	0.4F
	0611	1049	2.3E
	1459	1747	1.8F
	2125		
27 W		0038	1.1E
	0439	0542	0.3F
	0639	1111	2.2E
	1539	1831	1.8F
	2210		
28 Th		0139	1.0E
		0630	*
		1147	1.9E
	1625	1917	1.6F
	2301		
29 F ◑		0241	1.0E
		0722	*
		1241	1.7E
	1716	2006	1.5F
	2354		
30 Sa		0337	1.2E
		0820	*
		1438	1.4E
	1815	2100	1.4F

May

	Slack	Maximum	
	h m	h m	knots
1 Su	0043	0426	1.5E
		0928	*
		1601	1.4E
	1920	2159	1.3F
2 M	0125	0513	1.8E
	0928	1042	0.4F
	1255	1709	1.3E
	2029	2257	1.3F
3 Tu	0202	0600	2.1E
	1002	1151	0.9F
	1445	1815	1.4E
	2132	2349	1.3F
4 W	0237	0646	2.5E
	1037	1246	1.4F
	1603	1917	1.5E
	2227		
5 Th		0037	1.4F
	0312	0731	2.9E
	1114	1335	1.9F
	1710	2014	1.6E
	2318		
6 F ●		0122	1.4F
	0347	0815	3.2E
	1153	1422	2.2F
	1810	2105	1.7E
7 Sa	0007	0207	1.3F
	0424	0857	3.4E
	1233	1509	2.5F
	1905	2152	1.7E
8 Su	0057	0253	1.2F
	0502	0938	3.5E
	1316	1559	2.6F
	1955	2239	1.7E
9 M	0153	0343	1.0F
	0541	1019	3.3E
	1401	1648	2.5F
	2042	2329	1.6E
10 Tu	0255	0434	0.8F
	0620	1102	3.0E
	1450	1736	2.4F
	2130		
11 W		0024	1.5E
	0404	0527	0.6F
	0659	1150	2.6E
	1541	1823	2.2F
	2219		
12 Th		0127	1.5E
	0516	0621	0.4F
	0737	1250	2.2E
	1634	1910	1.9F
	2309		
13 F ◐		0233	1.5E
		0718	*
		1401	1.7E
	1730	1958	1.6F
14 Sa	0000	0333	1.7E
		0820	*
		1511	1.4E
	1829	2049	1.3F
15 Su	0046	0426	1.9E
		0957	*
		1616	1.2E
	1931	2146	1.1F
16 M	0126	0514	2.1E
	0938	1219	0.5F
	1415	1718	1.1E
	2036	2245	0.9F
17 Tu	0200	0600	2.3E
	1012	1304	0.8F
	1535	1822	1.0E
	2136	2336	0.9F
18 W	0230	0643	2.4E
	1045	1340	1.1F
	1639	1924	1.1E
	2230		
19 Th		0019	0.8F
	0256	0724	2.6E
	1116	1406	1.4F
	1732	2016	1.2E
	2319		
20 F		0058	0.8F
	0318	0802	2.7E
	1148	1423	1.6F
	1818	2059	1.2E
21 Sa ○	0005	0137	0.7F
	0337	0838	2.7E
	1218	1448	1.8F
	1858	2137	1.3E
22 Su	0051	0217	0.6F
	0357	0910	2.8E
	1249	1522	2.0F
	1935	2215	1.3E
23 M	0140	0259	0.5F
	0421	0940	2.7E
	1320	1601	2.1F
	2010	2254	1.3E
24 Tu	0235	0343	0.3F
	0450	1004	2.6E
	1352	1643	2.1F
	2044	2336	1.2E
25 W		0430	*
		1024	2.5E
	1426	1725	2.1F
	2118		
26 Th		0023	1.2E
		0519	*
		1049	2.3E
	1503	1808	2.1F
	2152		
27 F		0116	1.2E
		0610	*
		1123	2.0E
	1544	1851	1.9F
	2228		
28 Sa		0212	1.4E
		0703	*
		1213	1.7E
	1630	1936	1.8F
	2304		
29 Su ◑		0303	1.6E
		0801	*
		1348	1.3E
	1721	2024	1.6F
	2342		
30 M		0350	1.9E
		0907	*
		1532	1.1E
	1819	2117	1.4F
31 Tu	0021	0436	2.2E
	0852	1022	0.6F
	1318	1643	1.0E
	1929	2214	1.2F

June

	Slack	Maximum	
	h m	h m	knots
1 W	0059	0522	2.6E
	0933	1138	1.0F
	1501	1751	1.0E
	2048	2310	1.2F
2 Th	0139	0610	2.9E
	1013	1238	1.6F
	1619	1859	1.1E
	2158		
3 F		0003	1.1F
	0218	0659	3.2E
	1053	1326	2.0F
	1725	2001	1.2E
	2258		
4 Sa ●		0052	1.1F
	0258	0748	3.4E
	1134	1412	2.3F
	1821	2055	1.4E
	2354		
5 Su		0140	1.0F
	0339	0834	3.5E
	1215	1458	2.5F
	1910	2143	1.5E
6 M	0049	0229	0.9F
	0421	0918	3.5E
	1258	1545	2.6F
	1954	2229	1.6E
7 Tu	0148	0320	0.7F
	0504	1001	3.3E
	1341	1632	2.6F
	2035	2317	1.6E
8 W	0251	0413	0.6F
	0548	1044	3.0E
	1426	1717	2.4F
	2114		
9 Th		0008	1.6E
	0358	0508	0.4F
	0632	1129	2.5E
	1512	1800	2.2F
	2152		
10 F		0103	1.7E
	0504	0603	0.3F
	0715	1221	2.0E
	1559	1841	2.0F
	2229		
11 Sa		0202	1.8E
		0658	*
		1326	1.6E
	1647	1923	1.7F
	2306		
12 Su ◐		0257	1.9E
		0756	*
		1435	1.2E
	1736	2007	1.4F
	2342		
13 M		0346	2.1E
		0907	*
		1540	0.9E
	1832	2055	1.1F
14 Tu	0017	0431	2.2E
	0859	1155	0.5F
	1403	1642	0.8E
	1938	2148	0.9F
15 W	0050	0515	2.4E
	0938	1243	0.8F
	1529	1745	0.7E
	2050	2243	0.7F
16 Th	0120	0559	2.5E
	1013	1320	1.2F
	1635	1853	0.7E
	2157	2335	0.6F
17 F	0147	0644	2.6E
	1047	1349	1.4F
	1729	1957	0.9E
	2254		
18 Sa		0022	0.6F
	0212	0726	2.7E
	1120	1407	1.7F
	1814	2044	1.0E
	2346		
19 Su		0105	0.5F
	0239	0806	2.8E
	1152	1429	1.9F
	1853	2123	1.1E
20 M ○	0035	0148	0.5F
	0309	0843	2.8E
	1224	1502	2.1F
	1927	2200	1.2E
21 Tu	0125	0232	0.4F
	0343	0917	2.8E
	1256	1540	2.2F
	1958	2237	1.3E
22 W	0217	0318	0.3F
	0420	0947	2.7E
	1328	1620	2.2F
	2026	2315	1.4E
23 Th		0408	*
		1013	2.6E
	1402	1701	2.3F
	2053	2357	1.4E
24 F		0459	*
		1040	2.3E
	1437	1742	2.2F
	2120		
25 Sa		0043	1.6E
	0457	0552	0.3F
	0647	1115	2.0E
	1515	1824	2.1F
	2147		
26 Su		0133	1.7E
	0546	0645	0.3F
	0748	1203	1.6E
	1557	1907	1.9F
	2216		
27 M ◑		0224	2.0E
	0635	0742	0.4F
	0901	1332	1.2E
	1544	1952	1.7F
	2247		
28 Tu		0313	2.2E
	0725	0845	0.5F
	1101	1510	0.9E
	1737	2041	1.4F
	2323		
29 W		0401	2.5E
	0815	0958	0.8F
	1331	1622	0.8E
	1845	2137	1.1F
30 Th	0005	0450	2.8E
	0904	1127	1.2F
	1512	1732	0.7E
	2015	2236	1.0F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Rosario Strait, Washington, 2016

F–Flood, Dir. 335° True E–Ebb, Dir. 175° True

July

	Slack	Maximum	
	h m	h m	knots
1 F	0050	0541	3.0E
	0950	1237	1.6F
	1628	1843	0.8E
	2140	2334	0.9F
2 Sa	0137	0634	3.2E
	1035	1324	2.0F
	1728	1951	1.0E
	2248		
3 Su		0029	0.8F
	0225	0727	3.3E
	1118	1407	2.3F
	1818	2046	1.2E
	2346		
4 M ●		0120	0.8F
	0312	0818	3.4E
	1201	1449	2.4F
	1901	2133	1.5E
5 Tu	0041	0210	0.7F
	0401	0904	3.3E
	1242	1531	2.5F
	1938	2216	1.6E
6 W	0137	0302	0.6F
	0450	0948	3.1E
	1324	1612	2.4F
	2012	2258	1.7E
7 Th	0234	0355	0.6F
	0539	1029	2.8E
	1405	1652	2.3F
	2044	2342	1.8E
8 F	0333	0449	0.5F
	0629	1111	2.4E
	1446	1731	2.1F
	2113		
9 Sa		0029	1.9E
	0432	0542	0.4F
	0717	1156	1.9E
	1527	1810	1.9F
	2141		
10 Su		0120	1.9E
	0528	0634	0.4F
	0806	1250	1.5E
	1608	1849	1.7F
	2209		
11 M ◐		0211	2.0E
	0623	0726	0.3F
	0907	1356	1.1E
	1651	1930	1.4F
	2236		
12 Tu		0301	2.1E
	0717	0823	0.3F
	1103	1503	0.8E
	1741	2014	1.1F
	2303		
13 W		0347	2.2E
	0808	0936	0.4F
	1328	1606	0.6E
	1845	2103	0.8F
	2331		
14 Th		0433	2.3E
	0855	1212	0.7F
	1506	1710	0.5E
	2010	2158	0.6F
15 F	0003	0519	2.4E
	0937	1254	1.1F
	1614	1819	0.6E
	2130	2256	0.4F

	Slack	Maximum	
	h m	h m	knots
16 Sa	0040	0606	2.5E
	1016	1325	1.4F
	1708	1931	0.7E
	2235	2350	0.4F
17 Su	0121	0653	2.6E
	1052	1345	1.6F
	1751	2024	0.9E
	2328		
18 M		0039	0.4F
	0203	0739	2.7E
	1127	1405	1.9F
	1827	2102	1.1E
19 Tu ○	0014	0125	0.4F
	0247	0820	2.8E
	1201	1437	2.1F
	1858	2137	1.3E
20 W	0057	0211	0.5F
	0333	0859	2.8E
	1234	1513	2.2F
	1923	2211	1.5E
21 Th	0140	0258	0.5F
	0423	0934	2.7E
	1307	1553	2.2F
	1947	2246	1.7E
22 F	0225	0348	0.6F
	0518	1007	2.6E
	1341	1633	2.2F
	2011	2323	1.8E
23 Sa	0312	0440	0.6F
	0615	1040	2.3E
	1416	1714	2.2F
	2035		
24 Su		0003	2.0E
	0401	0533	0.7F
	0715	1118	2.0E
	1453	1756	2.0F
	2100		
25 M		0048	2.1E
	0451	0626	0.8F
	0819	1207	1.5E
	1535	1838	1.8F
	2126		
26 Tu ◑		0140	2.3E
	0544	0721	0.8F
	0936	1330	1.1E
	1622	1923	1.6F
	2157		
27 W		0234	2.4E
	0639	0821	0.9F
	1128	1455	0.8E
	1718	2011	1.2F
	2233		
28 Th		0329	2.6E
	0737	0931	1.0F
	1334	1607	0.7E
	1833	2107	0.9F
	2317		
29 F		0423	2.8E
	0834	1117	1.2F
	1509	1718	0.7E
	2013	2209	0.7F
30 Sa	0011	0519	2.9E
	0928	1237	1.6F
	1617	1831	0.8E
	2138	2314	0.6F
31 Su	0112	0616	3.0E
	1018	1323	1.9F
	1711	1942	1.1E
	2244		

August

	Slack	Maximum	
	h m	h m	knots
1 M		0014	0.6F
	0213	0713	3.0E
	1104	1403	2.1F
	1755	2036	1.4E
	2339		
2 Tu ●		0108	0.7F
	0312	0806	3.0E
	1146	1438	2.2F
	1832	2118	1.6E
3 W	0029	0159	0.7F
	0408	0853	3.0E
	1227	1511	2.2F
	1905	2155	1.8E
4 Th	0117	0248	0.7F
	0504	0936	2.8E
	1306	1545	2.1F
	1934	2232	2.0E
5 F	0206	0338	0.7F
	0556	1016	2.5E
	1344	1621	2.0F
	2000	2310	2.0E
6 Sa	0255	0429	0.7F
	0646	1054	2.2E
	1422	1658	1.9F
	2024	2349	2.0E
7 Su	0345	0518	0.7F
	0732	1134	1.8E
	1459	1735	1.7F
	2046		
8 M		0031	2.0E
	0435	0606	0.7F
	0819	1220	1.4E
	1538	1814	1.5F
	2107		
9 Tu		0118	2.0E
	0525	0653	0.7F
	0913	1319	1.0E
	1621	1854	1.2F
	2125		
10 W ◐		0209	2.0E
	0616	0744	0.6F
	1031	1429	0.7E
	1713	1937	0.9F
	2145		
11 Th		0300	2.0E
	0709	0840	0.6F
	1233	1536	0.6E
	1822	2025	0.6F
	2211		
12 F		0350	2.1E
	0803	0951	0.7F
	1425	1640	0.6E
	1954	2121	0.4F
	2246		
13 Sa		0439	2.1E
	0854	1216	0.9F
	1534	1747	0.6E
	2119	2223	0.3F
	2335		
14 Su		0530	2.2E
	0940	1249	1.2F
	1625	1856	0.8E
	2222	2324	0.3F
15 M	0040	0622	2.3E
	1022	1307	1.5F
	1705	1950	1.0E
	2308		

	Slack	Maximum	
	h m	h m	knots
16 Tu		0019	0.4F
	0148	0712	2.5E
	1100	1332	1.8F
	1737	2029	1.3E
	2347		
17 W		0107	0.6F
	0250	0759	2.6E
	1136	1405	1.9F
	1804	2103	1.6E
18 Th ○	0023	0154	0.6F
	0350	0842	2.6E
	1211	1442	2.1F
	1828	2137	1.8E
19 F	0100	0242	0.9F
	0450	0921	2.6E
	1246	1520	2.1F
	1853	2211	2.1E
20 Sa	0139	0331	1.1F
	0550	1000	2.5E
	1321	1601	2.1F
	1917	2245	2.3E
21 Su	0222	0422	1.2F
	0649	1038	2.2E
	1357	1643	2.0F
	1942	2322	2.4E
22 M	0309	0514	1.3F
	0748	1121	1.9E
	1438	1726	1.8F
	2008		
23 Tu		0003	2.5E
	0401	0607	1.4F
	0849	1214	1.5E
	1523	1811	1.6F
	2037		
24 W ◑		0054	2.5E
	0456	0700	1.3F
	1001	1327	1.1E
	1618	1857	1.3F
	2109		
25 Th		0155	2.5E
	0556	0757	1.3F
	1134	1445	0.9E
	1727	1947	1.0F
	2146		
26 F		0258	2.5E
	0658	0903	1.2F
	1323	1557	0.8E
	1855	2044	0.7F
	2233		
27 Sa		0400	2.5E
	0803	1050	1.2F
	1445	1707	0.9E
	2027	2151	0.5F
	2340		
28 Su		0501	2.5E
	0904	1223	1.5F
	1545	1820	1.1E
	2144	2304	0.4F
29 M	0110	0602	2.5E
	0958	1309	1.7F
	1632	1928	1.3E
	2241		
30 Tu		0013	0.6F
	0228	0701	2.6E
	1046	1346	1.8F
	1712	2016	1.6E
	2329		
31 W		0108	0.7F
	0334	0755	2.6E
	1129	1414	1.8F
	1745	2053	1.9E

September

	Slack	Maximum	
	h m	h m	knots
1 Th ●	0011	0155	0.9F
	0434	0842	2.5E
	1209	1439	1.8F
	1814	2127	2.1E
2 F	0052	0239	1.0F
	0528	0923	2.4E
	1247	1509	1.7F
	1840	2200	2.2E
3 Sa	0132	0323	1.1F
	0617	1002	2.2E
	1324	1543	1.6F
	1903	2234	2.3E
4 Su	0213	0407	1.1F
	0702	1039	2.0E
	1401	1620	1.5F
	1924	2307	2.2E
5 M	0255	0452	1.1F
	0745	1117	1.6E
	1439	1659	1.3F
	1942	2341	2.2E
6 Tu	0338	0537	1.1F
	0827	1159	1.3E
	1521	1740	1.1F
	1957		
7 W		0018	2.0E
	0424	0622	1.1F
	0915	1252	1.0E
	1611	1821	0.9F
	2014		
8 Th		0103	1.9E
	0513	0709	1.0F
	1015	1401	0.8E
	1713	1905	0.6F
	2036		
9 F ◐		0201	1.8E
	0605	0800	0.9F
	1144	1511	0.7E
	1832	1953	0.3F
	2103		
10 Sa		0302	1.8E
	0702	0858	0.9F
	1327	1616	0.7E
		2049	*
11 Su		0359	1.8E
	0801	1008	0.9F
	1436	1717	0.8E
		2155	*
12 M		0455	1.9E
	0856	1123	1.1F
	1522	1815	1.0E
		2303	*
13 Tu		0551	2.0E
	0945	1213	1.4F
	1558	1906	1.3E
	2245		
14 W		0002	0.5F
	0154	0646	2.1E
	1028	1251	1.6F
	1627	1947	1.6E
	2317		
15 Th		0053	0.8F
	0311	0738	2.2E
	1108	1328	1.7F
	1655	2024	2.0E
	2350		

	Slack	Maximum	
	h m	h m	knots
16 F ○		0140	1.1F
	0417	0825	2.3E
	1146	1406	1.8F
	1722	2100	2.3E
17 Sa	0024	0227	1.4F
	0518	0908	2.3E
	1223	1446	1.8F
	1749	2134	2.6E
18 Su	0101	0315	1.7F
	0617	0950	2.2E
	1301	1528	1.8F
	1817	2209	2.8E
19 M	0142	0405	1.8F
	0713	1032	2.0E
	1342	1611	1.6F
	1846	2245	2.9E
20 Tu	0227	0456	1.9F
	0808	1118	1.8E
	1428	1657	1.4F
	1917	2324	2.9E
21 W	0318	0547	1.9F
	0905	1213	1.4E
	1524	1745	1.2F
	1949		
22 Th		0012	2.7E
	0414	0639	1.8F
	1010	1321	1.2E
	1632	1834	0.9F
	2024		
23 F ◑		0116	2.5E
	0515	0733	1.6F
	1128	1435	1.0E
	1751	1927	0.6F
	2103		
24 Sa		0228	2.3E
	0619	0834	1.4F
	1256	1547	1.1E
	1916	2027	0.4F
	2150		
25 Su		0337	2.2E
	0726	0953	1.3F
	1405	1655	1.2E
		2139	*
26 M		0442	2.1E
	0832	1151	1.3F
	1458	1800	1.5E
	2146	2318	0.3F
27 Tu	0131	0546	2.0E
	0931	1240	1.4F
	1540	1859	1.7E
	2233		
28 W		0047	0.6F
	0253	0648	2.0E
	1023	1314	1.5F
	1615	1944	2.0E
	2313		
29 Th		0129	0.9F
	0400	0743	2.0E
	1108	1336	1.5F
	1645	2021	2.3E
	2350		
30 F ●		0202	1.1F
	0457	0830	2.0E
	1148	1400	1.4F
	1712	2054	2.4E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

Rosario Strait, Washington, 2016

F–Flood, Dir. 335° True E–Ebb, Dir. 175° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa	0025	0233	1.3F
	0547	0911	2.0E
	1227	1430	1.3F
	1736	2126	2.5E
2 Su	0100	0308	1.4F
	0632	0949	1.9E
	1305	1505	1.2F
	1757	2158	2.5E
3 M	0134	0346	1.5F
	0713	1025	1.7E
	1344	1543	1.1F
	1814	2227	2.5E
4 Tu	0209	0427	1.5F
	0752	1103	1.5E
	1427	1624	0.9F
	1829	2255	2.3E
5 W	0246	0509	1.5F
	0832	1144	1.3E
	1518	1706	0.7F
	1847	2317	2.2E
6 Th	0325	0553	1.5F
	0915	1235	1.0E
	1619	1750	0.5F
	1909	2337	2.0E
7 F	0409	0638	1.4F
	1006	1340	0.9E
	1731	1836	0.3F
	1934		
8 Sa ◐		0010	1.8E
	0458	0726	1.3F
	1111	1449	0.8E
		1926	*
9 Su		0125	1.6E
	0554	0818	1.2F
	1226	1551	0.9E
		2023	*
10 M		0312	1.5E
	0655	0917	1.1F
	1327	1645	1.1E
		2129	*
11 Tu		0418	1.5E
	0759	1020	1.2F
	1411	1735	1.4E
		2242	*
12 W		0519	1.6E
	0858	1119	1.3F
	1445	1820	1.7E
	2218	2347	0.6F
13 Th	0213	0619	1.7E
	0950	1207	1.4F
	1516	1903	2.1E
	2248		
14 F		0040	1.1F
	0331	0715	1.8E
	1036	1249	1.5F
	1545	1944	2.5E
	2320		
15 Sa ○		0127	1.5F
	0437	0807	1.9E
	1119	1330	1.6F
	1615	2023	2.8E
	2355		

	Slack	Maximum	
	h m	h m	knots
16 Su		0212	1.9F
	0537	0855	1.9E
	1201	1412	1.6F
	1646	2100	3.1E
17 M	0032	0259	2.2F
	0633	0940	1.9E
	1244	1455	1.5F
	1718	2137	3.3E
18 Tu	0112	0348	2.4F
	0726	1024	1.8E
	1331	1541	1.3F
	1753	2215	3.3E
19 W	0156	0438	2.4F
	0818	1112	1.7E
	1425	1630	1.1F
	1829	2255	3.1E
20 Th	0245	0528	2.3F
	0911	1206	1.5E
	1531	1721	0.9F
	1906	2341	2.8E
21 F	0339	0619	2.2F
	1007	1311	1.3E
	1645	1814	0.6F
	1944		
22 Sa ◑		0041	2.4E
	0437	0710	1.9F
	1110	1423	1.3E
	1803	1910	0.4F
	2024		
23 Su		0158	2.1E
	0539	0804	1.6F
	1216	1532	1.4E
		2012	*
24 M		0312	1.8E
	0644	0905	1.4F
	1315	1634	1.6E
		2131	*
25 Tu		0420	1.6E
	0750	1023	1.2F
	1402	1730	1.9E
	2139		
26 W		0010	0.4F
	0150	0525	1.5E
	0854	1144	1.2F
	1440	1821	2.1E
	2218		
27 Th		0100	0.8F
	0314	0629	1.5E
	0951	1220	1.1F
	1513	1905	2.4E
	2253		
28 F		0140	1.1F
	0420	0728	1.5E
	1041	1248	1.1F
	1541	1944	2.5E
	2326		
29 Sa		0210	1.3F
	0515	0817	1.5E
	1125	1319	1.1F
	1606	2020	2.7E
	2359		
30 Su ●		0230	1.5F
	0603	0859	1.5E
	1207	1353	1.0F
	1627	2053	2.7E
31 M	0031	0254	1.7F
	0644	0936	1.5E
	1249	1430	0.9F
	1645	2124	2.7E

November

	Slack	Maximum	
	h m	h m	knots
1 Tu	0102	0327	1.8F
	0722	1013	1.5E
	1333	1509	0.7F
	1701	2153	2.6E
2 W	0133	0405	1.9F
	0758	1051	1.4E
	1423	1551	0.6F
	1721	2218	2.5E
3 Th	0205	0446	1.9F
	0835	1133	1.2E
	1521	1636	0.4F
	1745	2235	2.3E
4 F	0239	0528	1.9F
	0913	1221	1.1E
		1722	*
		2254	2.2E
5 Sa	0317	0612	1.8F
	0955	1320	1.0E
		1811	*
		2323	1.9E
6 Su	0401	0657	1.7F
	1041	1423	1.1E
		1902	*
7 M ◐		0007	1.6E
	0449	0744	1.5F
	1130	1520	1.2E
		1959	*
8 Tu		0136	1.3E
	0544	0835	1.4F
	1217	1609	1.5E
		2105	*
9 W		0338	1.2E
	0647	0931	1.3F
	1258	1654	1.8E
		2219	*
10 Th		0446	1.2E
	0756	1028	1.2F
	1334	1738	2.1E
	2147	2331	0.7F
11 F	0227	0550	1.2E
	0903	1122	1.2F
	1408	1822	2.5E
	2220		
12 Sa		0028	1.3F
	0346	0653	1.3E
	1001	1211	1.3F
	1441	1906	2.9E
	2255		
13 Su		0115	1.8F
	0452	0751	1.4E
	1053	1257	1.3F
	1516	1949	3.2E
	2331		
14 M ○		0200	2.2F
	0551	0842	1.5E
	1141	1341	1.3F
	1552	2031	3.4E
15 Tu	0010	0246	2.5F
	0644	0930	1.6E
	1230	1427	1.2F
	1630	2112	3.5E

	Slack	Maximum	
	h m	h m	knots
16 W	0050	0333	2.6F
	0733	1016	1.7E
	1323	1515	1.0F
	1710	2153	3.5E
17 Th	0134	0422	2.7F
	0820	1104	1.6E
	1424	1607	0.8F
	1751	2235	3.2E
18 F	0220	0511	2.6F
	0906	1156	1.6E
	1533	1701	0.6F
	1833	2320	2.9E
19 Sa	0310	0559	2.4F
	0953	1256	1.5E
	1645	1756	0.4F
	1915		
20 Su		0014	2.4E
	0403	0646	2.1F
	1041	1402	1.6E
	1759	1853	0.3F
	1957		
21 M ◑		0126	1.9E
	0458	0733	1.8F
	1130	1506	1.7E
		1955	*
22 Tu		0241	1.5E
	0557	0823	1.5F
	1217	1602	2.0E
		2114	*
23 W		0350	1.2E
	0700	0918	1.2F
	1300	1652	2.2E
	2117		
24 Th		0001	0.5F
	0157	0456	1.0E
	0807	1017	1.0F
	1337	1739	2.4E
	2155		
25 F		0051	0.9F
	0325	0602	1.0E
	0912	1114	0.9F
	1409	1823	2.5E
	2229		
26 Sa		0130	1.2F
	0431	0708	1.0E
	1010	1200	0.8F
	1438	1906	2.7E
	2302		
27 Su		0203	1.5F
	0525	0805	1.1E
	1102	1240	0.8F
	1502	1945	2.8E
	2334		
28 M		0226	1.7F
	0610	0848	1.2E
	1149	1320	0.7F
	1522	2022	2.8E
29 Tu ●	0005	0242	1.8F
	0650	0925	1.3E
	1235	1359	0.6F
	1542	2056	2.8E
30 W	0036	0310	2.0F
	0725	1002	1.3E
	1323	1440	0.5F
	1605	2127	2.8E

December

	Slack	Maximum	
	h m	h m	knots
1 Th	0106	0345	2.1F
	0758	1039	1.3E
	1416	1524	0.4F
	1632	2154	2.6E
2 F	0137	0424	2.1F
	0830	1119	1.3E
		1610	*
		2214	2.5E
3 Sa	0209	0505	2.1F
	0902	1202	1.2E
		1658	*
		2234	2.3E
4 Su	0243	0547	2.1F
	0933	1252	1.3E
		1749	*
		2302	2.0E
5 M	0320	0629	2.0F
	1005	1347	1.3E
		1841	*
		2342	1.7E
6 Tu	0402	0712	1.8F
	1037	1440	1.5E
		1937	*
7 W ◐		0042	1.3E
	0448	0758	1.6F
	1110	1528	1.8E
		2039	*
8 Th		0256	1.0E
	0542	0848	1.4F
	1146	1613	2.1E
	2035	2150	0.4F
9 F	0033	0415	0.9E
	0647	0943	1.2F
	1224	1658	2.5E
	2114	2310	0.9F
10 Sa	0237	0524	0.8E
	0809	1040	1.1F
	1304	1744	2.8E
	2153		
11 Su		0016	1.4F
	0359	0632	0.9E
	0928	1136	1.0F
	1346	1833	3.1E
	2232		
12 M		0105	1.9F
	0505	0736	1.1E
	1032	1227	1.0F
	1429	1922	3.3E
	2312		
13 Tu ○		0150	2.3F
	0600	0832	1.3E
	1128	1316	1.0F
	1512	2009	3.5E
	2353		
14 W		0235	2.6F
	0648	0920	1.5E
	1222	1405	0.9F
	1557	2055	3.6E
15 Th	0034	0320	2.7F
	0731	1006	1.6E
	1317	1455	0.8F
	1643	2138	3.5E

	Slack	Maximum	
	h m	h m	knots
16 F	0117	0407	2.7F
	0811	1052	1.7E
	1417	1548	0.7F
	1731	2221	3.2E
17 Sa	0201	0452	2.6F
	0849	1140	1.7E
	1521	1643	0.6F
	1819	2305	2.8E
18 Su	0246	0536	2.4F
	0926	1232	1.8E
	1628	1739	0.5F
	1906	2354	2.3E
19 M	0332	0619	2.2F
	1002	1329	1.9E
	1733	1835	0.3F
	1955		
20 Tu ◑		0054	1.7E
	0420	0701	1.9F
	1039	1427	2.0E
		1932	*
21 W		0206	1.3E
	0510	0744	1.5F
	1115	1521	2.1E
		2038	*
22 Th		0315	0.9E
	0605	0831	1.2F
	1151	1610	2.3E
	2037	2335	0.4F
23 F	0143	0421	0.7E
	0711	0922	0.9F
	1227	1656	2.4E
	2121		
24 Sa		0031	0.8F
	0319	0527	0.6E
	0828	1019	0.7F
	1300	1742	2.5E
	2200		
25 Su		0113	1.2F
	0427	0640	0.7E
	0940	1115	0.6F
	1332	1828	2.6E
	2235		
26 M		0147	1.4F
	0520	0753	0.8E
	1041	1205	0.5F
	1401	1912	2.7E
	2309		
27 Tu		0215	1.7F
	0604	0839	1.0E
	1133	1250	0.5F
	1429	1954	2.8E
	2341		
28 W ●		0231	1.8F
	0642	0914	1.1E
	1221	1334	0.4F
	1500	2032	2.8E
29 Th	0013	0253	2.0F
	0714	0948	1.3E
	1308	1417	0.4F
	1534	2107	2.8E
30 F	0045	0325	2.1F
	0743	1022	1.4E
	1357	1502	0.3F
	1611	2138	2.7E
31 Sa	0116	0402	2.2F
	0809	1058	1.4E
	1447	1549	0.3F
	1652	2205	2.6E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.
* Current weak and variable.

San Juan Channel (south entrance), Washington, 2016

F–Flood, Dir. 010° True E–Ebb, Dir. 180° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◑	0315 1011 1720 2302	0019 0633 1335 1937	1.3E 2.4F 2.4E 1.3F
2 Sa	0413 1052 1807	0130 0723 1420 2053	1.1E 2.0F 2.5E 1.6F
3 Su	0025 0521 1133 1852	0239 0821 1503 2158	1.0E 1.7F 2.7E 2.1F
4 M	0131 0635 1213 1933	0345 0921 1545 2245	1.1E 1.5F 2.9E 2.6F
5 Tu	0225 0745 1251 2012	0451 1015 1628 2324	1.2E 1.5F 3.0E 3.1F
6 W	0313 0845 1328 2048	0550 1102 1711	1.5E 1.5F 3.2E
7 Th	0356 0935 1406 2124	0001 0637 1145 1754	3.6F 1.8E 1.5F 3.4E
8 F	0436 1019 1445 2158	0037 0716 1227 1836	3.9F 2.1E 1.5F 3.6E
9 Sa ●	0514 1102 1527 2234	0115 0752 1309 1916	4.2F 2.4E 1.6F 3.7E
10 Su	0551 1145 1613 2311	0155 0829 1355 1957	4.4F 2.6E 1.6F 3.8E
11 M	0628 1231 1702 2352	0238 0906 1444 2039	4.5F 2.8E 1.7F 3.7E
12 Tu	0705 1319 1756	0322 0947 1537 2124	4.4F 2.9E 1.7F 3.4E
13 W	0036 0743 1412 1857	0407 1033 1631 2215	4.2F 2.9E 1.8F 2.9E
14 Th	0125 0823 1506 2008	0453 1124 1727 2316	3.9F 3.0E 1.9F 2.4E
15 F	0221 0907 1601 2136	0542 1221 1829	3.4F 3.1E 2.1F
16 Sa ◐	0324 0954 1658 2313	0028 0635 1319 1939	2.0E 2.9F 3.2E 2.3F
17 Su	0436 1045 1755	0146 0734 1416 2058	1.7E 2.3F 3.4E 2.7F
18 M	0040 0557 1137 1852	0305 0842 1512 2211	1.6E 1.9F 3.5E 3.2F
19 Tu	0151 0718 1230 1946	0423 0951 1607 2308	1.7E 1.7F 3.6E 3.7F
20 W	0251 0829 1321 2035	0538 1052 1702 2356	1.9E 1.7F 3.7E 4.1F
21 Th	0344 0928 1411 2120	0637 1143 1755	2.2E 1.7F 3.8E
22 F	0431 1018 1459 2202	0040 0725 1230 1842	4.3F 2.4E 1.7F 3.8E
23 Sa ○	0513 1103 1546 2241	0120 0804 1314 1923	4.3F 2.6E 1.7F 3.7E
24 Su	0551 1146 1631 2319	0200 0839 1358 2002	4.2F 2.6E 1.6F 3.5E
25 M	0625 1229 1716 2355	0238 0910 1443 2038	4.0F 2.6E 1.6F 3.2E
26 Tu	0658 1312 1801	0315 0942 1527 2115	3.8F 2.6E 1.6F 2.8E
27 W	0031 0729 1356 1847	0352 1016 1613 2154	3.5F 2.5E 1.6F 2.4E
28 Th	0108 0759 1441 1940	0429 1054 1658 2240	3.1F 2.4E 1.5F 1.9E
29 F	0149 0830 1527 2045	0508 1138 1747 2335	2.7F 2.3E 1.5F 1.5E
30 Sa	0235 0904 1615 2209	0549 1227 1840	2.3F 2.3E 1.6F
31 Su ◑	0331 0942 1704 2339	0042 0635 1319 1944	1.1E 1.8F 2.3E 1.7F

February

	Slack	Maximum	
	h m	h m	knots
1 M	0440 1026 1755	0154 0730 1409 2056	1.0E 1.4F 2.4E 2.0F
2 Tu	0052 0600 1117 1845	0304 0834 1459 2201	1.0E 1.2F 2.6E 2.5F
3 W	0151 0718 1208 1932	0412 0939 1548 2250	1.2E 1.2F 2.8E 3.0F
4 Th	0239 0822 1257 2015	0515 1035 1638 2332	1.5E 1.3F 3.0E 3.5F
5 F	0323 0912 1345 2057	0607 1123 1727	1.8E 1.5F 3.3E
6 Sa	0403 0955 1433 2137	0011 0649 1208 1815	3.9F 2.3E 1.7F 3.6E
7 Su	0441 1035 1523 2216	0051 0726 1252 1900	4.3F 2.6E 2.0F 3.8E
8 M ●	0518 1115 1614 2257	0131 0803 1338 1944	4.4F 3.0E 2.2F 3.9E
9 Tu	0554 1157 1708 2341	0214 0840 1427 2028	4.5F 3.2E 2.4F 3.8E
10 W	0630 1242 1805	0258 0919 1519 2115	4.3F 3.4E 2.6F 3.5E
11 Th	0027 0707 1331 1905	0344 1002 1612 2206	4.0F 3.4E 2.7F 3.1E
12 F	0118 0745 1424 2013	0431 1049 1708 2305	3.6F 3.4E 2.7F 2.5E
13 Sa	0215 0826 1521 2134	0519 1144 1807	3.0F 3.2E 2.8F
14 Su ◐	0321 0913 1620 2304	0017 0611 1244 1914	2.0E 2.4F 3.2E 2.8F
15 M	0435 1008 1722	0139 0711 1348 2033	1.7E 1.8F 3.1E 2.9F
16 Tu	0027 0558 1111 1825	0302 0824 1450 2153	1.6E 1.5F 3.1E 3.2F
17 W	0136 0718 1215 1924	0421 0943 1551 2255	1.7E 1.4F 3.2E 3.5F
18 Th	0234 0825 1315 2018	0530 1048 1651 2343	2.0E 1.5F 3.2E 3.8F
19 F	0322 0918 1409 2105	0625 1139 1746	2.3E 1.7F 3.3E
20 Sa	0405 1002 1500 2147	0024 0708 1223 1833	3.9F 2.5E 1.8F 3.3E
21 Su	0442 1040 1547 2225	0100 0742 1302 1913	3.9F 2.7E 1.9F 3.3E
22 M ○	0515 1116 1632 2301	0135 0811 1341 1949	3.7F 2.7E 2.0F 3.2E
23 Tu	0545 1151 1714 2335	0208 0837 1420 2022	3.6F 2.8E 2.1F 3.0E
24 W	0613 1226 1756	0242 0903 1500 2056	3.3F 2.8E 2.1F 2.7E
25 Th	0010 0640 1301 1839	0317 0932 1541 2133	3.0F 2.7E 2.1F 2.4E
26 F	0046 0705 1339 1925	0354 1004 1623 2214	2.7F 2.6E 2.1F 2.0E
27 Sa	0126 0732 1420 2019	0432 1041 1708 2303	2.3F 2.5E 2.1F 1.6E
28 Su	0212 0800 1506 2127	0512 1126 1756	1.9F 2.3E 2.1F
29 M	0310 0835 1556 2248	0005 0557 1219 1851	1.3E 1.5F 2.2E 2.1F

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑	0420 0920 1650	0116 0650 1317 1956	1.1E 1.2F 2.2E 2.2F
2 W	0004 0540 1021 1748	0227 0755 1415 2107	1.2E 1.0F 2.3E 2.4F
3 Th	0105 0657 1131 1845	0333 0907 1511 2208	1.4E 1.0F 2.5E 2.9F
4 F	0155 0758 1236 1938	0434 1011 1606 2257	1.7E 1.3F 2.8E 3.4F
5 Sa	0239 0845 1334 2027	0527 1103 1701 2341	2.1E 1.7F 3.1E 3.8F
6 Su	0320 0926 1429 2113	0612 1150 1754	2.6E 2.1F 3.4E
7 M	0359 1005 1524 2158	0022 0653 1235 1844	4.1F 3.0E 2.6F 3.7E
8 Tu ●	0436 1044 1619 2243	0104 0732 1321 1932	4.2F 3.4E 3.0F 3.8E
9 W	0513 1124 1714 2330	0148 0810 1410 2019	4.2F 3.7E 3.3F 3.8E
10 Th	0550 1207 1811	0233 0849 1501 2107	3.9F 3.8E 3.5F 3.5E
11 F	0020 0627 1254 1910	0320 0931 1554 2158	3.5F 3.8E 3.6F 3.1E
12 Sa	0114 0705 1346 2014	0408 1016 1649 2258	3.0F 3.6E 3.5F 2.5E
13 Su	0216 0747 1442 2127	0459 1109 1746	2.5F 3.3E 3.4F
14 M	0325 0835 1543 2248	0010 0553 1211 1849	2.0E 1.9F 3.0E 3.1F
15 Tu ◐	0441 0936 1647	0135 0654 1320 2004	1.8E 1.4F 2.8E 3.0F
16 W	0004 0601 1053 1753	0257 0812 1429 2126	1.8E 1.1F 2.7E 3.0F
17 Th	0108 0714 1209 1857	0408 0941 1536 2231	2.0E 1.2F 2.6E 3.2F
18 F	0201 0813 1315 1954	0508 1047 1639 2319	2.2E 1.5F 2.7E 3.3F
19 Sa	0246 0859 1412 2044	0558 1134 1735 2358	2.5E 1.8F 2.7E 3.3F
20 Su	0324 0938 1503 2127	0638 1213 1822	2.7E 2.1F 2.8E
21 M	0358 1012 1549 2206	0032 0709 1248 1901	3.3F 2.8E 2.3F 2.8E
22 Tu	0429 1043 1632 2242	0103 0735 1322 1936	3.1F 2.9E 2.5F 2.8E
23 W ○	0457 1113 1713 2317	0135 0759 1357 2008	3.0F 3.0E 2.6F 2.7E
24 Th	0523 1143 1753 2353	0207 0824 1434 2041	2.7F 3.0E 2.7F 2.5E
25 F	0547 1213 1833	0242 0852 1512 2116	2.4F 2.9E 2.7F 2.3E
26 Sa	0031 0611 1246 1916	0320 0922 1553 2155	2.1F 2.8E 2.7F 2.0E
27 Su	0113 0636 1322 2003	0359 0956 1636 2242	1.8F 2.6E 2.7F 1.7E
28 M	0204 0704 1404 2059	0441 1037 1721 2339	1.5F 2.4E 2.6F 1.5E
29 Tu	0306 0739 1452 2206	0528 1127 1812	1.2F 2.2E 2.6F
30 W	0416 0825 1548 2315	0047 0621 1228 1909	1.4E 0.9F 2.1E 2.5F
31 Th ◑	0529 0933 1649	0157 0725 1334 2015	1.5E 0.8F 2.1E 2.6F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

San Juan Channel (south entrance), Washington, 2016

F–Flood, Dir. 010° True E–Ebb, Dir. 180° True

April

	Slack	Maximum	
	h m	h m	knots
1 F	0015	0258	1.8E
	0636	0838	0.9F
	1103	1436	2.2E
	1753	2121	2.9F
2 Sa	0106	0353	2.1E
	0730	0947	1.4F
	1222	1537	2.5E
	1857	2218	3.3F
3 Su	0150	0444	2.6E
	0815	1043	2.0F
	1328	1636	2.8E
	1955	2307	3.6F
4 M	0232	0532	3.0E
	0856	1132	2.6F
	1428	1735	3.1E
	2049	2351	3.7F
5 Tu	0311	0616	3.5E
	0934	1218	3.2F
	1525	1830	3.4E
	2140		
6 W		0035	3.8F
	0350	0658	3.8E
	1013	1305	3.7F
	1622	1921	3.6E
	2230		
7 Th ●		0120	3.6F
	0428	0739	4.1E
	1054	1353	4.1F
	1718	2011	3.5E
	2320		
8 F		0207	3.3F
	0507	0820	4.2E
	1137	1444	4.2F
	1814	2100	3.3E
9 Sa	0014	0255	2.6F
	0546	0902	4.1E
	1223	1537	4.3F
	1911	2152	3.0E
10 Su	0113	0347	2.3F
	0626	0947	3.7E
	1313	1630	4.1F
	2011	2252	2.5E
11 M	0219	0440	1.9F
	0710	1038	3.3E
	1408	1725	3.8F
	2116		
12 Tu		0005	2.2E
	0329	0536	1.4F
	0801	1138	2.8E
	1508	1824	3.4F
	2225		
13 W ◐		0127	2.1E
	0443	0640	1.1F
	0909	1250	2.4E
	1611	1930	3.1F
	2332		
14 Th		0240	2.1E
	0555	0800	1.0F
	1038	1404	2.2E
	1716	2045	2.9F
15 F	0029	0340	2.3E
	0659	0932	1.2F
	1203	1514	2.1E
	1821	2152	2.8F
16 Sa	0117	0433	2.5E
	0751	1036	1.6F
	1312	1617	2.1E
	1921	2243	2.8F
17 Su	0158	0518	2.7E
	0832	1121	2.0F
	1410	1715	2.2E
	2015	2323	2.8F
18 M	0234	0556	2.8E
	0908	1157	2.4F
	1501	1805	2.3E
	2101	2356	2.7F
19 Tu	0306	0627	3.0E
	0940	1230	2.7F
	1547	1847	2.3E
	2143		
20 W		0028	2.5F
	0335	0654	3.1E
	1010	1301	2.9F
	1630	1922	2.4E
	2223		
21 Th ○		0059	2.4F
	0402	0720	3.1E
	1038	1334	3.1F
	1710	1956	2.3E
	2301		
22 F		0133	2.1F
	0428	0747	3.1E
	1106	1409	3.2F
	1749	2029	2.3E
	2340		
23 Sa		0209	1.9F
	0452	0816	3.1E
	1135	1447	3.3F
	1828	2103	2.2E
24 Su	0022	0248	1.6F
	0518	0847	3.0E
	1205	1527	3.3F
	1908	2142	2.0E
25 M	0109	0331	1.4F
	0545	0921	2.8E
	1239	1609	3.3F
	1951	2226	1.9E
26 Tu	0205	0416	1.1F
	0617	1000	2.6E
	1318	1654	3.2F
	2039	2320	1.8E
27 W	0307	0505	0.9F
	0657	1047	2.3E
	1404	1741	3.1F
	2134		
28 Th		0024	1.8E
	0411	0559	0.8F
	0749	1148	2.1E
	1459	1834	3.0F
	2232		
29 F ◑		0128	1.9E
	0513	0701	0.8F
	0904	1257	2.0E
	1600	1933	3.0F
	2327		
30 Sa		0225	2.2E
	0610	0812	1.1F
	1045	1405	2.1E
	1706	2036	3.0F

May

	Slack	Maximum	
	h m	h m	knots
1 Su	0017	0316	2.6E
	0659	0923	1.6F
	1213	1510	2.2E
	1816	2137	3.1F
2 M	0101	0405	3.0E
	0744	1023	2.3F
	1324	1613	2.5E
	1923	2232	3.2F
3 Tu	0143	0453	3.5E
	0826	1114	3.1F
	1427	1717	2.7E
	2025	2320	3.2F
4 W	0224	0540	3.9E
	0906	1202	3.8F
	1526	1817	2.9E
	2123		
5 Th		0007	3.1F
	0304	0626	4.2E
	0947	1249	4.3F
	1624	1912	3.1E
	2218		
6 F ●		0054	2.9F
	0344	0710	4.3E
	1029	1338	4.6F
	1719	2004	3.2E
	2312		
7 Sa		0142	2.6F
	0425	0753	4.3E
	1112	1428	4.7F
	1814	2055	3.1E
8 Su	0009	0232	2.2F
	0507	0837	4.2E
	1157	1520	4.7F
	1907	2147	2.8E
9 M	0111	0326	1.8F
	0551	0922	3.8E
	1246	1612	4.4F
	2001	2244	2.6E
10 Tu	0216	0422	1.4F
	0639	1011	3.2E
	1338	1704	4.1F
	2057	2352	2.3E
11 W	0324	0520	1.2F
	0734	1108	2.7E
	1433	1757	3.6F
	2154		
12 Th		0106	2.3E
	0431	0622	1.0F
	0845	1216	2.2E
	1532	1852	3.2F
	2251		
13 F ◐		0210	2.4E
	0534	0736	1.0F
	1018	1331	1.8E
	1632	1953	2.8F
	2342		
14 Sa		0302	2.5E
	0630	0904	1.2F
	1148	1441	1.7E
	1735	2057	2.5F
15 Su	0026	0348	2.7E
	0718	1012	1.7F
	1300	1545	1.6E
	1838	2153	2.4F
16 M	0105	0429	2.8E
	0758	1058	2.1F
	1400	1646	1.6E
	1937	2238	2.3F
17 Tu	0140	0506	2.9E
	0834	1135	2.6F
	1452	1741	1.7E
	2031	2316	2.1F
18 W	0211	0539	3.1E
	0907	1207	2.9F
	1539	1828	1.9E
	2119	2351	2.0F
19 Th	0240	0611	3.2E
	0937	1239	3.2F
	1622	1908	2.0E
	2203		
20 F		0025	1.8F
	0308	0643	3.2E
	1007	1312	3.4F
	1703	1944	2.1E
	2245		
21 Sa ○		0101	1.7F
	0335	0714	3.3E
	1036	1347	3.6F
	1742	2017	2.1E
	2328		
22 Su		0139	1.5F
	0403	0746	3.3E
	1105	1425	3.7F
	1820	2052	2.1E
23 M	0013	0221	1.3F
	0433	0820	3.2E
	1136	1505	3.7F
	1858	2130	2.1E
24 Tu	0103	0306	1.1F
	0507	0855	3.0E
	1209	1547	3.7F
	1937	2212	2.1E
25 W	0158	0354	1.0F
	0546	0934	2.8E
	1248	1631	3.7F
	2019	2302	2.1E
26 Th	0256	0445	0.9F
	0633	1021	2.5E
	1333	1716	3.6F
	2104	2358	2.2E
27 F	0352	0540	0.9F
	0732	1119	2.2E
	1425	1805	3.4F
	2153		
28 Sa		0057	2.4E
	0446	0639	1.1F
	0853	1228	2.0E
	1525	1858	3.2F
	2242		
29 Su ◑		0152	2.7E
	0537	0747	1.4F
	1036	1340	1.9E
	1630	1957	3.0F
	2330		
30 M		0242	3.1E
	0625	0859	1.9F
	1207	1448	2.0E
	1742	2059	2.9F
31 Tu	0015	0331	3.4E
	0712	1003	2.7F
	1322	1555	2.1E
	1856	2159	2.8F

June

	Slack	Maximum	
	h m	h m	knots
1 W	0059	0419	3.8E
	0758	1058	3.4F
	1426	1703	2.3E
	2007	2252	2.7F
2 Th	0141	0509	4.1E
	0842	1148	4.1F
	1527	1808	2.5E
	2110	2342	2.5F
3 F	0223	0558	4.3E
	0925	1236	4.6F
	1623	1907	2.7E
	2209		
4 Sa ●		0031	2.3F
	0306	0646	4.4E
	1009	1324	4.8F
	1717	2000	2.8E
	2305		
5 Su		0120	2.0F
	0351	0731	4.3E
	1052	1413	4.9F
	1808	2049	2.8E
6 M	0002	0212	1.8F
	0437	0816	4.1E
	1137	1503	4.7F
	1856	2137	2.7E
7 Tu	0101	0307	1.5F
	0525	0900	3.7E
	1223	1552	4.5F
	1944	2229	2.6E
8 W	0202	0402	1.3F
	0616	0947	3.2E
	1310	1640	4.1F
	2030	2326	2.5E
9 Th	0303	0458	1.1F
	0712	1038	2.6E
	1400	1726	3.7F
	2117		
10 F		0028	2.4E
	0402	0556	1.1F
	0820	1138	2.0E
	1452	1813	3.2F
	2204		
11 Sa		0125	2.5E
	0457	0659	1.1F
	0947	1248	1.6E
	1546	1902	2.7F
	2249		
12 Su ◐		0214	2.6E
	0548	0813	1.3F
	1119	1358	1.3E
	1645	1956	2.3F
	2331		
13 M		0257	2.7E
	0635	0930	1.6F
	1237	1504	1.2E
	1748	2053	2.0F
14 Tu	0010	0336	2.8E
	0717	1025	2.1F
	1341	1607	1.2E
	1854	2148	1.8F
15 W	0045	0414	2.9E
	0756	1106	2.6F
	1435	1710	1.3E
	1957	2235	1.7F
16 Th	0119	0452	3.1E
	0832	1141	3.0F
	1524	1806	1.5E
	2053	2316	1.6F
17 F	0151	0531	3.2E
	0906	1215	3.3F
	1608	1851	1.7E
	2142	2355	1.5F
18 Sa	0222	0608	3.3E
	0938	1249	3.6F
	1648	1929	1.9E
	2228		
19 Su		0034	1.4F
	0254	0645	3.4E
	1010	1325	3.8F
	1727	2003	2.0E
	2312		
20 M ○		0114	1.3F
	0328	0722	3.4E
	1042	1403	4.0F
	1803	2037	2.2E
	2356		
21 Tu		0157	1.2F
	0405	0758	3.4E
	1114	1443	4.0F
	1839	2113	2.3E
22 W	0044	0244	1.2F
	0447	0836	3.3E
	1149	1525	4.1F
	1916	2153	2.4E
23 Th	0134	0334	1.2F
	0534	0917	3.1E
	1229	1608	4.0F
	1953	2237	2.5E
24 F	0225	0426	1.2F
	0628	1003	2.8E
	1313	1653	3.8F
	2033	2328	2.6E
25 Sa	0317	0520	1.3F
	0732	1100	2.4E
	1404	1739	3.6F
	2115		
26 Su		0022	2.8E
	0408	0618	1.5F
	0853	1207	2.0E
	1502	1829	3.2F
	2200		
27 M ◑		0117	3.0E
	0459	0723	1.8F
	1031	1320	1.8E
	1608	1925	2.9F
	2247		
28 Tu		0210	3.3E
	0551	0835	2.3F
	1203	1432	1.8E
	1721	2027	2.5F
	2334		
29 W		0301	3.6E
	0642	0945	2.9F
	1319	1543	1.8E
	1840	2131	2.2F
30 Th	0021	0352	3.8E
	0733	1044	3.6F
	1424	1656	1.9E
	1956	2231	2.1F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

San Juan Channel (south entrance), Washington, 2016

F–Flood, Dir. 010° True E–Ebb, Dir. 180° True

July

		Slack	Maximum	
		h m	h m	knots
1	F	0108	0444	4.0E
		0822	1136	4.2F
		1524	1805	2.2E
		2102	2324	2.0F
2	Sa	0155	0537	4.1E
		0908	1224	4.6F
		1618	1904	2.4E
		2201		
3	Su	0242	0015	1.9F
		0953	0628	4.2E
		1708	1311	4.7F
		2255	1954	2.6E
4	M ●	0331	0104	1.8F
		1037	0715	4.1E
		1754	1358	4.7F
		2347	2038	2.7E
5	Tu	0420	0155	1.6F
		1119	0800	3.9E
		1836	1444	4.5F
			2120	2.7E
6	W	0039	0247	1.5F
		0511	0842	3.5E
		1202	1528	4.3F
		1916	2202	2.6E
7	Th	0132	0339	1.4F
		0602	0925	3.1E
		1245	1611	3.9F
		1955	2246	2.5E
8	F	0225	0431	1.4F
		0655	1010	2.5E
		1328	1652	3.5F
		2033	2334	2.5E
9	Sa	0317	0522	1.3F
		0756	1101	2.0E
		1414	1733	3.0F
		2111		
10	Su	0407	0025	2.4E
		0910	0615	1.3F
		1504	1203	1.5E
		2150	1816	2.6F
11	M ◐	0455	0114	2.5E
		1038	0715	1.4F
		1559	1312	1.2E
		2231	1904	2.1F
12	Tu	0543	0200	2.6E
		1203	0825	1.6F
		1702	1421	1.1E
		2312	1958	1.7F
13	W	0629	0244	2.7E
		1312	0936	2.0F
		1814	1527	1.0E
		2353	2058	1.5F
14	Th	0714	0326	2.8E
		1409	1029	2.5F
		1926	1633	1.2E
			2156	1.4F
15	F	0033	0410	2.9E
		0755	1111	2.9F
		1458	1736	1.4E
		2028	2246	1.3F
16	Sa	0112	0454	3.1E
		0834	1148	3.3F
		1542	1826	1.6E
		2120	2330	1.4F
17	Su	0151	0538	3.2E
		0911	1224	3.7F
		1622	1906	1.9E
		2206		
18	M	0230	0011	1.4F
		0946	0620	3.4E
		1659	1300	3.9F
		2247	1940	2.2E
19	Tu ○	0312	0053	1.5F
		1020	0701	3.5E
		1735	1338	4.1F
		2328	2014	2.4E
20	W	0356	0137	1.5F
		1056	0741	3.5E
		1810	1419	4.2F
			2049	2.6E
21	Th	0010	0224	1.6F
		0445	0821	3.5E
		1134	1501	4.2F
		1844	2126	2.8E
22	F	0055	0314	1.7F
		0537	0904	3.3E
		1215	1544	4.1F
		1919	2207	2.9E
23	Sa	0143	0406	1.9F
		0634	0951	3.0E
		1300	1629	3.8F
		1956	2253	3.0E
24	Su	0233	0500	2.0F
		0738	1046	2.5E
		1352	1715	3.4F
		2035	2345	3.0E
25	M	0326	0556	2.2F
		0856	1152	2.1E
		1452	1805	3.0F
		2119		
26	Tu ◑	0420	0042	3.2E
		1028	0659	2.4F
		1600	1307	1.8E
		2207	1900	2.5F
27	W	0517	0139	3.3E
		1157	0811	2.7F
		1716	1423	1.7E
		2300	2003	2.0F
28	Th	0614	0235	3.4E
		1312	0927	3.1F
		1838	1539	1.7E
		2355	2113	1.8F
29	F	0711	0331	3.6E
		1416	1032	3.6F
		1954	1655	1.9E
			2219	1.7F
30	Sa	0050	0428	3.7E
		0804	1126	4.0F
		1512	1802	2.1E
		2058	2315	1.7F
31	Su	0143	0524	3.8E
		0854	1213	4.3F
		1602	1856	2.4E
		2151		

August

		Slack	Maximum	
		h m	h m	knots
1	M	0236	0006	1.8F
		0939	0617	3.8E
		1647	1257	4.4F
		2239	1940	2.6E
2	Tu ●	0327	0053	1.8F
		1022	0704	3.8E
		1728	1338	4.3F
		2323	2018	2.8E
3	W	0417	0139	1.8F
		1103	0746	3.6E
		1805	1419	4.1F
			2053	2.8E
4	Th	0007	0225	1.8F
		0506	0826	3.3E
		1142	1459	3.8F
		1839	2126	2.7E
5	F	0050	0312	1.8F
		0554	0904	2.9E
		1220	1537	3.5F
		1912	2200	2.6E
6	Sa	0134	0359	1.8F
		0642	0944	2.5E
		1300	1616	3.1F
		1943	2237	2.5E
7	Su	0219	0445	1.8F
		0735	1029	2.0E
		1342	1654	2.7F
		2014	2320	2.4E
8	M	0306	0532	1.7F
		0836	1123	1.6E
		1430	1735	2.2F
		2047		
9	Tu	0353	0008	2.3E
		0953	0624	1.7F
		1526	1228	1.2E
		2125	1820	1.8F
10	W ◐	0443	0100	2.3E
		1118	0723	1.8F
		1632	1340	1.0E
		2209	1912	1.4F
11	Th	0533	0152	2.4E
		1232	0833	2.0F
		1747	1450	1.0E
		2301	2015	1.2F
12	F	0625	0242	2.5E
		1331	0941	2.3F
		1902	1556	1.2E
		2354	2121	1.1F
13	Sa	0714	0331	2.6E
		1420	1034	2.8F
		2006	1658	1.4E
			2220	1.2F
14	Su	0044	0421	2.8E
		0759	1116	3.2F
		1503	1749	1.8E
		2056	2308	1.4F
15	M	0132	0509	3.1E
		0841	1154	3.6F
		1543	1831	2.1E
		2138	2351	1.7F
16	Tu	0219	0556	3.3E
		0920	1232	3.9F
		1620	1908	2.5E
		2217		
17	W	0307	0034	1.9F
		0959	0641	3.5E
		1655	1311	4.1F
		2254	1942	2.8E
18	Th ○	0357	0117	2.2F
		1038	0725	3.6E
		1730	1351	4.2F
		2333	2018	3.1E
19	F	0448	0204	2.4F
		1119	0808	3.6E
		1804	1433	4.1F
			2054	3.3E
20	Sa	0014	0253	2.6F
		0543	0853	3.4E
		1203	1518	3.8F
		1839	2134	3.4E
21	Su	0059	0345	2.7F
		0640	0941	3.1E
		1252	1604	3.5F
		1916	2218	3.3E
22	M	0149	0439	2.8F
		0744	1036	2.6E
		1348	1652	3.0F
		1954	2309	3.3E
23	Tu	0244	0535	2.9F
		0857	1143	2.1E
		1452	1743	2.5F
		2038		
24	W ◑	0342	0007	3.2E
		1022	0637	2.9F
		1604	1301	1.8E
		2131	1840	1.9F
25	Th	0443	0111	3.1E
		1146	0748	3.0F
		1723	1423	1.7E
		2234	1947	1.5F
26	F	0546	0215	3.1E
		1258	0908	3.2F
		1843	1540	1.8E
		2342	2105	1.4F
27	Sa	0649	0317	3.2E
		1358	1018	3.5F
		1953	1650	2.1E
			2217	1.5F
28	Su	0047	0418	3.2E
		0747	1112	3.8F
		1449	1750	2.3E
		2050	2314	1.7F
29	M	0146	0517	3.3E
		0838	1157	3.9F
		1534	1838	2.6E
		2136		
30	Tu	0240	0001	2.0F
		0924	0609	3.3E
		1615	1237	3.9F
		2217	1917	2.8E
31	W	0331	0043	2.1F
		1006	0654	3.3E
		1650	1314	3.8F
		2254	1950	2.9E

September

		Slack	Maximum	
		h m	h m	knots
1	Th ●	0419	0123	2.2F
		1045	0734	3.2E
		1723	1349	3.5F
		2330	2018	2.9E
2	F	0504	0203	2.3F
		1122	0810	3.0E
		1753	1424	3.3F
			2046	2.9E
3	Sa	0005	0244	2.3F
		0548	0846	2.7E
		1159	1500	2.9F
		1821	2115	2.8E
4	Su	0041	0326	2.3F
		0632	0922	2.4E
		1237	1538	2.6F
		1847	2147	2.7E
5	M	0119	0409	2.3F
		0719	1003	2.0E
		1319	1617	2.2F
		1914	2223	2.5E
6	Tu	0200	0453	2.2F
		0811	1051	1.6E
		1409	1658	1.8F
		1943	2306	2.3E
7	W	0246	0540	2.2F
		0915	1152	1.3E
		1508	1743	1.4F
		2017	2359	2.1E
8	Th	0336	0633	2.1F
		1031	1304	1.2E
		1617	1835	1.1F
		2102		
9	F ◐	0430	0058	2.1E
		1145	0735	2.2F
		1733	1416	1.2E
		2205	1938	0.9F
10	Sa	0527	0158	2.1E
		1245	0844	2.3F
		1844	1520	1.4E
		2319	2050	0.9F
11	Su	0624	0254	2.3E
		1334	0947	2.7F
		1942	1616	1.7E
			2155	1.2F
12	M	0024	0348	2.5E
		0718	1037	3.1F
		1416	1705	2.1E
		2028	2247	1.6F
13	Tu	0121	0441	2.8E
		0807	1120	3.5F
		1455	1749	2.5E
		2107	2332	2.0F
14	W	0214	0533	3.1E
		0853	1200	3.8F
		1532	1829	2.9E
		2144		
15	Th	0306	0015	2.5F
		0937	0623	3.4E
		1608	1240	3.9F
		2220	1906	3.3E
16	F ○	0359	0059	2.9F
		1020	0710	3.6E
		1644	1321	3.9F
		2257	1944	3.6E
17	Sa	0452	0145	3.3F
		1106	0756	3.6E
		1719	1405	3.7F
		2338	2022	3.8E
18	Su	0547	0234	3.5F
		1154	0843	3.4E
		1756	1451	3.3F
			2102	3.8E
19	M	0022	0325	3.7F
		0645	0933	3.1E
		1248	1540	2.9F
		1833	2146	3.7E
20	Tu	0111	0419	3.7F
		0746	1029	2.6E
		1349	1631	2.4F
		1914	2235	3.4E
21	W	0206	0516	3.6F
		0855	1137	2.2E
		1458	1725	1.9F
		2001	2334	3.1E
22	Th	0306	0616	3.4F
		1011	1259	2.0E
		1614	1825	1.5F
		2059		
23	F ◑	0410	0043	2.8E
		1128	0724	3.2F
		1731	1422	2.0E
		2217	1938	1.2F
24	Sa	0517	0155	2.7E
		1234	0843	3.2F
		1844	1533	2.1E
		2340	2105	1.2F
25	Su	0623	0304	2.7E
		1329	0956	3.3F
		1946	1634	2.4E
			2220	1.5F
26	M	0724	0051	2.7E
		1415	0409	3.4F
		2034	1050	2.6E
			1726	1.9F
			2312	
27	Tu	0818	0152	2.8E
		1456	0508	3.4F
		2115	1134	2.8E
			1809	2.3F
			2355	
28	W	0905	0246	2.8E
		1531	0601	3.3F
		2151	1210	3.0E
			1845	
29	Th	0947	0032	2.5F
		1604	0335	2.8E
		2223	0645	3.1F
			1243	3.1E
			1914	
30	F ●	0420	0107	2.7F
		1026	0722	2.8E
		1633	1315	2.9F
		2254	1941	3.1E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

San Juan Channel (south entrance), Washington, 2016

F–Flood, Dir. 010° True E–Ebb, Dir. 180° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa		0141	2.8F
	0503	0756	2.6E
	1103	1348	2.6F
	1700	2007	3.1E
	2324		
2 Su		0218	2.9F
	0544	0830	2.5E
	1141	1423	2.3F
	1725	2034	3.0E
	2355		
3 M		0256	2.9F
	0625	0905	2.3E
	1220	1501	2.0F
	1749	2104	2.8E
4 Tu	0027	0337	2.9F
	0707	0943	2.0E
	1305	1542	1.7F
	1815	2137	2.6E
5 W	0102	0419	2.8F
	0753	1028	1.7E
	1358	1625	1.3F
	1843	2216	2.4E
6 Th	0143	0505	2.7F
	0847	1124	1.5E
	1502	1712	1.0F
	1917	2304	2.1E
7 F	0231	0554	2.6F
	0950	1233	1.4E
	1612	1805	0.8F
	2002		
8 Sa ◐		0005	1.9E
	0325	0649	2.5F
	1056	1344	1.5E
	1722	1907	0.7F
	2111		
9 Su		0113	1.9E
	0426	0751	2.5F
	1154	1444	1.8E
	1824	2020	0.8F
	2246		
10 M		0217	2.0E
	0529	0856	2.7F
	1243	1535	2.1E
	1915	2130	1.2F
11 Tu	0008	0316	2.2E
	0631	0954	3.0F
	1326	1622	2.5E
	1957	2225	1.8F
12 W	0112	0414	2.5E
	0730	1043	3.3F
	1405	1706	3.0E
	2035	2312	2.5F
13 Th	0210	0510	2.8E
	0824	1127	3.5F
	1442	1749	3.4E
	2112	2357	3.1F
14 F	0305	0605	3.1E
	0915	1209	3.5F
	1519	1830	3.8E
	2149		
15 Sa ○		0041	3.7F
	0400	0656	3.3E
	1004	1252	3.4F
	1556	1911	4.1E
	2227		
16 Su		0127	4.1F
	0454	0746	3.4E
	1054	1337	3.1F
	1634	1952	4.2E
	2308		
17 M		0216	4.4F
	0549	0835	3.3E
	1147	1425	2.8F
	1712	2033	4.2E
	2352		
18 Tu		0308	4.4F
	0645	0926	3.0E
	1245	1517	2.3F
	1753	2118	3.9E
19 W	0040	0401	4.3F
	0743	1023	2.7E
	1350	1611	1.9F
	1837	2207	3.5E
20 Th	0134	0457	4.1F
	0846	1131	2.3E
	1502	1709	1.5F
	1928	2304	3.0E
21 F	0233	0554	3.7F
	0953	1253	2.2E
	1616	1812	1.2F
	2033		
22 Sa ◑	0337	0015	2.5E
	1100	0657	3.4F
	1728	1410	2.3E
	2203	1927	1.0F
23 Su	0443	0133	2.3E
	1159	0808	3.1F
	1833	1512	2.5E
	2336	2100	1.2F
24 M	0550	0246	2.2E
	1250	0920	3.0F
	1927	1606	2.7E
		2214	1.7F
25 Tu	0052	0353	2.1E
	0654	1017	2.9F
	1332	1652	2.9E
	2011	2304	2.1F
26 W	0153	0454	2.2E
	0751	1101	2.8F
	1410	1732	3.0E
	2049	2343	2.5F
27 Th	0247	0548	2.2E
	0842	1138	2.7F
	1443	1806	3.1E
	2122		
28 F		0017	2.9F
	0335	0633	2.3E
	0926	1210	2.5F
	1513	1836	3.2E
	2153		
29 Sa		0049	3.1F
	0419	0711	2.3E
	1007	1242	2.3F
	1540	1903	3.2E
	2222		
30 Su ●		0121	3.3F
	0500	0745	2.3E
	1047	1315	2.1F
	1606	1931	3.2E
	2251		
31 M		0155	3.3F
	0539	0818	2.2E
	1127	1350	1.8F
	1631	2000	3.2E
	2319		

November

	Slack	Maximum	
	h m	h m	knots
1 Tu		0231	3.4F
	0618	0852	2.1E
	1209	1429	1.5F
	1656	2030	3.0E
	2348		
2 W		0310	3.4F
	0657	0929	2.0E
	1257	1511	1.2F
	1723	2103	2.8E
3 Th	0020	0352	3.3F
	0739	1011	1.8E
	1352	1557	1.0F
	1754	2139	2.6E
4 F	0057	0435	3.2F
	0824	1102	1.7E
	1455	1646	0.8F
	1832	2223	2.3E
5 Sa	0140	0521	3.1F
	0914	1203	1.7E
	1600	1739	0.7F
	1921	2320	2.0E
6 Su	0232	0611	3.0F
	1009	1308	1.8E
	1700	1839	0.7F
	2032		
7 M ◐		0030	1.8E
	0330	0706	2.9F
	1102	1405	2.1E
	1754	1948	0.9F
	2216		
8 Tu		0140	1.8E
	0435	0807	2.8F
	1151	1455	2.5E
	1841	2100	1.4F
	2352		
9 W		0245	1.9E
	0544	0908	2.9F
	1235	1541	2.9E
	1923	2201	2.1F
10 Th	0104	0347	2.2E
	0652	1004	3.0F
	1315	1626	3.4E
	2003	2252	2.9F
11 F	0206	0449	2.4E
	0756	1054	3.0F
	1354	1712	3.8E
	2042	2339	3.6F
12 Sa	0304	0550	2.7E
	0855	1140	3.0F
	1433	1757	4.1E
	2122		
13 Su		0025	4.3F
	0400	0646	3.0E
	0951	1226	2.9F
	1512	1842	4.4E
	2203		
14 M ○		0112	4.7F
	0455	0739	3.1E
	1045	1313	2.6F
	1553	1926	4.5E
	2245		
15 Tu		0201	4.9F
	0548	0829	3.1E
	1141	1403	2.2F
	1636	2010	4.4E
	2329		
16 W		0252	4.9F
	0641	0920	2.9E
	1240	1456	1.9F
	1721	2055	4.1E
17 Th	0017	0344	4.7F
	0735	1015	2.7E
	1346	1553	1.5F
	1809	2143	3.8E
18 F	0108	0437	4.4F
	0829	1118	2.5E
	1454	1652	1.3F
	1904	2238	3.0E
19 Sa	0204	0531	3.9F
	0926	1232	2.4E
	1602	1755	1.1F
	2013	2344	2.4E
20 Su	0303	0625	3.5F
	1022	1341	2.5E
	1707	1906	1.0F
	2145		
21 M ◑	0405	0101	1.9E
	1116	0725	3.0F
	1806	1439	2.6E
	2322	2034	1.2F
22 Tu	0509	0217	1.7E
	1203	0829	2.6F
	1857	1527	2.8E
		2152	1.7F
23 W	0042	0326	1.6E
	0614	0930	2.4F
	1244	1610	3.0E
	1940	2245	2.2F
24 Th	0147	0430	1.6E
	0717	1020	2.2F
	1320	1649	3.1E
	2018	2325	2.6F
25 F	0241	0529	1.7E
	0814	1101	2.1F
	1353	1724	3.2E
	2052	2358	3.0F
26 Sa	0329	0619	1.8E
	0904	1137	2.0F
	1423	1757	3.3E
	2124		
27 Su	0412	0029	3.3F
	0950	0700	1.9E
	1452	1211	1.8F
	2154	1829	3.3E
28 M	0453	0101	3.5F
	1032	0736	2.0E
	1519	1246	1.6F
	2223	1900	3.3E
29 Tu ●	0531	0134	3.7F
	1115	0808	2.1E
	1546	1323	1.4F
	2252	1932	3.3E
30 W	0608	0210	3.7F
	1158	0841	2.1E
	1615	1403	1.3F
	2322	2004	3.2E

December

	Slack	Maximum	
	h m	h m	knots
1 Th		0248	3.7F
	0644	0915	2.1E
	1246	1446	1.1F
	1648	2038	3.0E
	2353		
2 F		0328	3.7F
	0721	0954	2.0E
	1338	1533	0.9F
	1725	2115	2.8E
3 Sa	0028	0410	3.6F
	0800	1039	2.0E
	1434	1623	0.8F
	1808	2157	2.5E
4 Su	0108	0454	3.5F
	0841	1131	2.1E
	1530	1715	0.8F
	1903	2249	2.2E
5 M	0155	0540	3.3F
	0925	1228	2.2E
	1623	1812	0.9F
	2015	2354	1.9E
6 Tu	0251	0629	3.1F
	1012	1324	2.5E
	1713	1916	1.2F
	2155		
7 W ◐		0107	1.7E
	0354	0725	2.9F
	1059	1415	2.9E
	1801	2027	1.7F
	2337		
8 Th		0217	1.7E
	0505	0826	2.7F
	1145	1503	3.2E
	1847	2135	2.4F
9 F	0056	0325	1.8E
	0621	0928	2.6F
	1229	1551	3.6E
	1932	2233	3.2F
10 Sa	0202	0432	2.1E
	0735	1024	2.5F
	1312	1640	4.0E
	2017	2324	3.9F
11 Su	0302	0539	2.3E
	0842	1116	2.4F
	1355	1730	4.3E
	2100		
12 M		0011	4.5F
	0358	0640	2.6E
	0941	1205	2.3F
	1438	1819	4.4E
	2144		
13 Tu ○		0059	4.9F
	0451	0734	2.8E
	1037	1254	2.2F
	1524	1906	4.5E
	2228		
14 W		0147	5.1F
	0542	0823	2.9E
	1133	1345	1.9F
	1611	1952	4.4E
	2313		
15 Th		0237	5.0F
	0631	0911	2.9E
	1230	1439	1.7F
	1701	2038	4.1E
	2359		
16 F		0326	4.8F
	0718	1000	2.8E
	1329	1535	1.5F
	1753	2124	3.6E
17 Sa	0046	0415	4.4F
	0804	1054	2.7E
	1430	1632	1.4F
	1849	2214	2.9E
18 Su	0136	0503	3.9F
	0851	1154	2.6E
	1531	1730	1.2F
	1955	2312	2.3E
19 M	0228	0550	3.4F
	0937	1255	2.6E
	1629	1832	1.2F
	2117		
20 Tu ◑		0021	1.7E
	0323	0639	2.9F
	1024	1351	2.6E
	1723	1945	1.3F
	2254		
21 W		0136	1.4E
	0423	0732	2.4F
	1109	1438	2.7E
	1814	2109	1.6F
22 Th	0020	0249	1.2E
	0528	0832	2.0F
	1151	1521	2.8E
	1900	2213	2.1F
23 F	0129	0357	1.2E
	0637	0931	1.7F
	1229	1602	2.9E
	1942	2259	2.6F
24 Sa	0226	0503	1.3E
	0744	1022	1.6F
	1306	1641	3.0E
	2020	2335	3.0F
25 Su	0315	0601	1.5E
	0842	1106	1.5F
	1340	1720	3.1E
	2055		
26 M		0008	3.3F
	0358	0647	1.7E
	0932	1145	1.5F
	1413	1758	3.2E
	2128		
27 Tu		0041	3.6F
	0438	0723	1.9E
	1017	1223	1.4F
	1446	1834	3.3E
	2200		
28 W ●		0114	3.8F
	0515	0755	2.0E
	1059	1301	1.4F
	1519	1910	3.4E
	2231		
29 Th		0149	3.9F
	0549	0826	2.2E
	1140	1342	1.3F
	1555	1945	3.3E
	2302		
30 F		0226	4.0F
	0623	0858	2.3E
	1223	1425	1.2F
	1633	2021	3.3E
	2334		
31 Sa		0305	4.0F
	0656	0933	2.4E
	1308	1512	1.2F
	1716	2058	3.1E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

TABLE 2. — CURRENT DIFFERENCES AND OTHER CONSTANTS AND ROTARY TIDAL CURRENTS

EXPLANATION OF TABLE

In this publication, reference stations are those for which daily predictions are listed in Table 1. Those stations appearing in Table 2 are called subordinate stations. The principal purpose of Table 2 is to present data that will enable one to determine the approximate times of minimum currents (slack waters) and the times and speeds of maximum currents at numerous subordinate stations on the Pacific Coast of North America and Asia. By applying the specific corrections given in Table 2 to the predicted times and speeds of the current at the appropriate reference station, reasonable approximations of the current at the subordinate station may be compiled.

Locations and Depths

Because the latitude and longitude are listed according to the exactness recorded in the original survey records, the locations of the subordinate stations are presented in varying degrees of accuracy. Since a minute of latitude is nearly equivalent to a mile, a location given to the nearest minute may not indicate the exact position of the station. This should be noted, especially in the case of a narrow stream, where the nearest minute of latitude or longitude may locate a station inland. In such cases, unless the description locates the station elsewhere, reference is made to the current in the center of the channel. In some instances, the charts may not present a convenient name for locating a station. In those cases, the position may be described by a bearing from some prominent place on the chart.

Although current measurements may have been recorded at various depths in the past, the data listed here for most of the subordinate stations are mean values determined to have been representative of the current at each location. For that reason, no specific current meter depths for those stations are given in Table 2. In recent years, however, new data from individual meter depths at a given location have been published and subsequent new data also may be presented in a similar manner.

Since most of the current data in Table 2 came from meters suspended from survey vessels or anchored buoys, the listed depths are those measured downward from the surface. Some later data have come from meters anchored at fixed depths from the bottom. Those meter positions were defined as depths below chart datum. Such defined depths in this and subsequent editions will be accompanied by the small letter "d."

Minimum Currents

Between the maximum flood and maximum ebb phases, the current may or may not diminish to a true slack water or zero speed stage. For that reason, the all-inclusive terms, "minimum before flood" and "minimum before ebb" are used in the Table 2 heading rather than "slack water." Average speeds and directions of the minimums are given where they are known. Dashes are used where the values are unknown or unreliable and should not be interpreted as zero speed values.

Maximum Currents

Near the coast and in inland tidal waters, the current increases from minimum current (slack water) for a period of about 3 hours until the maximum speed or the strength of the current is reached. The speed then decreases for another period of about 3 hours when minimum current is again reached and the current begins a similar cycle in the opposite direction. The current that flows toward the coast or up a stream is known as the flood current; the opposite flow is known as the ebb current. Table 2 lists the average speeds and directions of the maximum floods and maximum ebbs. The directions are given in degrees, true, reading clockwise from 000° at north to 359° and are the directions toward which the current flow.

Differences and Speed Ratios

Table 2 contains mean time differences by which the reader can compile approximate times for the minimum and maximum current phases at the subordinate stations. Time differences for those phases should be applied to the corresponding phases at the reference station. It will be seen upon inspection that some subordinate stations exhibit either a double flood or a double ebb stage, or both. Explanations

of these stages can be found in the glossary located elsewhere in this publication. In those cases, a separate time difference is listed for each of the three flood (or ebb) phases and these should be applied only to the daily maximum flood (or ebb) phase at the reference station. The results obtained by the application of the time differences will be based upon the time meridian shown above the name of the subordinate station. Differences of time meridians between a subordinate station and its reference station have been accounted for and no further adjustment by the reader is needed. Summer or daylight -saving time is not used in this publication.

The speed ratios are used to compile approximations of the daily current speeds at the subordinate stations and refer only to the maximum floods and ebbs. No attempt is made to predict the speeds of the minimum currents. Normally, these ratios should be applied to the corresponding maximum current phases at the reference station. As mentioned above, however, some subordinate stations may exhibit either a double flood or a double ebb or both. As with the time differences, separate ratios are listed for each of the three flood (or ebb phases) and should be applied only to the daily maximum flood (or ebb) speed at the reference station. It should be noted that although the speed of a given current phase at a subordinate station is obtained by reference to the corresponding phase at the reference station, the directions of the current at the two places may differ considerably. Table 2 lists the average directions of the various current phases at the subordinate stations.

Rotary Tidal Currents

Table 5 contains listings of data for those stations which exhibited rotary current patterns. Briefly, a rotary current can be described as one which flows continually with the direction of flow changing through all points of the compass during the tidal period. A more complete description can be found in the glossary located elsewhere in this publication. The average speeds and directions are listed in hour increments as referred to the predicted times of a particular current phase at a reference station in Table 1. The Moon, at times of new, full, or perigee may increase speeds 15 to 20 percent above average; or 30 to 40 percent if perigee occurs at or near the time of new or full Moon. Conversely, the Moon at times of quadrature or apogee may decrease the speeds 15 to 20 percent or 30 to 40 percent if they occur together. Near average speeds may be expected when apogee occurs near or at new or full Moon, or when perigee occurs at or near quadrature. The directions of the currents are given in degrees true, reading clockwise from 000° at north to 359° and are the directions toward which the current flows.

Example of the use of Table 2.—Suppose we wish to calculate the approximate times of the minimum currents and the times and speeds of the maximum currents on a particular morning at the location listed as Cordova, Orca Inlet. From Table 2 we learn that the reference station is Wrangell Narrows whose predicted currents for the morning are listed below. Currents for Cordova can be approximated by using the Table 2 corrections as shown below.

	Minimum Before Flood	*Maximum flood*		*Minimum before ebb*	*Maximum ebb*	
	h.m.	*h.m.*	*kn.*	*h.m.*	*h.m.*	*kn.*
Wrangell Narrows	0011	0243	2.8	0613	0912	2.8
Table 2 corrections	–023	+019	x0.5 ratio	+023	+016	x0.3 ratio
Cordova	2348*	0302	1.4	0636	0928	0.8

* this minimum current phase is seen to occur just before midnight of the previous day.

Table 2 list the mean values of the minimum current phases as 0.0 knots; therefore, no directions are given. The average directions of the maximum flood and maximum ebb are 212° true and 026° true, respectively.

NOTE.—subordinate locations referencing Iloilo, San Bernardino Strait, San Juanico, and Cebu Harbor were included only for future consideration. See IMPORTANT NOTICE on page VII.

Active Pass, British Columbia, 2016

F–Flood, Dir. 045° True E–Ebb, Dir. 225° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◑	0253	0000	2.4E
	0923	0614	3.2F
	1645	1256	3.8E
	2209	1920	1.9F
2 Sa	0349	0102	2.0E
	1001	0703	2.5F
	1734	1344	3.7E
	2329	2022	2.2F
3 Su	0458	0213	1.7E
	1042	0759	2.0F
	1820	1435	3.7E
		2123	2.6F
4 M	0045	0327	1.7E
	0618	0900	1.6F
	1127	1526	3.7E
	1904	2218	3.1F
5 Tu	0148	0434	2.0E
	0736	1001	1.4F
	1214	1615	3.9E
	1945	2306	3.7F
6 W	0240	0530	2.4E
	0842	1055	1.4F
	1301	1659	4.0E
	2024	2349	4.2F
7 Th	0324	0617	2.8E
	0936	1144	1.4F
	1347	1742	4.3E
	2102		
8 F	0405	0030	4.7F
	1021	0659	3.2E
	1432	1229	1.6F
	2140	1823	4.5E
9 Sa ●	0443	0109	5.1F
	1102	0740	3.6E
	1518	1312	1.8F
	2220	1905	4.7E
10 Su	0521	0148	5.4F
	1141	0819	3.9E
	1604	1354	2.0F
	2259	1947	4.9E
11 M	0558	0227	5.6F
	1220	0858	4.2E
	1653	1438	2.2F
	2342	2030	4.9E
12 Tu	0635	0307	5.7F
	1301	0937	4.4E
	1744	1523	2.5F
		2115	4.8E
13 W	0025	0348	5.5F
	0713	1019	4.6E
	1344	1612	2.7F
	1840	2204	4.5E
14 Th	0111	0432	5.1F
	0751	1103	4.7E
	1431	1705	2.8F
	1942	2257	4.0E
15 F	0202	0518	4.5F
	0831	1150	4.7E
	1522	1804	2.9F
	2053	2358	3.4E
16 Sa ◐	0259	0610	3.8F
	0914	1243	4.6E
	1618	1910	3.1F
	2214		
17 Su	0408	0110	2.8E
	1001	0710	3.0F
	1717	1341	4.5E
	2342	2022	3.4F
18 M	0531	0232	2.5E
	1053	0818	2.3F
	1817	1443	4.5E
		2134	3.9F
19 Tu	0105	0355	2.6E
	0701	0931	1.9F
	1151	1546	4.5E
	1915	2239	4.5F
20 W	0214	0507	3.0E
	0822	1040	1.8F
	1252	1646	4.7E
	2008	2336	5.0F
21 Th	0311	0607	3.5E
	0928	1142	1.8F
	1351	1740	4.8E
	2058		
22 F	0359	0026	5.4F
	1021	0659	3.9E
	1446	1236	2.0F
	2144	1829	4.8E
23 Sa ○	0443	0111	5.5F
	1108	0743	4.1E
	1537	1324	2.1F
	2227	1915	4.8E
24 Su	0522	0153	5.5F
	1149	0824	4.3E
	1625	1408	2.3F
	2307	1958	4.6E
25 M	0557	0231	5.4F
	1228	0902	4.4E
	1711	1449	2.4F
	2346	2038	4.4E
26 Tu	0630	0308	5.1F
	1304	0937	4.4E
	1756	1529	2.4F
		2118	4.1E
27 W	0023	0342	4.7F
	0659	1011	4.3E
	1340	1609	2.5F
	1842	2157	3.7E
28 Th	0100	0416	4.2F
	0729	1045	4.2E
	1417	1650	2.5F
	1929	2238	3.2E
29 F	0138	0451	3.7F
	0759	1121	4.1E
	1456	1734	2.4F
	2022	2324	2.7E
30 Sa	0221	0529	3.0F
	0829	1159	3.9E
	1538	1824	2.4F
	2123		
31 Su ◑	0311	0016	2.2E
	0902	0612	2.4F
	1625	1243	3.6E
	2233	1920	2.4F

February

	Slack	Maximum	
	h m	h m	knots
1 M	0416	0121	1.8E
	0940	0704	1.7F
	1716	1334	3.4E
	2351	2023	2.6F
2 Tu	0537	0236	1.7E
	1026	0808	1.3F
	1809	1431	3.4E
		2127	2.9F
3 W	0103	0352	1.9E
	0704	0917	1.1F
	1121	1529	3.5E
	1900	2226	3.4F
4 Th	0202	0456	2.3E
	0814	1022	1.1F
	1222	1625	3.7E
	1949	2316	4.0F
5 F	0251	0547	2.8E
	0907	1117	1.4F
	1321	1715	4.1E
	2035		
6 Sa	0334	0002	4.5F
	0951	0631	3.3E
	1416	1206	1.8F
	2119	1802	4.5E
7 Su	0413	0044	5.0F
	1030	0712	3.8E
	1508	1251	2.2F
	2202	1848	4.9E
8 M ●	0451	0125	5.4F
	1108	0751	4.2E
	1559	1336	2.7F
	2246	1933	5.2E
9 Tu	0528	0206	5.6F
	1147	0830	4.7E
	1652	1420	3.1F
	2330	2019	5.3E
10 W	0605	0247	5.6F
	1227	0910	5.0E
	1745	1507	3.5F
		2106	5.1E
11 Th	0015	0328	5.4F
	0641	0951	5.2E
	1310	1555	3.8F
	1841	2155	4.8E
12 F	0103	0412	4.9F
	0719	1034	5.2E
	1356	1646	3.9F
	1941	2248	4.3E
13 Sa	0154	0458	4.2F
	0758	1120	5.0E
	1445	1742	3.9F
	2047	2348	3.6E
14 Su ◐	0253	0549	3.4F
	0840	1211	4.7E
	1540	1845	3.8F
	2202		
15 M	0404	0058	3.0E
	0928	0649	2.5F
	1642	1310	4.4E
	2325	1956	3.8F
16 Tu	0531	0219	2.7E
	1025	0801	1.8F
	1747	1417	4.1E
		2110	3.9F
17 W	0046	0343	2.7E
	0703	0921	1.5F
	1132	1528	4.0E
	1852	2220	4.2F
18 Th	0155	0456	3.0E
	0821	1035	1.5F
	1244	1634	4.0E
	1952	2320	4.5F
19 F	0251	0554	3.5E
	0919	1136	1.8F
	1350	1731	4.2E
	2045		
20 Sa	0337	0010	4.8F
	1005	0641	3.8E
	1447	1227	2.1F
	2132	1821	4.3E
21 Su	0417	0054	4.9F
	1044	0722	4.1E
	1537	1311	2.4F
	2214	1905	4.4E
22 M ○	0452	0133	4.8F
	1119	0758	4.3E
	1623	1351	2.7F
	2253	1945	4.3E
23 Tu	0523	0208	4.7F
	1151	0831	4.3E
	1705	1428	2.9F
	2330	2023	4.2E
24 W	0551	0241	4.4F
	1222	0902	4.4E
	1746	1503	3.0F
		2059	4.0E
25 Th	0006	0313	4.1F
	0618	0932	4.3E
	1253	1538	3.1F
	1827	2136	3.7E
26 F	0042	0344	3.7F
	0644	1002	4.3E
	1324	1614	3.2F
	1909	2214	3.4E
27 Sa	0119	0417	3.2F
	0711	1034	4.1E
	1358	1652	3.1F
	1955	2256	3.0E
28 Su	0201	0452	2.6F
	0739	1108	3.8E
	1436	1735	3.0F
	2046	2343	2.6E
29 M	0250	0532	2.1F
	0810	1148	3.5E
	1519	1825	2.8F
	2145		

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑	0351	0040	2.2E
	0846	0622	1.5F
	1611	1237	3.2E
	2255	1925	2.8F
2 W	0508	0150	1.9E
	0934	0725	1.1F
	1710	1337	3.1E
		2033	2.9F
3 Th	0008	0307	2.0E
	0632	0839	0.9F
	1039	1445	3.1E
	1813	2140	3.2F
4 F	0114	0415	2.4E
	0741	0950	1.1F
	1154	1551	3.4E
	1912	2238	3.7F
5 Sa	0208	0510	2.9E
	0832	1051	1.6F
	1304	1650	3.9E
	2006	2329	4.3F
6 Su	0253	0556	3.5E
	0914	1142	2.2F
	1406	1742	4.4E
	2056		
7 M	0334	0015	4.7F
	0953	0638	4.1E
	1503	1230	2.9F
	2144	1831	4.9E
8 Tu ●	0413	0058	5.1F
	1032	0718	4.7E
	1557	1316	3.6F
	2231	1919	5.2E
9 W	0451	0141	5.3F
	1112	0758	5.1E
	1651	1402	4.2F
	2318	2007	5.4E
10 Th	0528	0224	5.2F
	1153	0839	5.4E
	1745	1448	4.6F
		2056	5.3E
11 F	0007	0307	4.9F
	0606	0921	5.6E
	1236	1536	4.9F
	1840	2147	5.0E
12 Sa	0057	0352	4.3F
	0645	1005	5.4E
	1322	1627	4.9F
	1937	2241	4.5E
13 Su	0152	0440	3.6F
	0726	1051	5.1E
	1411	1721	4.7F
	2039	2340	3.9E
14 M	0254	0533	2.8F
	0810	1143	4.6E
	1505	1821	4.3F
	2147		
15 Tu ◐	0407	0047	3.3E
	0902	0636	2.0F
	1606	1243	4.0E
	2301	1929	4.0F
16 W	0533	0204	3.0E
	1006	0751	1.5F
	1715	1354	3.6E
		2043	3.8F
17 Th	0015	0324	3.0E
	0658	0913	1.4F
	1125	1510	3.4E
	1826	2154	3.8F
18 F	0122	0433	3.3E
	0806	1026	1.7F
	1244	1620	3.4E
	1931	2255	4.0F
19 Sa	0216	0528	3.6E
	0857	1125	2.1F
	1352	1719	3.6E
	2028	2346	4.1F
20 Su	0301	0613	3.9E
	0937	1213	2.5F
	1448	1809	3.8E
	2116		
21 M	0338	0029	4.1F
	1011	0651	4.1E
	1536	1253	2.9F
	2159	1852	3.9E
22 Tu	0410	0106	4.0F
	1042	0724	4.3E
	1619	1330	3.2F
	2238	1931	4.0E
23 W ○	0439	0140	3.8F
	1111	0754	4.3E
	1658	1403	3.5F
	2316	2007	3.9E
24 Th	0506	0212	3.5F
	1139	0823	4.3E
	1736	1436	3.7F
	2352	2043	3.8E
25 F	0531	0243	3.3F
	1207	0851	4.3E
	1814	1508	3.8F
		2118	3.7E
26 Sa	0029	0315	2.9F
	0557	0920	4.2E
	1236	1542	3.8F
	1853	2155	3.5E
27 Su	0109	0347	2.5F
	0624	0951	4.0E
	1308	1618	3.8F
	1934	2235	3.2E
28 M	0151	0423	2.1F
	0652	1025	3.8E
	1343	1657	3.6F
	2019	2319	2.9E
29 Tu	0240	0503	1.7F
	0724	1104	3.5E
	1425	1743	3.4F
	2110		
30 W	0338	0012	2.6E
	0803	0552	1.3F
	1515	1152	3.2E
	2210	1838	3.2F
31 Th ◑	0449	0114	2.4E
	0857	0654	1.0F
	1616	1253	2.9E
	2316	1944	3.1F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Active Pass, British Columbia, 2016

F–Flood, Dir. 045° True E–Ebb, Dir. 225° True

April

	Slack	Maximum	
	h m	h m	knots
1 F	0603	0225	2.4E
	1012	0808	1.0F
	1725	1405	2.9E
		2053	3.2F
2 Sa	0020	0332	2.8E
	0704	0922	1.4F
	1137	1519	3.2E
	1833	2156	3.5F
3 Su	0116	0428	3.3E
	0753	1025	2.0F
	1254	1624	3.6E
	1935	2252	3.9F
4 M	0205	0517	3.9E
	0836	1119	2.8F
	1400	1722	4.2E
	2032	2342	4.3F
5 Tu	0248	0601	4.5E
	0917	1209	3.7F
	1459	1815	4.7E
	2125		
6 W		0028	4.5F
	0329	0644	5.1E
	0957	1256	4.5F
	1555	1906	5.0E
	2216		
7 Th ●		0114	4.5F
	0409	0726	5.5E
	1039	1343	5.2F
	1649	1957	5.2E
	2308		
8 F		0159	4.4F
	0449	0808	5.7E
	1121	1430	5.6F
	1742	2047	5.2E
9 Sa	0000	0246	4.0F
	0530	0852	5.7E
	1205	1518	5.8F
	1836	2139	5.0E
10 Su	0055	0334	3.5F
	0612	0937	5.5E
	1251	1608	5.6F
	1931	2233	4.6E
11 M	0153	0425	2.9F
	0656	1025	5.0E
	1340	1700	5.3F
	2027	2331	4.2E
12 Tu	0257	0521	2.3F
	0745	1118	4.3E
	1433	1757	4.7F
	2127		
13 W ◐		0034	3.7E
	0408	0625	1.8F
	0842	1218	3.7E
	1532	1900	4.2F
	2231		
14 Th		0144	3.5E
	0526	0739	1.5F
	0954	1329	3.1E
	1640	2009	3.7F
	2336		
15 F		0255	3.4E
	0639	0857	1.5F
	1119	1446	2.8E
	1752	2118	3.5F

	Slack	Maximum	
	h m	h m	knots
16 Sa	0036	0358	3.6E
	0737	1007	1.9F
	1241	1558	2.9E
	1901	2219	3.4F
17 Su	0128	0451	3.8E
	0823	1104	2.4F
	1348	1659	3.1E
	2002	2310	3.3F
18 M	0211	0534	4.0E
	0900	1150	2.9F
	1443	1750	3.3E
	2054	2354	3.2F
19 Tu	0248	0611	4.2E
	0933	1229	3.4F
	1530	1834	3.4E
	2140		
20 W		0032	3.1F
	0319	0644	4.3E
	1002	1304	3.7F
	1611	1913	3.5E
	2222		
21 Th ○		0107	2.9F
	0348	0714	4.3E
	1030	1337	4.0F
	1649	1951	3.6E
	2303		
22 F		0141	2.6F
	0416	0743	4.3E
	1058	1409	4.2F
	1726	2027	3.6E
	2343		
23 Sa		0214	2.4F
	0443	0812	4.2E
	1126	1442	4.4F
	1802	2103	3.6E
24 Su	0023	0248	2.1F
	0511	0843	4.1E
	1156	1515	4.4F
	1839	2141	3.5E
25 M	0104	0323	1.9F
	0540	0915	4.0E
	1228	1550	4.4F
	1917	2220	3.4E
26 Tu	0147	0400	1.6F
	0611	0950	3.8E
	1304	1629	4.2F
	1959	2302	3.2E
27 W	0235	0442	1.4F
	0648	1031	3.5E
	1346	1713	4.0F
	2045	2351	3.0E
28 Th	0329	0532	1.2F
	0734	1120	3.2E
	1435	1804	3.7F
	2137		
29 F ◑		0047	2.9E
	0429	0632	1.1F
	0836	1220	2.9E
	1534	1904	3.5F
	2233		
30 Sa		0148	3.0E
	0531	0743	1.3F
	0956	1333	2.8E
	1643	2009	3.4F
	2330		

May

	Slack	Maximum	
	h m	h m	knots
1 Su		0250	3.3E
	0628	0855	1.8F
	1125	1449	2.9E
	1755	2114	3.4F
2 M	0024	0347	3.8E
	0717	1000	2.5F
	1246	1559	3.3E
	1904	2213	3.5F
3 Tu	0114	0438	4.4E
	0801	1057	3.5F
	1355	1703	3.8E
	2008	2308	3.7F
4 W	0159	0525	5.0E
	0844	1149	4.4F
	1456	1800	4.2E
	2108	2359	3.7F
5 Th	0244	0610	5.4E
	0927	1238	5.2F
	1553	1854	4.6E
	2205		
6 F ●		0049	3.6F
	0327	0655	5.7E
	1010	1326	5.8F
	1646	1947	4.8E
	2301		
7 Sa		0138	3.4F
	0411	0740	5.8E
	1054	1414	6.2F
	1738	2039	4.9E
	2357		
8 Su		0228	3.1F
	0456	0826	5.6E
	1139	1502	6.2F
	1829	2131	4.9E
9 M	0054	0319	2.8F
	0542	0914	5.3E
	1225	1551	6.0F
	1920	2224	4.7E
10 Tu	0152	0412	2.4F
	0631	1003	4.8E
	1313	1641	5.6F
	2012	2319	4.4E
11 W	0253	0508	2.0F
	0724	1056	4.1E
	1404	1733	5.0F
	2104		
12 Th		0015	4.1E
	0357	0610	1.7F
	0826	1154	3.4E
	1459	1829	4.3F
	2157		
13 F ◐		0115	3.9E
	0503	0718	1.6F
	0939	1259	2.8E
	1601	1929	3.7F
	2250		
14 Sa		0216	3.8E
	0605	0830	1.7F
	1103	1413	2.5E
	1709	2031	3.2F
	2341		
15 Su		0313	3.8E
	0657	0936	2.1F
	1224	1525	2.4E
	1820	2131	2.8F

	Slack	Maximum	
	h m	h m	knots
16 M	0029	0404	3.9E
	0741	1032	2.6F
	1333	1630	2.5E
	1926	2224	2.6F
17 Tu	0111	0448	4.1E
	0819	1119	3.2F
	1429	1724	2.7E
	2025	2312	2.4F
18 W	0149	0527	4.2E
	0852	1159	3.7F
	1516	1811	2.9E
	2117	2354	2.3F
19 Th	0223	0601	4.3E
	0922	1236	4.1F
	1557	1854	3.2E
	2206		
20 F		0033	2.1F
	0255	0634	4.3E
	0952	1310	4.4F
	1636	1933	3.3E
	2251		
21 Sa ○		0111	1.9F
	0326	0706	4.3E
	1021	1344	4.6F
	1712	2011	3.5E
	2334		
22 Su		0147	1.7F
	0357	0738	4.2E
	1052	1418	4.8F
	1748	2049	3.5E
23 M	0016	0224	1.6F
	0430	0812	4.1E
	1124	1452	4.8F
	1825	2126	3.6E
24 Tu	0058	0302	1.5F
	0504	0847	4.0E
	1159	1529	4.8F
	1902	2205	3.6E
25 W	0140	0341	1.4F
	0542	0926	3.9E
	1237	1608	4.7F
	1941	2246	3.5E
26 Th	0223	0425	1.4F
	0626	1009	3.7E
	1320	1650	4.5F
	2023	2331	3.5E
27 F	0311	0515	1.4F
	0720	1059	3.4E
	1408	1738	4.2F
	2107		
28 Sa		0020	3.5E
	0403	0613	1.5F
	0826	1157	3.1E
	1504	1832	3.9F
	2155		
29 Su ◑		0115	3.7E
	0457	0720	1.7F
	0948	1307	2.8E
	1609	1931	3.5F
	2245		
30 M		0212	3.9E
	0551	0830	2.3F
	1116	1423	2.8E
	1722	2034	3.2F
	2335		
31 Tu		0308	4.3E
	0642	0936	3.1F
	1239	1538	2.9E
	1837	2137	3.1F

June

	Slack	Maximum	
	h m	h m	knots
1 W	0026	0402	4.7E
	0730	1036	4.0F
	1351	1647	3.3E
	1949	2237	3.0F
2 Th	0115	0453	5.2E
	0816	1131	4.9F
	1453	1749	3.8E
	2056	2333	2.9F
3 F	0203	0542	5.5E
	0902	1222	5.6F
	1549	1846	4.2E
	2158		
4 Sa ●		0028	2.8F
	0251	0630	5.6E
	0947	1311	6.1F
	1642	1939	4.5E
	2258		
5 Su		0120	2.6F
	0339	0718	5.6E
	1032	1359	6.3F
	1731	2031	4.7E
	2354		
6 M		0213	2.5F
	0429	0806	5.4E
	1118	1447	6.3F
	1819	2121	4.7E
7 Tu	0049	0305	2.3F
	0519	0854	5.0E
	1204	1533	6.1F
	1905	2211	4.7E
8 W	0143	0357	2.2F
	0611	0943	4.6E
	1251	1620	5.6F
	1950	2259	4.5E
9 Th	0237	0450	2.0F
	0706	1034	4.0E
	1338	1707	5.0F
	2034	2349	4.3E
10 F	0331	0547	1.9F
	0807	1127	3.3E
	1427	1755	4.3F
	2117		
11 Sa		0039	4.2E
	0425	0646	1.9F
	0916	1226	2.7E
	1521	1846	3.6F
	2200		
12 Su ◐		0130	4.0E
	0519	0750	2.0F
	1033	1332	2.2E
	1622	1940	2.9F
	2243		
13 M		0221	3.9E
	0608	0853	2.3F
	1153	1442	2.0E
	1730	2036	2.4F
	2326		
14 Tu		0311	3.9E
	0653	0951	2.7F
	1306	1551	2.0E
	1843	2133	2.0F
15 W	0008	0358	4.0E
	0733	1042	3.2F
	1405	1652	2.2E
	1952	2226	1.8F

	Slack	Maximum	
	h m	h m	knots
16 Th	0049	0441	4.1E
	0810	1126	3.7F
	1454	1745	2.6E
	2053	2315	1.6F
17 F	0129	0520	4.1E
	0844	1206	4.2F
	1537	1831	2.9E
	2148		
18 Sa		0000	1.5F
	0207	0558	4.2E
	0917	1243	4.5F
	1617	1913	3.1E
	2236		
19 Su		0042	1.5F
	0244	0634	4.2E
	0951	1319	4.8F
	1654	1952	3.4E
	2320		
20 M ○		0123	1.4F
	0322	0711	4.2E
	1025	1355	5.0F
	1731	2030	3.6E
21 Tu	0001	0202	1.5F
	0401	0749	4.3E
	1101	1432	5.1F
	1807	2108	3.7E
22 W	0039	0242	1.5F
	0443	0828	4.3E
	1139	1510	5.2F
	1843	2146	3.8E
23 Th	0118	0323	1.6F
	0528	0909	4.2E
	1219	1549	5.1F
	1920	2225	4.0E
24 F	0158	0408	1.8F
	0618	0954	4.0E
	1302	1630	4.9F
	1958	2307	4.0E
25 Sa	0241	0458	1.9F
	0716	1044	3.7E
	1350	1715	4.5F
	2037	2352	4.1E
26 Su	0329	0554	2.1F
	0823	1141	3.3E
	1443	1804	4.0F
	2119		
27 M ◑		0042	4.2E
	0420	0657	2.4F
	0941	1247	2.9E
	1545	1900	3.5F
	2204		
28 Tu		0137	4.4E
	0515	0805	2.9F
	1107	1403	2.7E
	1659	2002	2.9F
	2253		
29 W		0234	4.6E
	0609	0914	3.5F
	1232	1522	2.7E
	1820	2108	2.5F
	2345		
30 Th		0331	4.8E
	0702	1017	4.3F
	1345	1636	3.0E
	1940	2214	2.3F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Active Pass, British Columbia, 2016

F–Flood, Dir. 045° True E–Ebb, Dir. 225° True

July

	Slack	Maximum	
	h m	h m	knots
1 F	0038	0428	5.0E
	0753	1115	5.0F
	1448	1741	3.4E
	2053	2316	2.2F
2 Sa	0133	0521	5.2E
	0842	1208	5.6F
	1543	1839	3.9E
	2156		
3 Su		0014	2.2F
	0227	0613	5.3E
	0930	1258	6.0F
	1633	1931	4.2E
	2253		
4 M ●		0109	2.2F
	0320	0703	5.3E
	1017	1346	6.1F
	1719	2020	4.5E
	2346		
5 Tu		0200	2.2F
	0413	0751	5.1E
	1102	1431	6.0F
	1803	2106	4.6E
6 W	0034	0250	2.3F
	0505	0838	4.8E
	1147	1515	5.8F
	1843	2150	4.6E
7 Th	0120	0338	2.3F
	0557	0925	4.4E
	1231	1556	5.3F
	1922	2232	4.6E
8 F	0205	0426	2.3F
	0650	1011	3.9E
	1314	1637	4.8F
	1958	2313	4.4E
9 Sa	0250	0515	2.2F
	0745	1058	3.3E
	1357	1718	4.1F
	2033	2355	4.3E
10 Su	0336	0606	2.2F
	0846	1150	2.7E
	1444	1801	3.4F
	2108		
11 M ◐		0039	4.1E
	0423	0702	2.2F
	0954	1248	2.2E
	1538	1848	2.7F
	2145		
12 Tu		0125	3.9E
	0510	0801	2.4F
	1109	1355	1.9E
	1644	1941	2.1F
	2224		
13 W		0215	3.8E
	0558	0901	2.7F
	1224	1507	1.8E
	1800	2041	1.6F
	2307		
14 Th		0306	3.7E
	0643	0957	3.1F
	1329	1615	2.0E
	1920	2142	1.3F
	2354		
15 F		0355	3.7E
	0726	1048	3.6F
	1423	1714	2.3E
	2029	2239	1.2F
16 Sa	0042	0442	3.8E
	0807	1133	4.0F
	1509	1804	2.7E
	2125	2330	1.3F
17 Su	0130	0526	4.0E
	0846	1215	4.4F
	1550	1847	3.1E
	2212		
18 M		0016	1.4F
	0216	0608	4.2E
	0925	1254	4.8F
	1629	1927	3.4E
	2252		
19 Tu ○		0059	1.6F
	0301	0649	4.4E
	1004	1332	5.1F
	1705	2005	3.7E
	2330		
20 W		0140	1.8F
	0347	0730	4.5E
	1043	1410	5.3F
	1741	2042	4.0E
21 Th	0006	0221	2.0F
	0434	0812	4.6E
	1123	1449	5.3F
	1816	2119	4.2E
22 F	0043	0304	2.3F
	0524	0856	4.6E
	1205	1528	5.3F
	1851	2157	4.4E
23 Sa	0122	0349	2.6F
	0617	0942	4.4E
	1249	1609	5.0F
	1927	2238	4.6E
24 Su	0204	0438	2.8F
	0715	1032	4.0E
	1337	1652	4.5F
	2005	2322	4.6E
25 M	0251	0532	3.0F
	0820	1128	3.6E
	1430	1740	3.9F
	2044		
26 Tu ◑		0010	4.6E
	0342	0633	3.2F
	0935	1234	3.0E
	1533	1835	3.1F
	2128		
27 W		0104	4.5E
	0438	0741	3.4F
	1058	1350	2.7E
	1649	1939	2.4F
	2217		
28 Th		0204	4.5E
	0538	0852	3.8F
	1221	1512	2.6E
	1817	2050	2.0F
	2314		
29 F		0308	4.5E
	0637	1000	4.3F
	1336	1628	2.9E
	1942	2203	1.8F
30 Sa	0016	0410	4.6E
	0734	1102	4.9F
	1438	1734	3.4E
	2054	2309	1.8F
31 Su	0119	0509	4.7E
	0828	1156	5.3F
	1531	1830	3.8E
	2152		

August

	Slack	Maximum	
	h m	h m	knots
1 M		0008	2.0F
	0219	0603	4.8E
	0918	1246	5.5F
	1617	1918	4.2E
	2242		
2 Tu ●		0059	2.2F
	0315	0653	4.8E
	1005	1331	5.6F
	1659	2002	4.4E
	2326		
3 W		0148	2.4F
	0408	0739	4.8E
	1049	1413	5.5F
	1737	2042	4.5E
4 Th	0007	0232	2.6F
	0458	0824	4.5E
	1131	1452	5.2F
	1812	2120	4.6E
5 F	0045	0315	2.7F
	0546	0906	4.2E
	1212	1529	4.8F
	1845	2156	4.5E
6 Sa	0123	0357	2.7F
	0634	0948	3.8E
	1251	1605	4.3F
	1915	2231	4.4E
7 Su	0200	0439	2.7F
	0723	1030	3.4E
	1332	1641	3.7F
	1945	2307	4.2E
8 M	0239	0523	2.7F
	0815	1116	2.9E
	1415	1719	3.0F
	2016	2345	4.0E
9 Tu	0320	0610	2.7F
	0914	1208	2.4E
	1506	1802	2.4F
	2048		
10 W ◐		0028	3.7E
	0406	0704	2.6F
	1020	1309	2.0E
	1609	1852	1.7F
	2126		
11 Th		0117	3.5E
	0455	0805	2.7F
	1132	1421	1.8E
	1727	1954	1.3F
	2211		
12 F		0212	3.3E
	0548	0907	2.9F
	1242	1535	2.0E
	1852	2102	1.0F
	2305		
13 Sa		0311	3.3E
	0640	1006	3.3F
	1342	1639	2.3E
	2003	2207	1.1F
14 Su	0006	0407	3.5E
	0730	1058	3.8F
	1432	1731	2.7E
	2056	2303	1.3F
15 M	0105	0458	3.8E
	0816	1144	4.2F
	1515	1815	3.2E
	2138	2351	1.6F
16 Tu	0159	0545	4.1E
	0900	1225	4.7F
	1554	1854	3.6E
	2215		
17 W		0035	2.0F
	0251	0630	4.5E
	0943	1305	5.0F
	1630	1932	4.0E
	2250		
18 Th ○		0117	2.5F
	0341	0713	4.8E
	1025	1345	5.2F
	1706	2009	4.4E
	2326		
19 F		0159	2.9F
	0431	0757	4.9E
	1108	1424	5.3F
	1741	2046	4.7E
20 Sa	0003	0243	3.4F
	0522	0843	4.9E
	1153	1504	5.1F
	1816	2125	4.9E
21 Su	0043	0329	3.7F
	0616	0931	4.7E
	1239	1546	4.7F
	1852	2206	5.0E
22 M	0126	0418	3.9F
	0714	1022	4.3E
	1329	1631	4.2F
	1930	2250	5.0E
23 Tu	0213	0511	4.0F
	0816	1119	3.8E
	1425	1720	3.4F
	2010	2339	4.8E
24 W ◑	0305	0610	3.9F
	0927	1224	3.2E
	1532	1817	2.6F
	2056		
25 Th		0035	4.4E
	0403	0717	3.9F
	1045	1340	2.8E
	1653	1925	1.9F
	2150		
26 F		0139	4.1E
	0508	0831	4.0F
	1205	1503	2.8E
	1824	2043	1.5F
	2256		
27 Sa		0250	4.0E
	0615	0943	4.2F
	1318	1619	3.1E
	1946	2200	1.6F
28 Su	0011	0359	4.0E
	0718	1047	4.5F
	1418	1722	3.5E
	2049	2307	1.8F
29 M	0122	0502	4.2E
	0816	1141	4.8F
	1508	1813	3.9E
	2138		
30 Tu		0002	2.2F
	0224	0556	4.3E
	0907	1229	4.9F
	1551	1857	4.2E
	2220		
31 W		0050	2.6F
	0319	0644	4.4E
	0953	1311	4.9F
	1628	1936	4.4E
	2257		

September

	Slack	Maximum	
	h m	h m	knots
1 Th ●		0132	2.9F
	0408	0728	4.4E
	1036	1349	4.7F
	1702	2011	4.5E
	2331		
2 F		0211	3.1F
	0453	0809	4.3E
	1116	1425	4.4F
	1732	2044	4.5E
3 Sa	0004	0249	3.3F
	0537	0848	4.0E
	1154	1458	4.0F
	1800	2115	4.5E
4 Su	0036	0325	3.4F
	0619	0926	3.7E
	1232	1531	3.5F
	1827	2147	4.3E
5 M	0108	0402	3.4F
	0702	1006	3.4E
	1312	1605	3.0F
	1854	2219	4.1E
6 Tu	0142	0441	3.3F
	0748	1048	3.0E
	1355	1641	2.5F
	1923	2254	3.8E
7 W	0219	0523	3.2F
	0838	1135	2.6E
	1446	1722	1.9F
	1954	2333	3.5E
8 Th	0301	0611	3.0F
	0934	1231	2.3E
	1548	1812	1.4F
	2031		
9 F ◐		0021	3.2E
	0351	0709	2.9F
	1040	1339	2.1E
	1705	1914	1.0F
	2119		
10 Sa		0120	2.9E
	0449	0814	2.9F
	1149	1452	2.1E
	1827	2027	0.8F
	2223		
11 Su		0227	2.9E
	0551	0919	3.1F
	1252	1559	2.5E
	1933	2137	1.0F
	2339		
12 M		0333	3.1E
	0650	1018	3.5F
	1345	1652	2.9E
	2020	2236	1.5F
13 Tu	0049	0431	3.5E
	0745	1108	4.0F
	1430	1737	3.4E
	2059	2326	2.1F
14 W	0149	0522	4.0E
	0834	1153	4.4F
	1510	1817	4.0E
	2134		
15 Th		0011	2.7F
	0244	0610	4.5E
	0921	1235	4.7F
	1548	1855	4.5E
	2210		
16 F ○	0336	0054	3.4F
	1007	0657	4.8E
	1624	1316	4.9F
	2247	1933	4.9E
17 Sa		0138	4.0F
	0428	0743	5.0E
	1054	1358	4.8F
	1700	2012	5.3E
	2326		
18 Su		0223	4.5F
	0520	0831	5.1E
	1141	1440	4.6F
	1737	2053	5.4E
19 M	0007	0309	4.9F
	0614	0921	4.9E
	1232	1524	4.2F
	1815	2135	5.4E
20 Tu	0051	0358	5.0F
	0710	1014	4.5E
	1326	1612	3.5F
	1855	2221	5.2E
21 W	0139	0451	4.9F
	0810	1111	4.0E
	1427	1704	2.8F
	1939	2311	4.7E
22 Th	0231	0549	4.6F
	0916	1216	3.5E
	1538	1805	2.1F
	2029		
23 F ◑		0009	4.2E
	0330	0654	4.3F
	1027	1331	3.2E
	1701	1918	1.6F
	2132		
24 Sa		0118	3.7E
	0438	0807	4.0F
	1141	1450	3.2E
	1827	2040	1.4F
	2251		
25 Su		0235	3.4E
	0550	0920	4.0F
	1249	1602	3.4E
	1938	2157	1.7F
26 M	0015	0349	3.4E
	0659	1025	4.1F
	1346	1701	3.8E
	2031	2259	2.2F
27 Tu	0129	0453	3.6E
	0800	1119	4.2F
	1434	1748	4.1E
	2114	2351	2.7F
28 W	0230	0547	3.8E
	0853	1205	4.2F
	1513	1828	4.4E
	2150		
29 Th		0034	3.1F
	0321	0633	4.0E
	0940	1245	4.0F
	1548	1903	4.5E
	2222		
30 F ●		0113	3.5F
	0406	0715	4.0E
	1022	1321	3.8F
	1618	1935	4.5E
	2253		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Active Pass, British Columbia, 2016

F–Flood, Dir. 045° True E–Ebb, Dir. 225° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa		0148	3.7F
	0448	0754	3.9E
	1102	1355	3.5F
	1645	2005	4.5E
	2321		
2 Su		0222	3.9F
	0527	0831	3.8E
	1140	1427	3.1F
	1711	2034	4.4E
	2350		
3 M		0255	4.0F
	0606	0908	3.6E
	1219	1459	2.7F
	1737	2103	4.3E
4 Tu	0020	0329	4.0F
	0645	0945	3.4E
	1259	1533	2.3F
	1804	2134	4.0E
5 W	0051	0405	3.9F
	0725	1025	3.2E
	1344	1609	1.9F
	1832	2208	3.8E
6 Th	0126	0443	3.8F
	0809	1110	2.9E
	1435	1650	1.5F
	1904	2246	3.4E
7 F	0206	0528	3.5F
	0858	1201	2.6E
	1535	1739	1.1F
	1942	2333	3.0E
8 Sa ◐	0253	0620	3.3F
	0955	1302	2.5E
	1646	1841	0.8F
	2034		
9 Su		0031	2.7E
	0351	0723	3.1F
	1057	1410	2.5E
	1759	1954	0.8F
	2149		
10 M		0143	2.6E
	0458	0830	3.1F
	1158	1514	2.8E
	1856	2106	1.2F
	2316		
11 Tu		0256	2.8E
	0607	0932	3.4F
	1252	1609	3.2E
	1941	2208	1.8F
12 W	0034	0402	3.2E
	0709	1027	3.7F
	1339	1655	3.8E
	2019	2259	2.6F
13 Th	0140	0459	3.8E
	0806	1116	4.0F
	1421	1738	4.4E
	2056	2347	3.5F
14 F	0238	0551	4.3E
	0859	1202	4.2F
	1501	1818	5.0E
	2134		
15 Sa ○		0033	4.3F
	0332	0641	4.7E
	0950	1247	4.3F
	1540	1859	5.4E
	2213		

	Slack	Maximum	
	h m	h m	knots
16 Su		0118	5.0F
	0425	0731	4.9E
	1041	1331	4.2F
	1618	1940	5.7E
	2254		
17 M		0204	5.6F
	0518	0821	5.0E
	1133	1417	3.9F
	1658	2023	5.8E
	2337		
18 Tu		0251	5.8F
	0611	0912	4.9E
	1228	1505	3.4F
	1740	2108	5.6E
19 W	0022	0340	5.8F
	0705	1006	4.6E
	1326	1556	2.9F
	1824	2155	5.2E
20 Th	0110	0432	5.6F
	0801	1104	4.3E
	1429	1651	2.3F
	1912	2247	4.6E
21 F	0202	0528	5.1F
	0900	1206	3.9E
	1541	1755	1.8F
	2009	2347	3.9E
22 Sa ◑	0300	0630	4.6F
	1003	1315	3.7E
	1659	1909	1.5F
	2120		
23 Su		0056	3.3E
	0406	0738	4.1F
	1108	1427	3.6E
	1814	2029	1.5F
	2247		
24 M		0215	2.9E
	0519	0848	3.7F
	1209	1533	3.8E
	1915	2143	1.9F
25 Tu	0015	0331	2.9E
	0632	0952	3.6F
	1303	1628	4.0E
	2003	2243	2.5F
26 W	0129	0437	3.0E
	0737	1047	3.4F
	1348	1714	4.3E
	2042	2332	3.1F
27 Th	0228	0532	3.3E
	0833	1134	3.3F
	1426	1753	4.4E
	2116		
28 F		0014	3.6F
	0318	0618	3.4E
	0922	1214	3.1F
	1459	1826	4.5E
	2147		
29 Sa		0050	4.0F
	0401	0659	3.5E
	1007	1250	2.8F
	1529	1857	4.5E
	2215		
30 Su ●		0124	4.2F
	0440	0738	3.6E
	1049	1325	2.6F
	1556	1927	4.5E
	2243		
31 M		0157	4.4F
	0517	0815	3.6E
	1130	1358	2.3F
	1623	1956	4.4E
	2311		

November

	Slack	Maximum	
	h m	h m	knots
1 Tu		0229	4.5F
	0553	0852	3.5E
	1211	1432	2.0F
	1650	2026	4.2E
	2340		
2 W		0302	4.6F
	0629	0929	3.5E
	1254	1507	1.7F
	1719	2058	4.0E
3 Th	0012	0336	4.5F
	0707	1008	3.3E
	1338	1544	1.5F
	1749	2132	3.8E
4 F	0046	0414	4.3F
	0747	1050	3.2E
	1426	1625	1.2F
	1824	2211	3.5E
5 Sa	0125	0455	4.1F
	0830	1136	3.0E
	1520	1713	1.0F
	1907	2256	3.1E
6 Su	0211	0543	3.8F
	0918	1229	2.9E
	1620	1812	0.9F
	2004	2353	2.8E
7 M ◐	0305	0639	3.5F
	1011	1328	3.0E
	1720	1921	1.0F
	2123		
8 Tu		0102	2.6E
	0410	0741	3.3F
	1105	1428	3.2E
	1814	2033	1.4F
	2255		
9 W		0219	2.6E
	0522	0845	3.3F
	1158	1524	3.7E
	1859	2138	2.2F
10 Th	0020	0332	2.9E
	0632	0945	3.3F
	1246	1614	4.2E
	1942	2234	3.1F
11 F	0131	0436	3.4E
	0738	1039	3.5F
	1331	1659	4.8E
	2022	2325	4.1F
12 Sa	0233	0534	3.9E
	0838	1130	3.5F
	1415	1744	5.3E
	2103		
13 Su		0013	5.0F
	0329	0628	4.3E
	0936	1220	3.5F
	1457	1828	5.7E
	2145		
14 M ○		0101	5.8F
	0422	0721	4.6E
	1032	1309	3.4F
	1541	1913	5.9E
	2228		
15 Tu		0148	6.2F
	0514	0813	4.8E
	1128	1358	3.1F
	1625	1958	5.9E
	2312		

	Slack	Maximum	
	h m	h m	knots
16 W		0236	6.4F
	0605	0905	4.8E
	1225	1449	2.8F
	1711	2046	5.6E
	2359		
17 Th		0325	6.3F
	0656	0958	4.7E
	1324	1542	2.5F
	1759	2135	5.1E
18 F	0047	0415	6.0F
	0748	1052	4.5E
	1425	1639	2.1F
	1853	2227	4.5E
19 Sa	0137	0508	5.4F
	0840	1150	4.3E
	1530	1741	1.8F
	1954	2325	3.8E
20 Su	0232	0603	4.7F
	0933	1250	4.1E
	1637	1850	1.6F
	2107		
21 M ◑		0031	3.1E
	0333	0703	4.0F
	1027	1352	4.0E
	1742	2003	1.7F
	2233		
22 Tu		0145	2.6E
	0441	0806	3.4F
	1120	1452	4.0E
	1838	2114	2.1F
23 W	0001	0301	2.4E
	0553	0908	3.0F
	1209	1546	4.1E
	1925	2215	2.7F
24 Th	0117	0411	2.4E
	0704	1005	2.7F
	1253	1632	4.2E
	2005	2305	3.2F
25 F	0217	0509	2.6E
	0807	1055	2.5F
	1332	1712	4.4E
	2039	2348	3.8F
26 Sa	0307	0559	2.9E
	0903	1139	2.3F
	1407	1748	4.4E
	2111		
27 Su		0025	4.2F
	0349	0643	3.1E
	0953	1219	2.1F
	1440	1821	4.4E
	2141		
28 M		0059	4.5F
	0428	0723	3.3E
	1039	1257	1.9F
	1511	1853	4.4E
	2210		
29 Tu ●		0133	4.7F
	0504	0801	3.4E
	1123	1334	1.7F
	1541	1925	4.3E
	2240		
30 W		0206	4.9F
	0539	0837	3.5E
	1205	1410	1.5F
	1613	1958	4.2E
	2311		

December

	Slack	Maximum	
	h m	h m	knots
1 Th		0240	4.9F
	0614	0914	3.5E
	1245	1446	1.4F
	1645	2032	4.1E
	2344		
2 F		0315	4.9F
	0650	0951	3.5E
	1326	1524	1.3F
	1721	2108	3.9E
3 Sa	0020	0351	4.8F
	0726	1030	3.5E
	1408	1605	1.3F
	1802	2147	3.7E
4 Su	0059	0430	4.5F
	0805	1111	3.4E
	1453	1651	1.2F
	1850	2232	3.4E
5 M	0142	0514	4.2F
	0846	1157	3.4E
	1542	1745	1.3F
	1950	2326	3.1E
6 Tu	0233	0603	3.9F
	0930	1248	3.5E
	1635	1849	1.5F
	2107		
7 W ◐		0030	2.7E
	0332	0659	3.5F
	1016	1343	3.7E
	1727	1958	1.9F
	2236		
8 Th		0146	2.5E
	0442	0800	3.2F
	1105	1439	4.1E
	1818	2107	2.6F
9 F	0005	0304	2.6E
	0559	0904	2.9F
	1155	1534	4.5E
	1906	2209	3.5F
10 Sa	0122	0416	2.9E
	0714	1005	2.8F
	1244	1626	5.0E
	1952	2305	4.5F
11 Su	0227	0520	3.4E
	0824	1103	2.8F
	1333	1715	5.4E
	2038	2357	5.4F
12 M	0325	0619	3.9E
	0928	1159	2.7F
	1422	1804	5.7E
	2123		
13 Tu ○		0046	6.0F
	0418	0713	4.3E
	1028	1252	2.7F
	1511	1852	5.8E
	2209		
14 W		0135	6.4F
	0508	0805	4.6E
	1125	1345	2.6F
	1601	1941	5.7E
	2255		
15 Th		0223	6.6F
	0556	0856	4.8E
	1220	1437	2.5F
	1652	2030	5.5E
	2341		

	Slack	Maximum	
	h m	h m	knots
16 F		0310	6.4F
	0643	0946	4.8E
	1314	1530	2.4F
	1745	2119	5.0E
17 Sa	0028	0357	6.0F
	0729	1035	4.7E
	1408	1623	2.2F
	1840	2209	4.4E
18 Su	0116	0445	5.4F
	0813	1125	4.5E
	1503	1719	2.1F
	1939	2302	3.7E
19 M	0205	0533	4.7F
	0857	1215	4.3E
	1559	1820	2.0F
	2047		
20 Tu ◑		0000	3.0E
	0258	0624	3.9F
	0941	1307	4.1E
	1655	1924	2.0F
	2205		
21 W		0106	2.4E
	0358	0718	3.2F
	1024	1401	4.0E
	1749	2031	2.2F
	2329		
22 Th		0219	2.0E
	0507	0816	2.5F
	1108	1454	4.0E
	1837	2134	2.6F
23 F	0049	0333	2.0E
	0623	0915	2.0F
	1152	1543	4.0E
	1921	2229	3.2F
24 Sa	0154	0439	2.1E
	0737	1012	1.7F
	1235	1629	4.1E
	1959	2316	3.7F
25 Su	0246	0535	2.5E
	0843	1104	1.6F
	1316	1710	4.1E
	2035	2357	4.1F
26 M	0330	0622	2.8E
	0938	1150	1.5F
	1356	1749	4.2E
	2109		
27 Tu		0035	4.5F
	0409	0704	3.1E
	1027	1233	1.4F
	1434	1825	4.2E
	2142		
28 W ●		0111	4.8F
	0446	0743	3.3E
	1109	1312	1.4F
	1512	1901	4.3E
	2216		
29 Th		0146	5.0F
	0521	0819	3.5E
	1149	1350	1.5F
	1549	1937	4.3E
	2250		
30 F		0220	5.1F
	0555	0855	3.7E
	1225	1428	1.5F
	1628	2013	4.3E
	2325		
31 Sa		0255	5.1F
	0629	0930	3.8E
	1301	1506	1.6F
	1709	2051	4.2E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Burrard Inlet (First Narrows), British Columbia, 2016

F–Flood, Dir. 135° True E–Ebb, Dir. 315° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◐		0118	2.1E
	0413	0751	3.2F
	1119	1444	3.0E
	1843	2055	1.1F
	2320		
2 Sa		0217	1.5E
	0455	0834	2.7F
	1153	1532	3.1E
	1934	2206	1.4F
3 Su	0103	0329	1.0E
	0547	0923	2.2F
	1227	1621	3.3E
	2020	2313	1.9F
4 M	0243	0448	0.8E
	0654	1017	1.8F
	1304	1708	3.5E
	2101		
5 Tu		0011	2.4F
	0359	0602	0.8E
	0811	1112	1.5F
	1341	1753	3.8E
	2139		
6 W		0059	3.1F
	0455	0704	1.1E
	0924	1204	1.3F
	1419	1835	4.1E
	2216		
7 Th		0141	3.6F
	0540	0754	1.3E
	1026	1252	1.3F
	1459	1915	4.4E
	2253		
8 F		0221	4.1F
	0619	0839	1.6E
	1118	1337	1.3F
	1541	1955	4.6E
	2330		
9 Sa ●		0259	4.5F
	0656	0919	1.9E
	1204	1421	1.4F
	1625	2036	4.8E
10 Su	0008	0337	4.8F
	0730	0958	2.1E
	1248	1506	1.5F
	1711	2117	4.9E
11 M	0046	0415	5.0F
	0804	1037	2.4E
	1332	1551	1.7F
	1800	2159	4.9E
12 Tu	0126	0453	5.0F
	0838	1117	2.7E
	1418	1640	1.8F
	1853	2244	4.6E
13 W	0206	0532	4.9F
	0912	1159	3.0E
	1508	1732	1.9F
	1950	2331	4.2E
14 Th	0248	0613	4.6F
	0946	1244	3.3E
	1604	1830	1.9F
	2055		
15 F		0023	3.5E
	0332	0657	4.1F
	1022	1333	3.5E
	1704	1935	2.0F
	2212		

	Slack	Maximum	
	h m	h m	knots
16 Sa ◐		0122	2.7E
	0419	0744	3.5F
	1100	1426	3.8E
	1807	2049	2.2F
	2346		
17 Su		0233	1.9E
	0515	0837	2.9F
	1142	1524	4.0E
	1912	2209	2.5F
18 M	0133	0357	1.4E
	0624	0938	2.3F
	1227	1625	4.2E
	2013	2325	3.1F
19 Tu	0311	0526	1.3E
	0748	1045	1.8F
	1316	1724	4.5E
	2109		
20 W		0031	3.7F
	0427	0643	1.4E
	0913	1151	1.6F
	1408	1821	4.7E
	2159		
21 Th		0127	4.3F
	0524	0746	1.8E
	1027	1252	1.5F
	1501	1912	4.8E
	2247		
22 F		0216	4.7F
	0610	0839	2.1E
	1128	1347	1.5F
	1554	2000	4.8E
	2330		
23 Sa ○		0259	4.9F
	0651	0924	2.4E
	1220	1437	1.6F
	1644	2045	4.8E
24 Su	0011	0340	4.9F
	0726	1005	2.6E
	1307	1523	1.6F
	1732	2126	4.5E
25 M	0049	0416	4.8F
	0759	1042	2.8E
	1349	1607	1.7F
	1818	2206	4.2E
26 Tu	0124	0451	4.6F
	0828	1118	2.9E
	1431	1650	1.7F
	1904	2244	3.8E
27 W	0158	0523	4.2F
	0856	1152	3.0E
	1512	1733	1.7F
	1952	2322	3.3E
28 Th	0230	0555	3.9F
	0922	1227	3.1E
	1555	1817	1.6F
	2042		
29 F		0001	2.7E
	0303	0627	3.4F
	0949	1303	3.1E
	1640	1906	1.6F
	2140		
30 Sa		0045	2.1E
	0337	0702	2.9F
	1016	1343	3.1E
	1728	2001	1.6F
	2250		
31 Su ◑		0137	1.5E
	0415	0740	2.4F
	1046	1427	3.1E
	1820	2106	1.7F

February

	Slack	Maximum	
	h m	h m	knots
1 M	0018	0241	1.0E
	0504	0825	1.8F
	1120	1517	3.2E
	1914	2216	1.9F
2 Tu	0157	0401	0.7E
	0610	0921	1.4F
	1159	1612	3.3E
	2006	2323	2.4F
3 W	0322	0524	0.7F
	0735	1025	1.1F
	1245	1707	3.5E
	2055		
4 Th		0020	2.9F
	0422	0632	1.0E
	0857	1129	1.1F
	1338	1759	3.8E
	2141		
5 F		0109	3.4F
	0507	0725	1.3E
	1001	1226	1.2F
	1433	1848	4.2E
	2225		
6 Sa		0152	3.9F
	0545	0809	1.7E
	1052	1317	1.5F
	1527	1935	4.5E
	2306		
7 Su		0232	4.4F
	0619	0849	2.1E
	1137	1406	1.8F
	1621	2019	4.8E
	2348		
8 M ●		0311	4.7F
	0652	0928	2.6E
	1220	1453	2.1F
	1714	2104	4.9E
9 Tu	0028	0349	4.9F
	0724	1007	3.0E
	1305	1541	2.5F
	1809	2149	4.9E
10 W	0109	0428	4.9F
	0756	1047	3.4E
	1351	1631	2.7F
	1905	2235	4.6E
11 Th	0151	0507	4.7F
	0829	1128	3.8E
	1439	1722	2.9F
	2004	2324	4.1E
12 F	0233	0548	4.3F
	0903	1212	4.0E
	1531	1818	2.9F
	2109		
13 Sa		0016	3.4E
	0318	0630	3.7F
	0938	1259	4.1E
	1627	1919	2.9F
	2223		
14 Su ◐		0110	2.6E
	0408	0717	3.0F
	1016	1351	4.1E
	1728	2028	2.9F
	2350		
15 M		0226	1.8E
	0507	0812	2.3F
	1059	1450	4.0E
	1834	2145	3.0F

	Slack	Maximum	
	h m	h m	knots
16 Tu	0128	0351	1.4E
	0624	0917	1.7F
	1149	1555	3.9E
	1940	2303	3.3F
17 W	0259	0520	1.3E
	0757	1032	1.3F
	1248	1703	4.0E
	2043		
18 Th		0012	3.6F
	0408	0636	1.6E
	0924	1146	1.2F
	1354	1806	4.0E
	2139		
19 F		0109	4.0F
	0459	0734	2.0E
	1031	1250	1.4F
	1459	1901	4.1E
	2229		
20 Sa		0157	4.2F
	0541	0821	2.3E
	1122	1344	1.6F
	1557	1950	4.2E
	2314		
21 Su		0239	4.3F
	0617	0901	2.6E
	1204	1431	1.8F
	1650	2034	4.1E
	2353		
22 M ○		0315	4.3F
	0647	0936	2.8E
	1242	1513	2.0F
	1738	2114	3.9E
23 Tu	0030	0348	4.1F
	0714	1008	3.0E
	1318	1552	2.2F
	1823	2151	3.7E
24 W	0103	0419	3.9F
	0739	1039	3.2E
	1352	1630	2.3F
	1908	2227	3.4E
25 Th	0135	0448	3.6F
	0802	1108	3.3E
	1426	1708	2.4F
	1953	2303	3.0F
26 F	0207	0517	3.2F
	0825	1139	3.4E
	1501	1747	2.4F
	2040	2341	2.6E
27 Sa	0239	0547	2.8F
	0849	1210	3.4E
	1538	1829	2.4F
	2131		
28 Su		0023	2.1E
	0314	0619	2.4F
	0914	1246	3.3E
	1620	1916	2.3F
	2230		
29 M		0110	1.6E
	0354	0655	1.9F
	0942	1326	3.2E
	1708	2011	2.3F
	2342		

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑		0209	1.2E
	0444	0739	1.5F
	1015	1415	3.1E
	1803	2117	2.3F
2 W	0106	0323	0.9E
	0552	0836	1.1F
	1058	1515	3.0E
	1904	2227	2.5F
3 Th	0227	0444	0.9E
	0718	0948	0.9F
	1157	1621	3.1E
	2005	2333	2.8F
4 F	0329	0554	1.2E
	0838	1101	1.0F
	1307	1724	3.4E
	2101		
5 Sa		0028	3.3F
	0416	0648	1.6E
	0937	1205	1.3F
	1418	1822	3.8E
	2152		
6 Su		0115	3.7F
	0454	0733	2.1E
	1026	1301	1.8F
	1523	1914	4.2E
	2239		
7 M		0158	4.1F
	0529	0814	2.7E
	1110	1352	2.4F
	1624	2003	4.5E
	2323		
8 Tu ●		0239	4.3F
	0602	0854	3.3E
	1154	1442	2.9F
	1722	2051	4.6E
9 W	0007	0319	4.5F
	0635	0933	3.8E
	1238	1531	3.4F
	1819	2139	4.5E
10 Th	0051	0359	4.4F
	0708	1014	4.2E
	1324	1620	3.7F
	1917	2227	4.2E
11 F	0135	0439	4.1F
	0742	1055	4.5E
	1411	1711	3.9F
	2017	2318	3.7E
12 Sa	0222	0521	3.6F
	0817	1139	4.6E
	1500	1805	4.0F
	2121		
13 Su		0013	3.1E
	0311	0606	3.0F
	0854	1226	4.5E
	1553	1903	3.8F
	2230		
14 M		0113	2.5E
	0407	0656	2.4F
	0934	1318	4.2E
	1651	2007	3.6F
	2347		
15 Tu ◐		0223	2.0E
	0515	0754	1.7F
	1020	1417	3.8E
	1754	2118	3.4F

	Slack	Maximum	
	h m	h m	knots
16 W	0109	0344	1.7E
	0641	0906	1.2F
	1118	1526	3.5E
	1902	2233	3.4F
17 Th	0226	0507	1.7E
	0814	1028	1.0F
	1232	1640	3.3E
	2010	2342	3.5F
18 F	0328	0616	2.0E
	0929	1144	1.2F
	1353	1749	3.3E
	2111		
19 Sa		0039	3.6F
	0416	0709	2.4E
	1023	1247	1.5F
	1505	1847	3.3E
	2204		
20 Su		0127	3.6F
	0455	0752	2.7E
	1105	1338	1.9F
	1607	1937	3.4E
	2249		
21 M		0207	3.6F
	0527	0828	3.0E
	1141	1421	2.2F
	1659	2020	3.3E
	2330		
22 Tu		0242	3.5F
	0554	0859	3.2E
	1213	1459	2.5F
	1747	2059	3.2E
23 W ○	0006	0313	3.3F
	0618	0929	3.4E
	1244	1536	2.8F
	1831	2137	3.1E
24 Th	0041	0342	3.0F
	0641	0957	3.5E
	1313	1611	3.0F
	1914	2213	2.9E
25 F	0114	0411	2.8F
	0702	1024	3.6E
	1343	1646	3.1F
	1956	2250	2.6E
26 Sa	0149	0440	2.5F
	0724	1053	3.7E
	1415	1721	3.2F
	2040	2328	2.3E
27 Su	0224	0510	2.1F
	0747	1123	3.6E
	1449	1759	3.2F
	2127		
28 M		0008	2.0E
	0303	0543	1.8F
	0812	1157	3.5E
	1526	1842	3.1F
	2218		
29 Tu		0054	1.7E
	0347	0620	1.4F
	0841	1236	3.3E
	1611	1931	2.9F
	2317		
30 W		0149	1.4E
	0442	0705	1.1F
	0917	1325	3.1E
	1703	2029	2.8F
31 Th ◑	0024	0255	1.3E
	0552	0805	0.8F
	1007	1425	2.9E
	1804	2135	2.8F

Time meridian 120° W 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Burrard Inlet (First Narrows), British Columbia, 2016

F–Flood, Dir. 135° True E–Ebb, Dir. 315° True

April

		Slack	Maximum	
		h m	h m	knots
1	F	0131	0408	1.3E
		0712	0921	0.8F
		1119	1536	2.9E
		1910	2242	2.9F
2	Sa	0229	0514	1.7E
		0821	1039	1.0F
		1247	1649	3.0E
		2014	2341	3.2F
3	Su	0315	0608	2.2E
		0916	1148	1.6F
		1411	1754	3.3E
		2112		
4	M		0032	3.5F
		0355	0654	2.8E
		1002	1246	2.3F
		1524	1852	3.6E
		2205		
5	Tu		0119	3.7F
		0432	0737	3.5E
		1046	1339	3.0F
		1630	1946	3.8E
		2255		
6	W		0202	3.8F
		0507	0818	4.1E
		1130	1430	3.7F
		1731	2038	3.9E
		2344		
7	Th		0245	3.8F
		0542	0859	4.6E
		1214	1520	4.3F
	●	1830	2129	3.8E
8	F	0032	0328	3.6F
		0617	0941	5.0E
		1259	1609	4.7F
		1928	2221	3.6E
9	Sa	0122	0411	3.3F
		0654	1024	5.1E
		1345	1659	4.8F
		2027	2314	3.3E
10	Su	0214	0457	2.8F
		0731	1109	5.0E
		1433	1751	4.8F
		2127		
11	M		0010	2.9E
		0310	0545	2.3F
		0811	1156	4.7E
		1523	1846	4.6F
		2229		
12	Tu		0110	2.5E
		0414	0638	1.7F
		0855	1248	4.2E
		1616	1945	4.2F
		2333		
13	W		0217	2.2E
		0529	0741	1.2F
		0947	1347	3.6E
	◐	1715	2048	3.8F
14	Th	0040	0330	2.1E
		0655	0856	0.9F
		1054	1456	3.0E
		1819	2156	3.5F
15	F	0142	0442	2.3E
		0815	1019	0.9F
		1221	1611	2.7E
		1925	2300	3.3F

		Slack	Maximum	
		h m	h m	knots
16	Sa	0235	0543	2.5E
		0916	1134	1.2F
		1352	1723	2.5E
		2029	2357	3.2F
17	Su	0320	0633	2.9E
		1002	1235	1.7F
		1510	1825	2.5E
		2125		
18	M		0044	3.0F
		0356	0713	3.2E
		1039	1324	2.2F
		1613	1917	2.5E
		2214		
19	Tu		0124	2.9F
		0426	0748	3.5E
		1111	1405	2.7F
		1707	2003	2.5E
		2258		
20	W		0159	2.7F
		0452	0818	3.7E
		1141	1443	3.0F
		1754	2044	2.5E
		2339		
21	Th		0232	2.5F
		0516	0847	3.8E
		1210	1517	3.4F
	○	1837	2123	2.4E
22	F	0018	0303	2.2F
		0538	0915	3.9E
		1238	1551	3.6F
		1919	2201	2.3E
23	Sa	0057	0334	1.9F
		0601	0943	3.9E
		1307	1625	3.8F
		1959	2239	2.2E
24	Su	0136	0405	1.7F
		0624	1013	3.9E
		1338	1659	3.9F
		2041	2318	2.1E
25	M	0217	0438	1.4F
		0649	1044	3.9E
		1411	1737	3.8F
		2123	2359	2.0E
26	Tu	0259	0513	1.2F
		0717	1120	3.7E
		1448	1817	3.7F
		2208		
27	W		0044	1.8E
		0347	0553	1.0F
		0751	1159	3.5E
		1531	1902	3.6F
		2257		
28	Th		0134	1.7E
		0444	0642	0.8F
		0834	1248	3.3E
		1620	1954	3.4F
		2349		
29	F		0232	1.7E
		0551	0745	0.7F
		0933	1348	2.9E
	◑	1716	2052	3.2F
30	Sa	0042	0334	1.9E
		0701	0901	0.8F
		1057	1459	2.7E
		1819	2153	3.1F

May

		Slack	Maximum	
		h m	h m	knots
1	Su	0131	0435	2.3E
		0802	1020	1.2F
		1237	1615	2.6E
		1925	2253	3.2F
2	M	0216	0528	2.9E
		0854	1131	1.9F
		1410	1727	2.7E
		2029	2347	3.2F
3	Tu	0256	0616	3.6E
		0940	1232	2.7F
		1529	1832	2.9E
		2129		
4	W		0037	3.2F
		0335	0701	4.2E
		1025	1327	3.6F
		1638	1931	3.0E
		2226		
5	Th		0125	3.2F
		0413	0745	4.8E
		1108	1419	4.3F
		1741	2027	3.1E
		2321		
6	F		0212	3.0F
		0450	0829	5.2E
		1153	1509	4.9F
	●	1840	2122	3.1E
7	Sa	0017	0258	2.8F
		0529	0913	5.4E
		1237	1558	5.3F
		1936	2216	3.1E
8	Su	0113	0346	2.4F
		0609	0957	5.4E
		1323	1648	5.4F
		2031	2310	3.0E
9	M	0211	0435	2.1F
		0651	1043	5.1E
		1409	1737	5.3F
		2125		
10	Tu		0006	2.8E
		0312	0527	1.7F
		0735	1131	4.7E
		1456	1828	5.0F
		2218		
11	W		0102	2.7E
		0418	0623	1.3F
		0823	1222	4.1E
		1545	1920	4.5F
		2311		
12	Th		0202	2.6E
		0531	0727	1.0F
		0920	1318	3.4E
		1637	2015	4.0F
13	F	0003	0304	2.6E
		0647	0840	0.8F
		1032	1421	2.7E
	◐	1732	2112	3.5F
14	Sa	0052	0405	2.7E
		0755	0958	1.0F
		1205	1533	2.2E
		1831	2209	3.1F
15	Su	0137	0500	3.0E
		0848	1111	1.3F
		1342	1646	1.8E
		1933	2303	2.8F

		Slack	Maximum	
		h m	h m	knots
16	M	0216	0548	3.3E
		0931	1212	1.9F
		1506	1753	1.7E
		2033	2351	2.5F
17	Tu	0251	0628	3.6E
		1007	1301	2.4F
		1613	1851	1.7E
		2129		
18	W		0034	2.3F
		0321	0704	3.8E
		1039	1344	2.9F
		1709	1941	1.8E
		2221		
19	Th		0113	2.0F
		0348	0736	4.0E
		1108	1421	3.4F
		1756	2027	1.8E
		2310		
20	F		0149	1.8F
		0414	0807	4.1E
		1137	1457	3.8F
		1839	2109	1.9E
		2357		
21	Sa		0224	1.6F
		0439	0837	4.2E
		1207	1531	4.0F
	○	1919	2150	1.9E
22	Su	0042	0259	1.3F
		0504	0908	4.2E
		1237	1606	4.2F
		1958	2229	2.0E
23	M	0126	0334	1.2F
		0532	0941	4.2E
		1310	1641	4.3F
		2036	2308	2.0E
24	Tu	0209	0411	1.0F
		0603	1016	4.1E
		1345	1718	4.3F
		2115	2348	2.0E
25	W	0253	0450	0.9F
		0639	1054	4.0E
		1423	1757	4.3F
		2154		
26	Th		0030	2.0E
		0341	0535	0.9F
		0722	1136	3.8E
		1504	1839	4.1F
		2234		
27	F		0116	2.1E
		0435	0627	0.8F
		0814	1225	3.5E
		1549	1925	3.9F
		2316		
28	Sa		0207	2.2E
		0535	0730	0.9F
		0923	1322	3.0E
		1640	2016	3.6F
		2358		
29	Su		0301	2.5E
		0638	0844	1.0F
		1051	1429	2.6E
	◑	1737	2111	3.4F
30	M	0040	0357	3.0E
		0736	1003	1.5F
		1234	1546	2.2E
		1840	2208	3.1F
31	Tu	0122	0451	3.6E
		0829	1115	2.2F
		1413	1703	2.1E
		1947	2304	2.9F

June

		Slack	Maximum	
		h m	h m	knots
1	W	0203	0542	4.2E
		0918	1219	3.1F
		1538	1815	2.1E
		2054	2359	2.7F
2	Th	0244	0630	4.8E
		1004	1316	4.0F
		1649	1921	2.2E
		2200		
3	F		0052	2.5F
		0325	0717	5.2E
		1050	1409	4.7F
		1751	2021	2.4E
		2304		
4	Sa		0143	2.3F
		0407	0803	5.5E
		1134	1459	5.2F
	●	1846	2117	2.5E
5	Su	0006	0235	2.1F
		0450	0850	5.5E
		1219	1547	5.5F
		1938	2211	2.7E
6	M	0106	0326	1.8F
		0535	0936	5.4E
		1304	1635	5.6F
		2027	2303	2.8E
7	Tu	0206	0418	1.6F
		0621	1023	5.0E
		1348	1721	5.4F
		2113	2354	2.8E
8	W	0306	0511	1.4F
		0710	1110	4.5E
		1432	1807	5.1F
		2157		
9	Th		0045	2.8E
		0408	0607	1.2F
		0802	1158	3.9E
		1516	1852	4.6F
		2239		
10	F		0135	2.9E
		0511	0706	1.0F
		0901	1249	3.2E
		1559	1938	4.1F
		2319		
11	Sa		0227	2.9E
		0614	0812	1.0F
		1012	1345	2.5E
		1645	2025	3.5F
		2358		
12	Su		0319	3.1E
		0714	0923	1.1F
		1140	1448	1.8E
	◐	1734	2114	3.0F
13	M	0036	0409	3.2E
		0806	1034	1.4F
		1319	1559	1.3E
		1830	2204	2.5F
14	Tu	0112	0456	3.5E
		0850	1137	1.9F
		1451	1712	1.1E
		1932	2254	2.1F
15	W	0146	0539	3.7E
		0927	1230	2.5F
		1604	1819	1.1E
		2038	2342	1.8F

		Slack	Maximum	
		h m	h m	knots
16	Th	0218	0619	3.9E
		1002	1316	3.0F
		1702	1917	1.2E
		2142		
17	F		0027	1.5F
		0249	0655	4.1E
		1035	1356	3.5F
		1749	2007	1.4E
		2241		
18	Sa		0110	1.3F
		0320	0731	4.2E
		1107	1434	3.9F
		1830	2052	1.6E
		2335		
19	Su		0150	1.2F
		0351	0806	4.3E
		1139	1510	4.2F
		1909	2133	1.7E
20	M	0023	0230	1.1F
		0424	0841	4.4E
		1213	1546	4.5F
	○	1945	2212	1.9E
21	Tu	0108	0310	1.0F
		0501	0918	4.4E
		1248	1622	4.6F
		2020	2250	2.0E
22	W	0150	0350	1.1F
		0541	0956	4.4E
		1325	1659	4.6F
		2055	2329	2.2E
23	Th	0233	0434	1.1F
		0627	1037	4.3E
		1404	1737	4.6F
		2129		
24	F		0008	2.3E
		0318	0522	1.2F
		0718	1121	4.0E
		1444	1816	4.4F
		2203		
25	Sa		0051	2.6E
		0409	0615	1.2F
		0817	1209	3.6E
		1526	1858	4.2F
		2238		
26	Su		0137	2.8E
		0505	0717	1.3F
		0928	1304	3.0E
		1613	1944	3.8F
		2314		
27	M		0227	3.2E
		0605	0828	1.5F
		1056	1409	2.4E
	◑	1704	2035	3.3F
		2353		
28	Tu		0321	3.6E
		0705	0945	2.0F
		1238	1525	1.8E
		1805	2130	2.9F
29	W	0034	0417	4.0E
		0802	1059	2.6F
		1420	1647	1.6E
		1915	2229	2.5F
30	Th	0117	0512	4.5E
		0855	1207	3.4F
		1547	1806	1.5E
		2032	2329	2.2F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Burrard Inlet (First Narrows), British Columbia, 2016

F–Flood, Dir. 135° True E–Ebb, Dir. 315° True

July

		Slack	Maximum	
		h m	h m	knots
1	F	0203	0605	4.9E
		0945	1306	4.2F
		1656	1916	1.7E
		2147		
2	Sa	0249	0029	1.9F
		1033	0656	5.2E
		1753	1359	4.8F
		2257	2016	2.0E
3	Su	0338	0125	1.8F
		1119	0745	5.3E
		1843	1448	5.2F
			2111	2.3E
4	M	0001	0220	1.7F
		0427	0833	5.3E
		1204	1535	5.4F
	●	1928	2201	2.5E
5	Tu	0059	0313	1.6F
		0517	0920	5.1E
		1247	1619	5.4F
		2009	2248	2.7E
6	W	0153	0404	1.6F
		0607	1006	4.8E
		1329	1700	5.2F
		2048	2332	2.9E
7	Th	0246	0455	1.5F
		0659	1051	4.3E
		1409	1741	4.8F
		2123		
8	F		0015	3.0E
		0338	0546	1.4F
		0752	1135	3.7E
		1448	1819	4.4F
		2157		
9	Sa		0058	3.1E
		0430	0639	1.4F
		0849	1220	3.0E
		1526	1858	3.9F
		2229		
10	Su		0141	3.2E
		0523	0735	1.3F
		0954	1309	2.3E
		1604	1937	3.3F
		2301		
11	M		0225	3.2E
		0616	0838	1.4F
		1112	1406	1.6E
	◐	1646	2019	2.7F
		2334		
12	Tu		0311	3.3E
		0708	0945	1.6F
		1245	1513	1.1E
		1735	2106	2.2F
13	W	0007	0359	3.4E
		0756	1051	2.0F
		1421	1629	0.8E
		1838	2157	1.7F
14	Th	0043	0447	3.5E
		0840	1150	2.5F
		1541	1744	0.8E
		1955	2253	1.4F
15	F	0120	0534	3.7E
		0921	1241	3.0F
		1640	1849	1.0E
		2111	2347	1.2F
16	Sa	0159	0617	3.9E
		0959	1326	3.5F
		1726	1942	1.3E
		2216		
17	Su		0037	1.1F
		0240	0659	4.1E
		1037	1406	3.9F
		1806	2027	1.5E
		2310		
18	M		0123	1.1F
		0322	0740	4.3E
		1114	1444	4.2F
		1842	2107	1.8E
		2356		
19	Tu		0207	1.2F
		0406	0820	4.5E
		1151	1521	4.5F
	○	1916	2145	2.0E
20	W	0038	0251	1.3F
		0452	0859	4.6E
		1229	1558	4.7F
		1948	2222	2.3E
21	Th	0118	0335	1.5F
		0541	0941	4.6E
		1307	1635	4.7F
		2019	2259	2.6E
22	F	0200	0420	1.7F
		0632	1024	4.4E
		1346	1712	4.7F
		2050	2337	2.9E
23	Sa	0245	0509	1.9F
		0728	1109	4.1E
		1426	1750	4.4F
		2122		
24	Su		0018	3.2E
		0335	0603	2.0F
		0830	1158	3.6E
		1508	1831	4.1F
		2155		
25	M		0103	3.5E
		0429	0703	2.1F
		0941	1253	2.9E
		1553	1915	3.6F
		2230		
26	Tu		0152	3.7E
		0528	0811	2.3F
		1105	1358	2.2E
	◑	1644	2004	3.0F
		2308		
27	W		0246	3.9E
		0630	0926	2.5F
		1244	1515	1.6E
		1747	2101	2.4F
		2351		
28	Th		0345	4.2E
		0732	1042	3.0F
		1425	1641	1.3E
		1905	2205	1.9F
29	F	0040	0446	4.4E
		0832	1153	3.6F
		1548	1803	1.4E
		2032	2314	1.6F
30	Sa	0134	0546	4.6E
		0927	1254	4.2F
		1651	1912	1.7E
		2152		
31	Su		0020	1.5F
		0231	0642	4.8E
		1017	1347	4.6F
		1741	2009	2.1E
		2259		

August

		Slack	Maximum	
		h m	h m	knots
1	M		0120	1.6F
		0327	0734	4.8E
		1105	1434	4.9F
		1824	2058	2.4E
		2354		
2	Tu		0214	1.7F
		0423	0823	4.8E
		1149	1517	4.9F
	●	1902	2142	2.7E
3	W	0044	0304	1.8F
		0516	0908	4.6E
		1230	1557	4.8F
		1937	2222	2.9E
4	Th	0129	0351	1.8F
		0607	0951	4.3E
		1309	1634	4.6F
		2009	2300	3.1E
5	F	0213	0437	1.9F
		0658	1033	3.9E
		1346	1709	4.3F
		2038	2336	3.2E
6	Sa	0255	0522	1.9F
		0748	1113	3.4E
		1421	1742	3.9F
		2105		
7	Su		0012	3.3E
		0338	0608	1.9F
		0841	1155	2.8E
		1455	1816	3.4F
		2132		
8	M		0048	3.3E
		0422	0656	1.9F
		0939	1239	2.2E
		1531	1850	2.9F
		2159		
9	Tu		0127	3.3E
		0508	0750	1.9F
		1047	1331	1.6E
		1610	1928	2.3F
		2229		
10	W		0210	3.2E
		0558	0850	1.9F
		1208	1433	1.1E
	◐	1659	2013	1.8F
		2302		
11	Th		0258	3.2E
		0651	0956	2.1F
		1339	1549	0.8E
		1807	2107	1.3F
		2340		
12	F		0352	3.2E
		0743	1102	2.4F
		1459	1709	0.8E
		1931	2211	1.0F
13	Sa	0026	0448	3.3E
		0834	1159	2.9F
		1600	1817	1.1E
		2052	2315	1.0F
14	Su	0119	0541	3.5E
		0921	1249	3.3F
		1646	1910	1.4E
		2154		
15	M		0012	1.1F
		0214	0630	3.8E
		1005	1333	3.7F
		1725	1954	1.7E
		2243		
16	Tu		0103	1.3F
		0309	0716	4.1E
		1046	1413	4.1F
		1759	2032	2.1E
		2324		
17	W		0149	1.6F
		0402	0800	4.4E
		1127	1451	4.4F
		1831	2109	2.5E
18	Th	0004	0235	2.0F
		0455	0844	4.5E
		1207	1528	4.5F
	○	1901	2146	2.9E
19	F	0044	0321	2.3F
		0548	0927	4.5E
		1247	1605	4.5F
		1932	2223	3.3E
20	Sa	0127	0408	2.6F
		0643	1013	4.3E
		1328	1643	4.4F
		2002	2302	3.6E
21	Su	0212	0457	2.9F
		0741	1059	4.0E
		1409	1722	4.1F
		2034	2343	3.9E
22	M	0301	0550	3.0F
		0844	1151	3.4E
		1453	1803	3.6F
		2108		
23	Tu		0028	4.1E
		0353	0648	3.1F
		0954	1247	2.7E
		1542	1848	3.0F
		2144		
24	W		0117	4.1E
		0451	0753	3.1F
		1114	1354	2.0E
	◑	1639	1939	2.4F
		2225		
25	Th		0213	4.1E
		0554	0906	3.1F
		1246	1513	1.5E
		1751	2042	1.8F
		2314		
26	F		0317	4.0E
		0659	1023	3.3F
		1416	1641	1.4E
		1921	2156	1.4F
27	Sa	0012	0425	3.9E
		0805	1134	3.7F
		1530	1800	1.7E
		2051	2313	1.2F
28	Su	0121	0532	4.0E
		0905	1236	4.0F
		1626	1903	2.0E
		2202		
29	M		0022	1.4F
		0230	0632	4.1E
		0959	1328	4.2F
		1711	1954	2.4E
		2257		
30	Tu		0120	1.7F
		0335	0726	4.2E
		1048	1413	4.3F
		1749	2036	2.8E
		2342		
31	W		0211	1.9F
		0432	0813	4.1E
		1131	1452	4.3F
		1822	2114	3.0E

September

		Slack	Maximum	
		h m	h m	knots
1	Th	0022	0256	2.2F
		0525	0856	3.9E
		1211	1528	4.1F
	●	1851	2148	3.2E
2	F	0059	0338	2.4F
		0614	0937	3.7E
		1247	1601	3.8F
		1917	2220	3.4E
3	Sa	0135	0418	2.5F
		0702	1016	3.3E
		1322	1632	3.5F
		1941	2252	3.5E
4	Su	0210	0457	2.6F
		0749	1054	2.9E
		1355	1702	3.1F
		2005	2323	3.5E
5	M	0246	0537	2.6F
		0838	1134	2.5E
		1430	1733	2.7F
		2029	2355	3.5E
6	Tu	0323	0619	2.6F
		0930	1216	2.1E
		1507	1806	2.2F
		2054		
7	W		0030	3.4E
		0403	0705	2.5F
		1028	1305	1.6E
		1550	1843	1.7F
		2121		
8	Th		0110	3.2E
		0449	0758	2.5F
		1136	1404	1.2E
		1644	1927	1.3F
		2154		
9	F		0157	3.0E
		0541	0900	2.4F
		1253	1516	1.0E
	◐	1757	2025	0.9F
		2236		
10	Sa		0255	2.9E
		0639	1007	2.6F
		1407	1634	1.1E
		1924	2136	0.7F
		2334		
11	Su		0359	2.9E
		0739	1111	2.8F
		1507	1741	1.3E
		2039	2248	0.8F
12	M	0046	0503	3.1E
		0836	1206	3.2F
		1553	1833	1.7E
		2133	2351	1.1F
13	Tu	0159	0601	3.4E
		0927	1253	3.5F
		1631	1915	2.2E
		2215		
14	W		0045	1.6F
		0304	0652	3.8E
		1014	1335	3.9F
		1704	1953	2.7E
		2255		
15	Th		0134	2.2F
		0404	0741	4.1E
		1059	1415	4.1F
		1736	2031	3.2E
		2334		
16	F		0220	2.7F
		0501	0827	4.2E
		1142	1453	4.2F
	○	1807	2108	3.7E
17	Sa	0015	0307	3.2F
		0557	0914	4.2E
		1225	1532	4.1F
		1838	2147	4.1E
18	Su	0058	0355	3.7F
		0654	1002	4.0E
		1309	1611	3.9F
		1911	2227	4.5E
19	M	0143	0445	4.0F
		0753	1053	3.6E
		1355	1653	3.5F
		1945	2309	4.6E
20	Tu	0230	0537	4.1F
		0856	1146	3.1E
		1444	1736	3.0F
		2021	2355	4.6E
21	W	0321	0633	4.0F
		1003	1245	2.6E
		1540	1825	2.3F
		2059		
22	Th		0045	4.4E
		0416	0735	3.9F
		1117	1353	2.1E
		1647	1922	1.7F
		2145		
23	F		0143	4.0E
		0518	0844	3.7F
		1236	1512	1.8E
	◑	1812	2032	1.2F
		2241		
24	Sa		0250	3.6E
		0624	0958	3.6F
		1352	1635	1.9E
		1946	2155	1.0F
		2355		
25	Su		0404	3.4E
		0733	1108	3.6F
		1456	1747	2.2E
		2104	2316	1.1F
26	M	0121	0517	3.3E
		0837	1209	3.7F
		1546	1843	2.6E
		2201		
27	Tu		0023	1.5F
		0241	0620	3.3E
		0934	1259	3.8F
		1627	1928	3.0E
		2245		
28	W		0118	2.0F
		0348	0715	3.3E
		1024	1342	3.7F
		1701	2006	3.3E
		2322		
29	Th		0204	2.4F
		0445	0802	3.3E
		1107	1419	3.5F
		1729	2039	3.5E
		2356		
30	F		0245	2.7F
		0536	0844	3.1E
		1147	1453	3.3F
	●	1755	2110	3.7E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Burrard Inlet (First Narrows), British Columbia, 2016

F–Flood, Dir. 135° True E–Ebb, Dir. 315° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa	0028	0323	3.0F
	0623	0923	2.9E
	1224	1523	3.0F
	1817	2139	3.8E
2 Su	0058	0359	3.2F
	0708	1001	2.7E
	1259	1553	2.6F
	1839	2207	3.8E
3 M	0129	0435	3.3F
	0752	1039	2.5E
	1335	1623	2.3F
	1901	2236	3.8E
4 Tu	0200	0511	3.4F
	0836	1118	2.2E
	1413	1653	1.9F
	1924	2306	3.7E
5 W	0233	0548	3.3F
	0923	1200	1.9E
	1454	1726	1.6F
	1948	2339	3.6E
6 Th	0310	0630	3.2F
	1014	1247	1.6E
	1542	1804	1.2F
	2015		
7 F		0017	3.3E
	0351	0717	3.1F
	1110	1342	1.4E
	1641	1850	0.8F
	2048		
8 Sa ◐		0103	3.0E
	0440	0812	2.9F
	1212	1447	1.3E
	1757	1949	0.6F
	2133		
9 Su		0201	2.8E
	0538	0915	2.9F
	1314	1557	1.4E
	1918	2105	0.5F
	2245		
10 M		0310	2.7E
	0641	1019	2.9F
	1409	1700	1.7E
	2022	2223	0.8F
11 Tu	0018	0423	2.7E
	0745	1117	3.1F
	1454	1751	2.2E
	2109	2331	1.3F
12 W	0147	0529	3.0E
	0843	1207	3.3F
	1531	1835	2.8E
	2149		
13 Th		0027	2.0F
	0302	0627	3.2E
	0936	1252	3.5F
	1606	1914	3.4E
	2229		
14 F		0118	2.8F
	0408	0721	3.5E
	1026	1335	3.6F
	1639	1953	4.0E
	2309		
15 Sa ○		0207	3.5F
	0508	0812	3.6E
	1115	1416	3.6F
	1712	2033	4.6E
	2350		
16 Su		0255	4.1F
	0607	0903	3.6E
	1203	1458	3.5F
	1746	2113	5.0E
17 M	0033	0344	4.6F
	0705	0954	3.4E
	1252	1541	3.2F
	1821	2155	5.2E
18 Tu	0118	0433	4.9F
	0803	1047	3.2E
	1344	1626	2.8F
	1858	2240	5.2E
19 W	0204	0525	5.0F
	0903	1143	2.9E
	1441	1714	2.3F
	1938	2326	4.9E
20 Th	0254	0619	4.8F
	1004	1243	2.6E
	1545	1807	1.7F
	2021		
21 F		0017	4.5E
	0346	0716	4.5F
	1109	1350	2.3E
	1701	1909	1.2F
	2111		
22 Sa ◑		0115	3.9E
	0443	0819	4.1F
	1214	1502	2.2E
	1829	2024	0.9F
	2215		
23 Su		0222	3.3E
	0546	0926	3.8F
	1316	1615	2.4E
	1953	2149	0.8F
	2344		
24 M		0338	2.8E
	0653	1032	3.6F
	1411	1720	2.7E
	2058	2310	1.2F
25 Tu	0122	0454	2.6E
	0758	1130	3.4F
	1456	1812	3.1E
	2145		
26 W		0015	1.7F
	0249	0601	2.5E
	0858	1221	3.2F
	1533	1854	3.5E
	2224		
27 Th		0108	2.3F
	0358	0658	2.5E
	0951	1303	3.0F
	1605	1930	3.7E
	2258		
28 F		0152	2.8F
	0456	0747	2.4E
	1037	1340	2.8F
	1631	2002	4.0E
	2328		
29 Sa		0230	3.2F
	0546	0830	2.4E
	1120	1414	2.5F
	1655	2031	4.1E
	2357		
30 Su ●		0306	3.5F
	0631	0911	2.3E
	1200	1445	2.2F
	1717	2059	4.2E
31 M	0026	0340	3.8F
	0713	0950	2.2E
	1240	1516	1.9F
	1739	2127	4.2E

November

	Slack	Maximum	
	h m	h m	knots
1 Tu	0055	0414	3.9F
	0754	1028	2.1E
	1321	1547	1.6F
	1801	2156	4.1E
2 W	0124	0448	4.0F
	0835	1108	2.0E
	1403	1619	1.3F
	1825	2227	4.0E
3 Th	0156	0524	4.0F
	0916	1148	1.8E
	1448	1654	1.1F
	1851	2301	3.8E
4 F	0232	0603	3.9F
	0959	1233	1.7E
	1538	1734	0.8F
	1921	2339	3.6E
5 Sa	0311	0646	3.7F
	1046	1322	1.6E
	1637	1821	0.6F
	1959		
6 Su		0024	3.2E
	0356	0734	3.5F
	1135	1418	1.6E
	1746	1921	0.5F
	2051		
7 M ◐		0119	2.9E
	0448	0828	3.3F
	1225	1518	1.8E
	1857	2036	0.5F
	2212		
8 Tu		0226	2.6E
	0547	0927	3.2F
	1311	1616	2.2E
	1954	2156	0.9F
	2357		
9 W		0342	2.4E
	0651	1025	3.1F
	1353	1708	2.8E
	2041	2308	1.5F
10 Th	0138	0456	2.4E
	0754	1119	3.1F
	1432	1754	3.4E
	2123		
11 F		0010	2.3F
	0302	0603	2.5E
	0855	1209	3.2F
	1509	1838	4.1E
	2205		
12 Sa		0104	3.3F
	0414	0703	2.7E
	0953	1256	3.1F
	1545	1920	4.8E
	2247		
13 Su		0155	4.1F
	0517	0759	2.8E
	1048	1342	3.0F
	1622	2002	5.3E
	2329		
14 M ○		0245	4.6F
	0616	0855	2.9E
	1144	1428	2.8F
	1659	2046	5.6E
15 Tu	0013	0333	5.3F
	0713	0949	2.9E
	1240	1516	2.5F
	1739	2130	5.7E
16 W	0058	0422	5.5F
	0808	1043	2.9E
	1338	1605	2.2F
	1821	2216	5.5E
17 Th	0144	0512	5.5F
	0902	1139	2.8E
	1440	1657	1.8F
	1904	2304	5.1E
18 F	0231	0603	5.3F
	0956	1236	2.7E
	1547	1753	1.4F
	1952	2355	4.5E
19 Sa	0320	0655	4.9F
	1049	1336	2.6E
	1701	1856	1.0F
	2047		
20 Su		0050	3.7E
	0411	0750	4.4F
	1141	1439	2.7E
	1820	2009	0.8F
	2157		
21 M ◑		0152	3.0E
	0506	0847	3.9F
	1231	1542	2.8E
	1933	2130	0.9F
	2329		
22 Tu		0304	2.3E
	0604	0946	3.4F
	1318	1640	3.1E
	2032	2249	1.3F
23 W	0114	0420	1.9E
	0707	1041	3.0F
	1359	1731	3.4E
	2117	2355	1.8F
24 Th	0247	0532	1.7E
	0809	1132	2.7F
	1434	1813	3.7E
	2155		
25 F		0049	2.4F
	0402	0635	1.6E
	0908	1217	2.4F
	1505	1851	4.0E
	2228		
26 Sa		0133	3.0F
	0501	0728	1.7E
	1002	1257	2.1F
	1533	1924	4.2E
	2259		
27 Su		0212	3.5F
	0550	0816	1.7E
	1053	1334	1.8F
	1559	1955	4.3E
	2328		
28 M		0248	3.8F
	0633	0858	1.8E
	1141	1409	1.6F
	1623	2025	4.4E
	2357		
29 Tu ●		0322	4.1F
	0713	0939	1.8E
	1226	1444	1.3F
	1648	2056	4.4E
30 W	0027	0355	4.3F
	0751	1018	1.9E
	1311	1518	1.2F
	1715	2127	4.3E

December

	Slack	Maximum	
	h m	h m	knots
1 Th	0058	0429	4.4F
	0828	1056	1.9E
	1354	1554	1.0F
	1744	2200	4.2E
2 F	0131	0504	4.4F
	0904	1135	1.9E
	1438	1631	0.9F
	1816	2236	4.1E
3 Sa	0206	0541	4.3F
	0941	1215	1.9E
	1524	1713	0.8F
	1854	2314	3.9E
4 Su	0244	0620	4.2F
	1019	1257	2.0E
	1615	1801	0.7F
	1941	2358	3.5E
5 M	0325	0702	3.9F
	1057	1345	2.1E
	1713	1859	0.7F
	2041		
6 Tu		0050	3.1E
	0411	0749	3.6F
	1136	1436	2.3E
	1816	2009	0.8F
	2202		
7 W ◐		0152	2.6E
	0503	0841	3.4F
	1216	1530	2.7E
	1915	2128	1.1F
	2346		
8 Th		0306	2.1E
	0602	0936	3.1F
	1256	1624	3.3E
	2008	2245	1.8F
9 F	0134	0426	1.9E
	0707	1032	2.9F
	1336	1716	3.9E
	2056	2353	2.7F
10 Sa	0307	0542	1.8E
	0816	1128	2.7F
	1417	1805	4.6E
	2142		
11 Su		0051	3.6F
	0423	0650	2.0E
	0924	1222	2.5F
	1458	1852	5.2E
	2227		
12 M		0145	4.4F
	0526	0752	2.2E
	1029	1314	2.4F
	1541	1939	5.6E
	2312		
13 Tu ○		0235	5.1F
	0623	0850	2.4E
	1132	1406	2.2F
	1625	2025	5.8E
	2357		
14 W		0324	5.6F
	0715	0944	2.6E
	1233	1458	2.0F
	1710	2112	5.7E
15 Th	0042	0411	5.7F
	0804	1036	2.7E
	1333	1550	1.8F
	1757	2159	5.5E
16 F	0127	0458	5.7F
	0850	1128	2.8E
	1433	1643	1.6F
	1846	2247	5.0E
17 Sa	0212	0544	5.4F
	0935	1219	2.9E
	1534	1739	1.4F
	1938	2335	4.4E
18 Su	0256	0630	5.0F
	1018	1310	2.9E
	1638	1838	1.2F
	2036		
19 M		0026	3.6E
	0340	0717	4.4F
	1059	1403	3.0E
	1744	1943	1.1F
	2143		
20 Tu ◑		0121	2.8E
	0426	0804	3.8F
	1140	1456	3.1E
	1849	2055	1.1F
	2309		
21 W		0223	2.0E
	0514	0853	3.2F
	1219	1549	3.3E
	1947	2211	1.4F
22 Th	0051	0336	1.4E
	0608	0944	2.6F
	1256	1640	3.5E
	2036	2321	1.8F
23 F	0233	0453	1.1E
	0711	1037	2.2F
	1331	1726	3.7E
	2117		
24 Sa		0019	2.4F
	0355	0605	1.0E
	0820	1127	1.8F
	1405	1808	3.9E
	2153		
25 Su		0107	3.0F
	0456	0707	1.2E
	0928	1215	1.5F
	1438	1846	4.1E
	2227		
26 M		0148	3.5F
	0543	0758	1.3E
	1029	1259	1.3F
	1510	1922	4.2E
	2259		
27 Tu		0226	3.9F
	0624	0843	1.5E
	1123	1340	1.2F
	1542	1957	4.3E
	2332		
28 W ●		0301	4.2F
	0701	0923	1.7E
	1211	1419	1.1F
	1615	2031	4.4E
29 Th	0004	0336	4.4F
	0735	1001	1.8E
	1254	1457	1.1F
	1649	2106	4.4E
30 F	0037	0410	4.6F
	0809	1037	2.0E
	1334	1536	1.1F
	1727	2142	4.4E
31 Sa	0112	0444	4.6F
	0841	1112	2.1E
	1413	1615	1.1F
	1808	2219	4.3E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Seymour Narrows, British Columbia, 2016

F–Flood, Dir. 180° True E–Ebb, Dir. 000° True

January

	Slack	Maximum	
	h m	h m	knots
1 F ◑		0057	6.1E
	0345	0655	7.4F
	1005	1332	8.7E
	1658	1953	6.4F
	2308		
2 Sa		0159	5.2E
	0447	0751	6.1F
	1051	1426	8.2E
	1750	2052	6.6F
3 Su	0017	0308	4.9E
	0557	0849	5.2F
	1139	1521	7.9E
	1840	2148	7.3F
4 M	0121	0415	5.2E
	0707	0947	4.7F
	1229	1614	8.0E
	1927	2240	8.2F
5 Tu	0217	0515	6.0E
	0810	1042	4.7F
	1319	1704	8.4E
	2010	2326	9.4F
6 W	0305	0606	7.0E
	0904	1132	5.1F
	1407	1750	9.0E
	2051		
7 Th		0008	10.6F
	0347	0650	8.2E
	0951	1217	5.6F
	1453	1833	9.7E
	2131		
8 F		0048	11.8F
	0426	0731	9.3E
	1034	1301	6.3F
	1538	1914	10.4E
	2211		
9 Sa ●		0128	12.8F
	0504	0810	10.3E
	1115	1343	7.0F
	1623	1955	11.0E
	2251		
10 Su		0207	13.5F
	0541	0848	11.1E
	1154	1425	7.7F
	1708	2036	11.4E
	2332		
11 M		0248	13.9F
	0619	0927	11.7E
	1235	1509	8.3F
	1755	2119	11.5E
12 Tu	0015	0329	13.8F
	0657	1007	12.0E
	1316	1555	8.7F
	1845	2204	11.2E
13 W	0100	0413	13.2F
	0737	1049	12.1E
	1400	1643	9.0F
	1939	2253	10.5E
14 Th	0148	0459	12.2F
	0819	1134	11.9E
	1448	1736	9.1F
	2038	2346	9.6E
15 F	0241	0550	10.9F
	0903	1222	11.5E
	1539	1834	9.2F
	2143		

	Slack	Maximum	
	h m	h m	knots
16 Sa ◐		0045	8.7E
	0341	0646	9.4F
	0952	1316	11.1E
	1634	1937	9.5F
	2254		
17 Su		0152	7.9E
	0450	0748	8.1F
	1045	1415	10.7E
	1733	2043	10.0F
18 M	0008	0306	7.7E
	0605	0855	7.2F
	1143	1518	10.6E
	1833	2147	10.9F
19 Tu	0119	0419	8.2E
	0720	1001	6.9F
	1244	1621	10.9E
	1931	2248	11.9F
20 W	0223	0525	9.2E
	0827	1104	7.1F
	1346	1721	11.4E
	2025	2344	13.0F
21 Th	0319	0622	10.4E
	0926	1201	7.5F
	1445	1816	11.9E
	2117		
22 F		0035	13.8F
	0409	0712	11.4E
	1018	1254	8.1F
	1540	1907	12.3E
	2205		
23 Sa ○		0122	14.3F
	0454	0758	12.2E
	1105	1343	8.7F
	1632	1954	12.4E
	2250		
24 Su		0206	14.3F
	0535	0841	12.6E
	1148	1428	9.0F
	1720	2039	12.2E
	2334		
25 M		0248	13.8F
	0615	0922	12.6E
	1230	1512	9.0F
	1807	2122	11.5E
26 Tu	0016	0328	12.9F
	0652	1002	12.2E
	1311	1555	8.8F
	1853	2204	10.5E
27 W	0057	0407	11.7F
	0729	1041	11.5E
	1351	1637	8.4F
	1940	2247	9.3E
28 Th	0139	0447	10.3F
	0804	1120	10.6E
	1433	1722	7.8F
	2028	2331	8.0E
29 F	0222	0528	8.7F
	0840	1200	9.6E
	1516	1809	7.2F
	2121		
30 Sa		0019	6.6E
	0310	0612	7.1F
	0917	1243	8.6E
	1603	1901	6.7F
	2220		
31 Su ◑		0114	5.5E
	0405	0702	5.6F
	0958	1332	7.7E
	1653	1958	6.6F
	2326		

February

	Slack	Maximum	
	h m	h m	knots
1 M		0219	4.7E
	0513	0759	4.5F
	1045	1427	7.1E
	1747	2059	6.8F
2 Tu	0035	0331	4.7E
	0629	0904	3.9F
	1139	1527	7.0E
	1842	2158	7.6F
3 W	0139	0440	5.4E
	0740	1007	4.0F
	1238	1627	7.5E
	1934	2252	8.7F
4 Th	0233	0537	6.6E
	0839	1104	4.6F
	1337	1721	8.3E
	2023	2341	10.1F
5 F	0319	0624	8.0E
	0927	1155	5.5F
	1432	1810	9.4E
	2108		
6 Sa		0025	11.4F
	0359	0706	9.4E
	1009	1241	6.7F
	1523	1855	10.5E
	2152		
7 Su		0107	12.6F
	0438	0746	10.7E
	1049	1324	8.0F
	1611	1939	11.5E
	2235		
8 M ●		0148	13.5F
	0515	0824	11.8E
	1127	1407	9.2F
	1658	2021	12.2E
	2318		
9 Tu		0228	13.9F
	0552	0902	12.6E
	1206	1450	10.1F
	1746	2104	12.5E
10 W	0002	0309	13.8F
	0630	0941	13.0E
	1246	1534	10.8F
	1834	2149	12.3E
11 Th	0046	0352	13.2F
	0708	1021	13.0E
	1328	1620	11.1F
	1925	2236	11.6E
12 F	0134	0437	12.1F
	0748	1104	12.7E
	1413	1710	11.0F
	2021	2326	10.6E
13 Sa	0225	0525	10.6F
	0831	1150	12.0E
	1502	1804	10.7F
	2121		
14 Su ◐		0023	9.4E
	0323	0619	8.9F
	0918	1242	11.1E
	1557	1905	10.3F
	2228		
15 M		0127	8.3E
	0430	0721	7.4F
	1012	1342	10.2E
	1657	2012	10.2F
	2341		

	Slack	Maximum	
	h m	h m	knots
16 Tu		0240	7.7E
	0546	0830	6.4F
	1115	1449	9.7E
	1802	2121	10.4F
17 W	0054	0356	8.0E
	0703	0942	6.1F
	1224	1559	9.7E
	1907	2226	11.0F
18 Th	0159	0505	8.9E
	0812	1049	6.6F
	1333	1705	10.2E
	2007	2325	11.8F
19 F	0257	0603	10.1E
	0909	1149	7.4F
	1437	1803	10.9E
	2102		
20 Sa		0018	12.5F
	0346	0653	11.2E
	0958	1241	8.4F
	1533	1854	11.6E
	2151		
21 Su		0104	12.9F
	0430	0737	12.0E
	1042	1327	9.3F
	1624	1940	12.0E
	2236		
22 M ○		0147	13.0F
	0510	0817	12.5E
	1122	1409	9.8F
	1710	2023	12.0E
	2319		
23 Tu		0226	12.7F
	0546	0855	12.5E
	1159	1449	10.1F
	1753	2104	11.6E
	2359		
24 W		0303	11.9F
	0621	0931	12.1E
	1236	1527	10.0F
	1834	2143	10.8E
25 Th	0038	0339	10.9F
	0654	1007	11.4E
	1312	1605	9.6F
	1915	2222	9.8E
26 F	0117	0415	9.6F
	0726	1042	10.5E
	1348	1643	9.0F
	1957	2302	8.6E
27 Sa	0158	0452	8.2F
	0758	1118	9.4E
	1426	1724	8.3F
	2043	2345	7.3E
28 Su	0242	0532	6.7F
	0832	1156	8.3E
	1507	1811	7.6F
	2134		
29 M		0034	6.1E
	0334	0620	5.3F
	0910	1241	7.3E
	1555	1906	7.0F
	2235		

March

	Slack	Maximum	
	h m	h m	knots
1 Tu ◑		0134	5.2E
	0438	0717	4.1F
	0958	1336	6.6E
	1652	2009	6.9F
	2344		
2 W		0247	5.0E
	0556	0826	3.6F
	1059	1442	6.3E
	1755	2115	7.3F
3 Th	0052	0401	5.6E
	0710	0937	3.8F
	1209	1553	6.7E
	1857	2217	8.3F
4 F	0152	0503	6.8E
	0810	1040	4.8F
	1318	1656	7.8E
	1955	2311	9.6F
5 Sa	0242	0554	8.3E
	0858	1133	6.2F
	1419	1750	9.2E
	2046	2359	11.0F
6 Su	0326	0637	9.9E
	0940	1221	7.9F
	1513	1838	10.6E
	2134		
7 M		0043	12.2F
	0406	0717	11.3E
	1019	1304	9.6F
	1602	1922	11.9E
	2220		
8 Tu ●		0125	13.0F
	0444	0756	12.5E
	1057	1347	11.1F
	1649	2006	12.8E
	2304		
9 W		0206	13.4F
	0522	0834	13.3E
	1135	1429	12.2F
	1735	2049	13.2E
	2348		
10 Th		0248	13.2F
	0559	0913	13.7E
	1215	1512	12.9F
	1822	2133	13.1E
11 F	0033	0330	12.5F
	0537	0953	13.5E
	1256	1556	13.0F
	1911	2219	12.4E
12 Sa	0121	0414	11.3F
	0717	1035	12.9E
	1340	1644	12.6F
	2004	2309	11.3E
13 Su	0212	0502	9.8F
	0801	1121	11.9E
	1428	1737	11.9F
	2101		
14 M		0003	10.0E
	0309	0556	8.2F
	0850	1213	10.7E
	1522	1836	10.9F
	2204		
15 Tu ◐		0106	8.8E
	0415	0659	6.7F
	0947	1313	9.4E
	1623	1942	10.1F
	2313		

	Slack	Maximum	
	h m	h m	knots
16 W		0217	8.1E
	0531	0811	5.8F
	1056	1424	8.6E
	1732	2053	9.7F
17 Th	0024	0333	8.1E
	0647	0927	5.8F
	1212	1540	8.5E
	1843	2202	9.9F
18 F	0130	0441	8.9E
	0752	1035	6.6F
	1327	1649	9.0E
	1948	2303	10.4F
19 Sa	0227	0538	10.0E
	0847	1134	7.8F
	1431	1748	9.9E
	2045	2356	11.0F
20 Su	0316	0627	11.0E
	0932	1223	9.0F
	1526	1839	10.8E
	2135		
21 M		0042	11.3F
	0358	0710	11.7E
	1013	1307	10.0F
	1613	1924	11.4E
	2220		
22 Tu		0123	11.4F
	0437	0748	12.1E
	1050	1346	10.7F
	1656	2005	11.5E
	2302		
23 W ○		0200	11.1F
	0512	0824	12.1E
	1125	1422	11.0F
	1735	2044	11.4E
	2341		
24 Th		0236	10.5F
	0544	0858	11.7E
	1158	1457	11.0F
	1813	2121	10.8E
25 F	0019	0310	9.6F
	0615	0931	11.1E
	1231	1532	10.7F
	1851	2158	10.0E
26 Sa	0057	0344	8.6F
	0645	1004	10.2E
	1305	1607	10.2F
	1929	2235	9.1E
27 Su	0137	0420	7.4F
	0716	1038	9.3E
	1340	1646	9.5F
	2011	2316	8.0E
28 M	0220	0459	6.2F
	0750	1115	8.2E
	1419	1729	8.7F
	2058		
29 Tu		0003	7.0E
	0312	0547	5.0F
	0830	1159	7.2E
	1505	1822	8.0F
	2154		
30 W		0069	6.2E
	0415	0646	4.1F
	0923	1254	6.4E
	1602	1924	7.5F
	2258		
31 Th ◑		0208	5.9E
	0528	0757	3.7F
	1031	1404	6.0E
	1709	2033	7.5F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Seymour Narrows, British Columbia, 2016

F–Flood, Dir. 180° True E–Ebb, Dir. 000° True

April

	Slack	Maximum	
	h m	h m	knots
1 F	0004	0320	6.4E
	0638	0910	4.3F
	1150	1520	6.4E
	1820	2140	8.2F
2 Sa	0106	0424	7.5E
	0737	1015	5.6F
	1304	1629	7.5E
	1926	2239	9.2F
3 Su	0159	0517	9.0E
	0825	1110	7.4F
	1407	1727	9.0E
	2023	2330	10.3F
4 M	0246	0603	10.5E
	0907	1158	9.4F
	1501	1818	10.6E
	2115		
5 Tu		0017	11.3F
	0329	0645	11.9E
	0947	1242	11.3F
	1551	1905	12.0E
	2203		
6 W		0101	12.0F
	0409	0726	13.1E
	1026	1325	12.9F
	1638	1950	13.0E
	2249		
7 Th ●		0143	12.3F
	0448	0805	13.8E
	1105	1408	14.0F
	1724	2034	13.5E
	2335		
8 F		0226	12.0F
	0527	0845	14.0E
	1145	1451	14.6F
	1811	2119	13.4E
9 Sa	0021	0309	11.3F
	0607	0926	13.7E
	1227	1535	14.5F
	1858	2205	12.8E
10 Su	0110	0354	10.2F
	0649	1009	12.8E
	1310	1622	13.8F
	1948	2254	11.7E
11 M	0201	0443	8.8F
	0735	1056	11.6E
	1358	1713	12.7F
	2042	2347	10.5E
12 Tu	0258	0538	7.4F
	0827	1148	10.1E
	1451	1810	11.3F
	2140		
13 W ◐		0047	9.4E
	0404	0642	6.2F
	0929	1250	8.6E
	1552	1914	10.0F
	2244		
14 Th		0154	8.7E
	0515	0755	5.7F
	1043	1401	7.6E
	1702	2024	9.2F
	2349		
15 F		0305	8.6E
	0626	0910	6.0F
	1203	1518	7.4E
	1816	2133	8.9F

	Slack	Maximum	
	h m	h m	knots
16 Sa	0052	0411	9.1E
	0727	1017	7.0F
	1318	1629	7.9E
	1924	2234	9.0F
17 Su	0148	0507	9.9E
	0818	1113	8.3F
	1421	1729	8.8E
	2024	2327	9.3F
18 M	0237	0556	10.7E
	0902	1201	9.5F
	1513	1820	9.7E
	2116		
19 Tu		0013	9.5F
	0320	0638	11.2E
	0941	1242	10.5F
	1559	1904	10.4E
	2201		
20 W		0054	9.5F
	0358	0716	11.5E
	1016	1320	11.2F
	1639	1945	10.7E
	2243		
21 Th ○		0131	9.3F
	0432	0751	11.5E
	1050	1354	11.6F
	1717	2023	10.8E
	2322		
22 F		0206	8.8F
	0504	0825	11.2E
	1122	1428	11.8F
	1753	2059	10.6E
23 Sa	0000	0241	8.3F
	0535	0857	10.7E
	1154	1502	11.7F
	1829	2136	10.1E
24 Su	0039	0315	7.5F
	0606	0930	10.0E
	1227	1537	11.3F
	1906	2213	9.5E
25 M	0119	0352	6.7F
	0639	1004	9.3E
	1302	1615	10.8F
	1946	2254	8.8E
26 Tu	0204	0434	5.8F
	0716	1042	8.4E
	1341	1658	10.0F
	2031	2340	8.1E
27 W	0255	0522	5.0F
	0801	1128	7.5E
	1427	1748	9.2F
	2122		
28 Th		0033	7.6E
	0354	0621	4.4F
	0859	1223	6.7E
	1523	1848	8.5F
	2219		
29 F ◑		0134	7.4E
	0459	0731	4.4F
	1011	1332	6.2E
	1630	1954	8.2F
	2319		
30 Sa		0239	7.7E
	0603	0842	5.2F
	1132	1448	6.4E
	1744	2101	8.3F

May

	Slack	Maximum	
	h m	h m	knots
1 Su	0018	0342	8.6E
	0659	0947	6.7F
	1247	1600	7.4E
	1855	2203	8.8F
2 M	0113	0438	9.8E
	0748	1043	8.6F
	1351	1703	8.8E
	1958	2258	9.6F
3 Tu	0203	0527	11.1E
	0833	1133	10.7F
	1447	1757	10.3E
	2054	2348	10.2F
4 W	0249	0613	12.3E
	0916	1220	12.6F
	1538	1847	11.7E
	2146		
5 Th		0035	10.7F
	0333	0656	13.3E
	0957	1304	14.2F
	1626	1934	12.7E
	2235		
6 F ●		0120	10.8F
	0415	0738	13.8E
	1038	1348	15.2F
	1713	2020	13.2E
	2323		
7 Sa		0205	10.6F
	0458	0820	13.9E
	1120	1432	15.5F
	1759	2105	13.3E
8 Su	0011	0250	10.0F
	0541	0903	13.5E
	1202	1516	15.3F
	1846	2152	12.8E
9 M	0059	0337	9.1F
	0626	0948	12.5E
	1247	1603	14.4F
	1934	2240	12.1E
10 Tu	0151	0427	8.1F
	0715	1036	11.2E
	1334	1652	13.1F
	2024	2331	11.1E
11 W	0247	0523	7.1F
	0810	1129	9.7E
	1425	1746	11.6F
	2117		
12 Th		0027	10.2E
	0348	0626	6.3F
	0915	1228	8.2E
	1524	1846	10.0F
	2212		
13 F ◐		0127	9.4E
	0453	0735	6.0F
	1029	1337	7.0E
	1630	1951	8.8F
	2310		
14 Sa		0231	9.1E
	0556	0846	6.3F
	1147	1451	6.6E
	1743	2056	8.0F
15 Su	0008	0334	9.2E
	0654	0950	7.2F
	1301	1602	6.8E
	1854	2158	7.6F

	Slack	Maximum	
	h m	h m	knots
16 M	0102	0430	9.6E
	0744	1045	8.3F
	1403	1704	7.5E
	1957	2252	7.5F
17 Tu	0152	0519	10.1E
	0827	1133	9.4F
	1455	1756	8.3E
	2051	2340	7.6F
18 W	0236	0603	10.4E
	0906	1214	10.4F
	1540	1842	9.1E
	2139		
19 Th		0022	7.5F
	0315	0642	10.7E
	0942	1252	11.2F
	1621	1923	9.6E
	2222		
20 F		0101	7.5F
	0351	0718	10.7E
	1016	1327	11.8F
	1658	2002	10.0E
	2303		
21 Sa ○		0137	7.3F
	0425	0753	10.6E
	1049	1401	12.2F
	1734	2039	10.1E
	2342		
22 Su		0214	7.1F
	0458	0826	10.4E
	1122	1436	12.3F
	1809	2116	10.1E
23 M	0022	0250	6.7F
	0532	0901	10.1E
	1157	1512	12.2F
	1846	2154	9.9E
24 Tu	0103	0330	6.4F
	0610	0938	9.6E
	1234	1551	11.9F
	1925	2234	9.7E
25 W	0147	0413	6.0F
	0652	1019	8.9E
	1315	1634	11.3F
	2008	2318	9.4E
26 Th	0235	0502	5.6F
	0742	1105	8.2E
	1401	1722	10.6F
	2054		
27 F		0007	9.1E
	0328	0559	5.5F
	0842	1159	7.4E
	1455	1817	9.7F
	2144		
28 Sa		0101	8.9E
	0425	0703	5.7F
	0953	1304	6.9E
	1558	1919	9.0F
	2237		
29 Su ◑		0159	9.1E
	0524	0811	6.5F
	1110	1416	6.8E
	1710	2023	8.5F
	2333		
30 M		0259	9.6E
	0620	0915	7.9F
	1224	1529	7.3E
	1823	2126	8.4F
31 Tu	0028	0357	10.4E
	0712	1014	9.7F
	1332	1636	8.4E
	1932	2225	8.6F

June

	Slack	Maximum	
	h m	h m	knots
1 W	0121	0451	11.4E
	0800	1108	11.5F
	1431	1736	9.8E
	2033	2320	8.9F
2 Th	0211	0542	12.3E
	0847	1157	13.3F
	1525	1829	11.0E
	2129		
3 F		0011	9.2F
	0259	0629	13.1E
	0931	1245	14.6F
	1615	1919	12.1E
	2222		
4 Sa ●		0059	9.4F
	0347	0715	13.5E
	1015	1330	15.5F
	1702	2007	12.8E
	2311		
5 Su		0147	9.3F
	0434	0800	13.6E
	1059	1415	15.8F
	1748	2053	13.0E
	2359		
6 M		0235	9.1F
	0521	0846	13.1E
	1143	1500	15.5F
	1833	2139	12.9E
7 Tu	0049	0323	8.6F
	0610	0932	12.3E
	1228	1546	14.6F
	1918	2225	12.4E
8 W	0138	0413	8.0F
	0701	1020	11.1E
	1315	1633	13.3F
	2004	2313	11.7E
9 Th	0230	0507	7.4F
	0757	1110	9.8E
	1404	1723	11.7F
	2051		
10 F		0003	10.9E
	0324	0604	6.8F
	0858	1206	8.1E
	1457	1816	10.0F
	2139		
11 Sa		0056	10.0E
	0421	0707	6.5F
	1007	1307	6.9E
	1557	1914	8.4F
	2229		
12 Su ◐		0152	9.4E
	0518	0811	6.6F
	1120	1415	6.0E
	1705	2014	7.2F
	2320		
13 M		0250	9.0E
	0613	0914	7.1F
	1232	1526	5.8E
	1816	2115	6.4F
14 Tu	0012	0347	8.9E
	0704	1010	7.9F
	1337	1632	6.2E
	1923	2211	6.0F
15 W	0102	0439	9.1E
	0750	1100	8.9F
	1432	1729	6.9E
	2023	2303	5.8F

	Slack	Maximum	
	h m	h m	knots
16 Th	0149	0526	9.3E
	0831	1144	9.8F
	1519	1818	7.7E
	2115	2349	5.9F
17 F	0232	0608	9.6E
	0909	1224	10.7F
	1600	1901	8.5E
	2202		
18 Sa		0031	6.0F
	0312	0647	9.9E
	0946	1301	11.5F
	1638	1941	9.2E
	2244		
19 Su		0111	6.2F
	0350	0725	10.2E
	1021	1337	12.2F
	1714	2019	9.8E
	2324		
20 M ○		0150	6.4F
	0429	0801	10.3E
	1057	1414	12.7F
	1750	2056	10.2E
21 Tu	0003	0229	6.6F
	0508	0839	10.4E
	1134	1451	12.9F
	1826	2134	10.5E
22 W	0043	0310	6.8F
	0550	0918	10.2E
	1213	1531	12.8F
	1904	2213	10.7E
23 Th	0125	0354	6.9F
	0636	1001	9.9E
	1256	1613	12.4F
	1944	2255	10.7E
24 F	0209	0442	7.0F
	0728	1047	9.3E
	1342	1659	11.7F
	2026	2340	10.6E
25 Sa	0257	0535	7.1F
	0826	1139	8.6E
	1434	1750	10.7F
	2111		
26 Su		0028	10.4E
	0348	0634	7.4F
	0932	1238	7.9E
	1533	1846	9.6F
	2159		
27 M ◑		0121	10.3E
	0443	0737	8.0F
	1044	1345	7.4E
	1640	1947	8.6F
	2251		
28 Tu		0219	10.3E
	0539	0842	9.0F
	1158	1458	7.4E
	1753	2051	7.9F
	2346		
29 W		0319	10.6E
	0635	0944	10.3F
	1309	1609	8.0E
	1907	2154	7.6F
30 Th	0042	0418	11.2E
	0729	1042	11.7F
	1413	1715	9.1E
	2014	2255	7.7F

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Seymour Narrows, British Columbia, 2016

F–Flood, Dir. 180° True E–Ebb, Dir. 000° True

July

	Slack	Maximum	
	h m	h m	knots
1 F	0139	0514	11.8E
	0821	1137	13.2F
	1510	1813	10.3E
	2114	2351	8.0F
2 Sa	0234	0607	12.5E
	0910	1227	14.4F
	1601	1905	11.5E
	2209		
3 Su	0327	0043	8.4F
	0957	0658	13.0E
	1649	1315	15.1F
	2259	1953	12.4E
4 M ●	0418	0133	8.7F
	1043	0745	13.1E
	1734	1401	15.4F
	2346	2039	12.9E
5 Tu	0509	0222	8.9F
	1128	0832	12.9E
	1817	1446	15.1F
		2123	13.0E
6 W	0032	0309	8.9F
	0559	0918	12.2E
	1213	1529	14.3F
	1859	2206	12.7E
7 Th	0118	0357	8.6F
	0649	1004	11.2E
	1258	1613	13.1F
	1940	2250	12.1E
8 F	0204	0445	8.2F
	0741	1051	9.9E
	1344	1658	11.5F
	2021	2334	11.3E
9 Sa	0251	0536	7.7F
	0837	1141	8.5E
	1432	1744	9.8F
	2102		
10 Su		0020	10.3E
	0340	0630	7.2F
	0936	1235	7.0E
	1525	1834	8.1F
	2145		
11 M ◐		0109	9.4E
	0432	0728	6.9F
	1042	1335	5.9E
	1625	1929	6.6F
	2230		
12 Tu		0202	8.6E
	0525	0828	6.9F
	1151	1443	5.2E
	1733	2027	5.4F
	2319		
13 W		0258	8.0E
	0618	0927	7.3F
	1259	1553	5.2E
	1846	2128	4.7F
14 Th	0010	0355	7.9E
	0709	1022	8.0F
	1400	1657	5.7E
	1953	2225	4.5F
15 F	0102	0448	8.1E
	0755	1111	8.9F
	1452	1751	6.7E
	2051	2318	4.7F
16 Sa	0153	0536	8.6E
	0838	1156	10.0F
	1536	1838	7.7E
	2140		
17 Su		0005	5.1F
	0240	0620	9.2E
	0919	1236	11.0F
	1615	1919	8.8E
	2222		
18 M		0048	5.8F
	0325	0702	9.8E
	0958	1315	12.0F
	1651	1957	9.8E
	2301		
19 Tu ○		0129	6.5F
	0409	0741	10.5E
	1037	1353	12.8F
	1727	2034	10.6E
	2339		
20 W		0210	7.3F
	0453	0821	11.0E
	1117	1431	13.3F
	1803	2111	11.3E
21 Th	0017	0251	8.0F
	0538	0902	11.2E
	1157	1511	13.4F
	1839	2149	11.7E
22 F	0056	0334	8.5F
	0625	0945	11.1E
	1240	1552	13.0F
	1916	2228	11.9E
23 Sa	0137	0420	8.9F
	0715	1030	10.7E
	1326	1636	12.3F
	1956	2310	11.8E
24 Su	0221	0509	9.1F
	0810	1120	9.9E
	1416	1724	11.1F
	2038	2355	11.5E
25 M	0310	0603	9.2F
	0911	1215	9.0E
	1511	1816	9.7F
	2123		
26 Tu ◑		0045	11.0E
	0402	0703	9.4F
	1018	1318	8.1E
	1616	1915	8.3F
	2214		
27 W		0141	10.6E
	0459	0808	9.7F
	1131	1429	7.6E
	1729	2020	7.2F
	2310		
28 Th		0244	10.3E
	0600	0914	10.4F
	1244	1544	7.8E
	1846	2129	6.7F
29 F	0012	0349	10.5E
	0701	1018	11.4F
	1352	1654	8.6E
	1957	2234	6.8F
30 Sa	0116	0453	10.9E
	0759	1117	12.5F
	1452	1756	9.9E
	2059	2335	7.3F
31 Su	0218	0551	11.6E
	0853	1211	13.5F
	1544	1849	11.1E
	2154		

August

	Slack	Maximum	
	h m	h m	knots
1 M		0030	8.1F
	0316	0644	12.3E
	0943	1259	14.2F
	1631	1936	12.2E
	2242		
2 Tu ●		0121	8.9F
	0410	0733	12.7E
	1030	1346	14.5F
	1714	2020	12.8E
	2326		
3 W		0208	9.4F
	0501	0820	12.7E
	1116	1429	14.2F
	1755	2102	13.0E
4 Th	0008	0252	9.7F
	0549	0904	12.3E
	1159	1510	13.5F
	1833	2142	12.8E
5 F	0049	0336	9.7F
	0636	0947	11.5E
	1242	1550	12.4F
	1911	2221	12.2E
6 Sa	0130	0419	9.3F
	0722	1030	10.3E
	1324	1630	10.9F
	1947	2301	11.3E
7 Su	0211	0503	8.8F
	0810	1114	8.9E
	1408	1711	9.3F
	2023	2341	10.2E
8 M	0254	0549	8.0F
	0902	1201	7.5E
	1455	1755	7.6F
	2101		
9 Tu		0024	9.0E
	0340	0639	7.3F
	0958	1254	6.1E
	1549	1844	6.0F
	2141		
10 W ◐		0111	7.9E
	0430	0736	6.8F
	1103	1357	5.1E
	1653	1940	4.6F
	2227		
11 Th		0206	7.1E
	0525	0838	6.7F
	1212	1509	4.7E
	1809	2045	3.8F
	2321		
12 F		0307	6.7E
	0622	0939	7.2F
	1319	1621	5.2E
	1923	2150	3.7F
13 Sa	0022	0410	6.9E
	0717	1036	8.0F
	1416	1721	6.2E
	2025	2250	4.1F
14 Su	0123	0507	7.6E
	0807	1126	9.2F
	1504	1810	7.5E
	2114	2341	5.0F
15 M	0219	0557	8.6E
	0854	1210	10.5F
	1545	1852	8.8E
	2156		
16 Tu		0027	6.2F
	0309	0641	9.7E
	0937	1251	11.7F
	1623	1930	10.1E
	2233		
17 W		0109	7.5F
	0356	0723	10.8E
	1019	1331	12.6F
	1658	2007	11.2E
	2310		
18 Th ○		0149	8.8F
	0441	0805	11.7E
	1101	1410	13.2F
	1734	2044	12.1E
	2346		
19 F		0230	9.9F
	0527	0846	12.2E
	1143	1450	13.4F
	1809	2121	12.6E
20 Sa	0024	0312	10.7F
	0613	0928	12.2E
	1226	1530	13.0F
	1846	2159	12.8E
21 Su	0104	0356	11.2F
	0701	1013	11.8E
	1312	1613	12.1F
	1924	2239	12.6E
22 M	0146	0443	11.3F
	0753	1101	11.0E
	1400	1659	10.8F
	2005	2323	12.1E
23 Tu	0233	0534	11.0F
	0850	1154	9.9E
	1455	1750	9.3F
	2050		
24 W ◑		0012	11.2E
	0324	0632	10.6F
	0954	1255	8.7E
	1558	1849	7.7F
	2142		
25 Th		0109	10.3E
	0423	0737	10.2F
	1104	1404	7.9E
	1711	1956	6.5F
	2242		
26 F		0214	9.6E
	0527	0846	10.2F
	1218	1521	7.9E
	1829	2109	6.1F
	2351		
27 Sa		0325	9.4E
	0634	0954	10.7F
	1327	1634	8.6E
	1942	2220	6.4F
28 Su	0103	0435	9.9E
	0739	1057	11.5F
	1428	1736	9.8E
	2043	2323	7.3F
29 M	0211	0538	10.7E
	0837	1153	12.3F
	1521	1828	11.1E
	2134		
30 Tu		0017	8.5F
	0311	0632	11.6E
	0929	1242	12.9F
	1607	1914	12.1E
	2219		
31 W		0106	9.6F
	0404	0721	12.2E
	1017	1327	13.1F
	1648	1956	12.7E
	2300		

September

	Slack	Maximum	
	h m	h m	knots
1 Th ●		0150	10.4F
	0452	0805	12.4E
	1102	1408	12.9F
	1726	2036	12.9E
	2339		
2 F		0231	10.8F
	0536	0847	12.2E
	1144	1447	12.3F
	1802	2113	12.7E
3 Sa	0016	0310	10.9F
	0619	0928	11.6E
	1225	1524	11.3F
	1837	2149	12.0E
4 Su	0053	0349	10.5F
	0701	1008	10.6E
	1305	1601	10.0F
	1910	2225	11.0E
5 M	0130	0427	9.8F
	0743	1048	9.3E
	1346	1638	8.5F
	1943	2302	9.9E
6 Tu	0207	0508	9.0F
	0828	1131	7.9E
	1430	1718	6.9F
	2017	2340	8.6E
7 W	0248	0553	8.0F
	0917	1218	6.6E
	1520	1804	5.4F
	2055		
8 Th		0023	7.4E
	0334	0645	7.2F
	1015	1315	5.6E
	1622	1859	4.1F
	2140		
9 F ◑		0115	6.4E
	0428	0746	6.8F
	1121	1425	5.0E
	1737	2007	3.4F
	2239		
10 Sa		0220	5.8E
	0531	0853	6.8F
	1229	1540	5.3E
	1853	2119	3.4F
	2350		
11 Su		0332	6.0E
	0636	0957	7.5F
	1331	1644	6.3E
	1955	2223	4.2F
12 M	0102	0438	6.9E
	0735	1052	8.6F
	1423	1736	7.7E
	2043	2317	5.6F
13 Tu	0204	0533	8.2E
	0828	1141	9.9F
	1507	1820	9.2E
	2123		
14 W		0004	7.3F
	0257	0621	9.7E
	0916	1225	11.1F
	1547	1859	10.6E
	2201		
15 Th		0046	9.0F
	0345	0705	11.1E
	1001	1306	12.1F
	1624	1937	11.9E
	2237		
16 F ○		0127	10.6F
	0430	0747	12.2E
	1045	1346	12.7F
	1700	2014	12.8E
	2314		
17 Sa		0208	11.9F
	0515	0830	12.8E
	1129	1427	12.7F
	1737	2051	13.3E
	2352		
18 Su		0250	12.8F
	0601	0913	13.0E
	1213	1508	12.3F
	1814	2130	13.4E
19 M	0031	0333	13.2F
	0648	0957	12.6E
	1259	1551	11.4F
	1853	2210	13.0E
20 Tu	0114	0418	13.1F
	0738	1045	11.7E
	1348	1637	10.1F
	1935	2255	12.2E
21 W	0159	0508	12.4F
	0832	1137	10.6E
	1442	1728	8.5F
	2021	2344	11.0E
22 Th	0251	0604	11.5F
	0932	1236	9.4E
	1545	1828	7.0F
	2116		
23 F ◑		0041	9.8E
	0349	0708	10.6F
	1038	1343	8.5E
	1658	1938	6.0F
	2222		
24 Sa		0149	8.7E
	0456	0818	10.0F
	1148	1458	8.3E
	1814	2054	5.9F
	2339		
25 Su		0305	8.4E
	0609	0929	9.9F
	1256	1609	8.9E
	1923	2206	6.6F
26 M	0057	0419	8.8E
	0718	1034	10.3F
	1357	1710	9.9E
	2020	2308	7.8F
27 Tu	0206	0523	9.7E
	0820	1130	10.9F
	1449	1802	11.0E
	2109		
28 W		0001	9.2F
	0304	0617	10.7E
	0914	1219	11.3F
	1534	1847	11.9E
	2151		
29 Th		0047	10.4F
	0355	0705	11.5E
	1002	1303	11.4F
	1615	1928	12.4E
	2230		
30 F ●		0128	11.3F
	0440	0748	11.9E
	1046	1343	11.2F
	1652	2006	12.5E
	2306		

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

Seymour Narrows, British Columbia, 2016

F–Flood, Dir. 180° True E–Ebb, Dir. 000° True

October

	Slack	Maximum	
	h m	h m	knots
1 Sa	0521	0206	11.7F
	1127	0829	11.8E
	1727	1421	10.6F
	2341	2042	12.2E
2 Su	0601	0243	11.8F
	1207	0908	11.3E
	1759	1456	9.8F
		2116	11.5E
3 M	0015	0318	11.4F
	0639	0946	10.6E
	1246	1532	8.7F
	1831	2150	10.6E
4 Tu	0049	0354	10.8F
	0718	1024	9.6E
	1327	1608	7.4F
	1903	2224	9.5E
5 W	0124	0432	10.0F
	0759	1104	8.5E
	1410	1647	6.2F
	1936	2300	8.3E
6 Th	0202	0513	9.1F
	0844	1149	7.4E
	1459	1731	4.9F
	2015	2342	7.2E
7 F	0245	0601	8.1F
	0935	1242	6.5E
	1559	1827	3.9F
	2103		
8 Sa ◐	0337	0033	6.1E
	1034	0659	7.4F
	1709	1346	6.0E
	2208	1935	3.4F
9 Su	0441	0138	5.5E
	1138	0807	7.1F
	1819	1456	6.2E
	2327	2049	3.8F
10 M	0553	0254	5.6E
	1240	0914	7.5F
	1918	1601	7.0E
		2155	4.9F
11 Tu	0043	0406	6.5E
	0701	1015	8.3F
	1335	1656	8.3E
	2006	2250	6.6F
12 W	0148	0506	7.9E
	0800	1107	9.3F
	1423	1742	9.8E
	2048	2338	8.6F
13 Th	0242	0558	9.6E
	0853	1155	10.3F
	1505	1824	11.2E
	2127		
14 F	0332	0022	10.6F
	0942	0645	11.1E
	1546	1239	11.1F
	2205	1904	12.4E
15 Sa ○	0418	0104	12.3F
	1029	0730	12.3E
	1624	1321	11.5F
	2243	1943	13.3E
16 Su	0504	0146	13.7F
	1114	0814	13.0E
	1703	1403	11.5F
	2322	2022	13.7E
17 M	0549	0228	14.5F
	1200	0858	13.2E
	1743	1446	11.1F
		2103	13.6E
18 Tu	0003	0312	14.8F
	0636	0943	12.9E
	1248	1530	10.2F
	1824	2145	13.1E
19 W	0046	0357	14.4F
	0725	1031	12.2E
	1338	1618	9.1F
	1909	2231	12.0E
20 Th	0132	0447	13.5F
	0816	1122	11.2E
	1433	1711	7.8F
	1959	2321	10.7E
21 F	0222	0541	12.2F
	0912	1219	10.1E
	1535	1812	6.6F
	2058		
22 Sa ◑	0320	0019	9.2E
	1012	0642	10.8F
	1644	1323	9.3E
	2210	1922	6.0F
23 Su	0427	0127	8.0E
	1116	0750	9.8F
	1754	1431	9.0E
	2330	2037	6.1F
24 M	0541	0243	7.5E
	1219	0859	9.2F
	1858	1539	9.3E
		2147	7.0F
25 Tu	0048	0358	7.8E
	0653	1004	9.1F
	1318	1639	10.0E
	1952	2247	8.3F
26 W	0156	0503	8.6E
	0758	1101	9.3F
	1410	1731	10.8E
	2039	2339	9.7F
27 Th	0252	0558	9.6E
	0854	1151	9.4F
	1456	1816	11.4E
	2120		
28 F	0341	0023	10.8F
	0943	0646	10.4E
	1537	1235	9.4F
	2158	1857	11.8E
29 Sa	0425	0103	11.6F
	1028	0729	10.8E
	1614	1315	9.2F
	2233	1934	11.8E
30 Su ●	0505	0140	12.1F
	1109	0809	11.0E
	1649	1353	8.8F
	2307	2010	11.5E
31 M	0542	0216	12.2F
	1149	0847	10.8E
	1721	1428	8.2F
	2340	2044	10.9E

November

	Slack	Maximum	
	h m	h m	knots
1 Tu	0619	0250	12.0F
	1229	0925	10.3E
	1753	1504	7.4F
		2117	10.2E
2 W	0013	0325	11.6F
	0656	1003	9.7E
	1310	1541	6.5F
	1826	2151	9.3E
3 Th	0048	0402	11.0F
	0735	1042	9.0E
	1353	1620	5.7F
	1902	2228	8.4E
4 F	0125	0442	10.2F
	0817	1126	8.3E
	1441	1706	4.9F
	1944	2310	7.4E
5 Sa	0207	0528	9.3F
	0903	1215	7.7E
	1537	1801	4.3F
	2037		
6 Su	0258	0001	6.5E
	0955	0623	8.5F
	1638	1311	7.3E
	2145	1906	4.1F
7 M ◐	0359	0104	5.8E
	1052	0726	8.0F
	1740	1413	7.5E
	2303	2016	4.7F
8 Tu	0512	0217	5.8E
	1150	0832	7.8F
	1837	1515	8.1E
		2122	6.0F
9 W	0020	0331	6.5E
	0624	0935	8.1F
	1245	1612	9.1E
	1926	2219	7.8F
10 Th	0127	0437	7.7E
	0730	1031	8.7F
	1336	1702	10.4E
	2011	2310	9.8F
11 F	0225	0534	9.2E
	0829	1123	9.3F
	1423	1749	11.6E
	2053	2357	11.8F
12 Sa	0317	0625	10.7E
	0923	1211	9.9F
	1507	1832	12.7E
	2134		
13 Su	0405	0042	13.5F
	1013	0713	11.9E
	1550	1257	10.2F
	2215	1915	13.4E
14 M ○	0452	0126	14.8F
	1101	0759	12.7E
	1633	1342	10.2F
	2257	1957	13.7E
15 Tu	0538	0210	15.5F
	1149	0844	13.1E
	1716	1427	9.8F
	2339	2040	13.6E
16 W	0625	0254	15.6F
	1238	0930	13.0E
	1801	1514	9.2F
		2125	12.9E
17 Th	0023	0340	15.1F
	0712	1018	12.5E
	1328	1603	8.4F
	1850	2212	11.8E
18 F	0110	0428	14.0F
	0801	1108	11.8E
	1422	1657	7.5F
	1944	2303	10.5E
19 Sa	0159	0520	12.6F
	0851	1201	10.9E
	1520	1757	6.8F
	2045		
20 Su	0256	0000	9.0E
	0945	0618	11.0F
	1622	1259	10.2E
	2156	1904	6.4F
21 M ◑	0359	0105	7.7E
	1041	0720	9.6F
	1725	1400	9.7E
	2314	2014	6.6F
22 Tu	0510	0217	7.0E
	1138	0825	8.5F
	1825	1503	9.6E
		2120	7.4F
23 W	0030	0330	6.9E
	0622	0929	7.9F
	1234	1602	9.9E
	1918	2220	8.4F
24 Th	0138	0437	7.4E
	0730	1027	7.6F
	1326	1655	10.2E
	2005	2311	9.6F
25 F	0235	0535	8.2E
	0830	1118	7.5F
	1413	1742	10.6E
	2047	2357	10.6F
26 Sa	0324	0624	9.0E
	0922	1205	7.4F
	1456	1824	10.8E
	2126		
27 Su	0407	0037	11.4F
	1009	0709	9.6E
	1535	1246	7.3F
	2202	1903	10.8E
28 M	0447	0115	11.9F
	1051	0749	9.9E
	1611	1325	7.1F
	2236	1940	10.7E
29 Tu ●	0524	0150	12.2F
	1132	0828	10.1E
	1646	1402	6.8F
	2310	2015	10.4E
30 W	0600	0225	12.3F
	1212	0905	10.1E
	1720	1439	6.5F
	2344	2049	10.0E

December

	Slack	Maximum	
	h m	h m	knots
1 Th	0636	0300	12.2F
	1252	0943	9.9E
	1757	1517	6.1F
		2125	9.5E
2 F	0020	0337	11.9F
	0713	1022	9.7E
	1334	1559	5.8F
	1837	2204	8.8E
3 Sa	0058	0418	11.3F
	0752	1103	9.4E
	1419	1644	5.5F
	1923	2247	8.1E
4 Su	0141	0502	10.6F
	0835	1148	9.1E
	1508	1737	5.3F
	2018	2337	7.4E
5 M	0231	0553	9.8F
	0921	1238	8.9E
	1602	1836	5.4F
	2124		
6 Tu	0329	0036	6.7E
	1011	0650	8.9F
	1657	1332	8.9E
	2238	1941	6.0F
7 W ◐	0436	0143	6.4E
	1103	0752	8.3F
	1753	1430	9.2E
	2353	2046	7.2F
8 Th	0549	0256	6.7E
	1157	0855	8.0F
	1845	1528	9.8E
		2146	8.8F
9 F	0103	0406	7.5E
	0700	0955	8.0F
	1250	1623	10.7E
	1935	2242	10.6F
10 Sa	0205	0509	8.7E
	0805	1052	8.2F
	1342	1715	11.6E
	2022	2333	12.4F
11 Su	0301	0605	10.1E
	0904	1145	8.6F
	1432	1804	12.5E
	2108		
12 M	0352	0021	14.0F
	0958	0656	11.3E
	1521	1235	8.9F
	2153	1851	13.2E
13 Tu ○	0441	0108	15.2F
	1049	0745	12.3E
	1609	1324	9.0F
	2237	1938	13.5E
14 W	0527	0154	15.8F
	1138	0832	12.9E
	1657	1412	9.0F
	2321	2023	13.4E
15 Th	0612	0239	15.8F
	1226	0918	13.0E
	1746	1500	8.8F
		2110	12.8E
16 F	0007	0325	15.2F
	0657	1004	12.8E
	1315	1550	8.5F
	1837	2157	11.8E
17 Sa	0053	0411	14.2F
	0742	1051	12.3E
	1405	1642	8.0F
	1932	2247	10.6E
18 Su	0142	0500	12.7F
	0828	1139	11.6E
	1457	1738	7.5F
	2031	2341	9.1E
19 M	0234	0552	11.0F
	0915	1230	10.8E
	1552	1838	7.2F
	2137		
20 Tu ◑	0331	0040	7.8E
	1003	0647	9.4F
	1648	1324	10.1E
	2248	1941	7.1F
21 W	0436	0145	6.7E
	1054	0746	7.9F
	1745	1421	9.5E
		2045	7.4F
22 Th	0001	0255	6.2E
	0546	0848	6.8F
	1146	1519	9.2E
	1839	2145	8.1F
23 F	0110	0405	6.2E
	0657	0947	6.1F
	1238	1615	9.2E
	1929	2239	8.9F
24 Sa	0211	0507	6.8E
	0802	1043	5.8F
	1328	1706	9.3E
	2014	2328	9.7F
25 Su	0303	0601	7.5E
	0859	1133	5.7F
	1415	1752	9.6E
	2055		
26 M	0348	0010	10.6F
	0949	0648	8.3E
	1458	1218	5.8F
	2133	1834	9.8E
27 Tu	0428	0050	11.3F
	1033	0729	9.0E
	1539	1259	5.9F
	2209	1913	10.0E
28 W ●	0504	0126	11.9F
	1113	0808	9.6E
	1618	1339	6.1F
	2245	1950	10.1E
29 Th	0540	0202	12.3F
	1152	0845	10.0E
	1656	1418	6.3F
	2321	2027	10.1E
30 F	0615	0239	12.6F
	1230	0922	10.3E
	1737	1457	6.5F
	2359	2105	10.0E
31 Sa	0650	0316	12.6F
	1309	0959	10.5E
	1820	1538	6.7F
		2145	9.8E

Time meridian 120° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.

TABLE 2 – CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	Meter Depth	POSITION Latitude	POSITION Longitude	TIME DIFFERENCES Min. before Flood	TIME DIFFERENCES Flood	TIME DIFFERENCES Min. before Ebb	TIME DIFFERENCES Ebb	SPEED RATIOS Flood	SPEED RATIOS Ebb	AVERAGE SPEEDS AND DIRECTIONS Minimum before Flood knots	Dir.	Maximum Flood knots	Dir.	Minimum before Ebb knots	Dir.	Maximum Ebb knots	Dir.
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	SAN JOAQUIN RIVER <11>–cont. Time meridian, 120° W						on Benicia Bridge, p.32											
991	West Island, north of	3d	38° 01.49'	121° 47.40'	+2 08	+1 50	+1 33	+1 55	0.6	1.1	– –	– –	1.2	076°	– –	– –	1.5	255°
	... do.	13d	38° 01.44'	121° 47.40'	+2 05	+1 51	+1 39	+1 58	0.6	1.0	– –	– –	1.1	074°	– –	– –	1.4	255°
	... do.	26d	38° 01.44'	121° 47.40'	+2 00	+1 46	+1 43	+2 04	0.5	0.8	– –	– –	1.0	073°	– –	– –	1.2	256°
996	Antioch, Route 160 bridge	7d	38° 01.62'	121° 45.18'	+1 56	+1 51	+1 48	+1 56	0.7	0.9	– –	– –	1.3	096°	– –	– –	1.2	277°
	... do.	17d	38° 01.62'	121° 45.18'	+1 56	+1 50	+1 46	+1 56	0.6	0.8	– –	– –	1.2	095°	– –	– –	1.2	277°
	... do.	30d	38° 01.62'	121° 45.18'	+1 56	+1 49	+1 43	+2 00	0.5	0.7	– –	– –	1.0	093°	– –	– –	1.0	276°
1001	Vulcan Island, 0.5 mile east of	17d	37° 59.12'	121° 23.45'	+3 37	+3 23	+3 24	+3 30	0.4	0.3	– –	– –	0.7	135°	– –	– –	0.4	315°
	CALIFORNIA COAST–cont.																	
1006	Cape Mendocino Light, 4.6 mi. W of		40° 26'	124° 30'			Current weak and variable											
	HUMBOLDT BAY						on Humboldt Bay Entr. Channel, p.36											
1011	Humboldy Bay Bar Channel, 0.4 nm WNW of	4d	40° 46.01'	124° 15.18'	–0 29	–1 13	–0 41	–0 37	0.2	0.3	0.1	329°	0.4	048°	0.1	154°	0.5	232°
	... do.	31d	40° 46.01'	124° 15.18'	–0 39	–1 23	–0 25	–0 58	0.2	0.3	0.2	334°	0.3	041°	– –	– –	0.4	230°
1016	HUMBOLDT BAY ENTRANCE CHANNEL	15d	40° 45.91'	124° 14.26'			*Daily predictions*				– –	– –	1.7	140°	0.1	050°	1.5	323°
	... do.	34d	40° 45.91'	124° 14.26'	–0 13	–0 01	–0 02	–0 06	0.8	0.7	– –	– –	1.3	141°	– –	– –	1.1	323°
1021	Humboldt Bay Entr., 0.1nm NE of South Spit Light	14d	40° 45.47'	124° 13.97'	+0 55	–0 15	–0 17	+0 21	0.9	1.4	0.1	072°	1.6	168°	– –	– –	2.2	341°
	... do.	30d	40° 45.47'	124° 13.97'	+0 55	–0 13	–0 15	+0 21	0.9	1.3	0.1	078°	1.5	171°	– –	– –	2.1	346°
1026	North Spit, 0.15 n.mi. SW of	15d	40° 45.47'	124° 13.37'	+0 19	–1 57	–2 01	+0 16	0.4	1.1	0.1	155°	0.6	073°	– –	– –	1.6	243°
	... do.	32d	40° 45.47'	124° 13.37'	+0 05	–2 09	–2 11	+0 09	0.3	0.8	– –	– –	0.5	070°	– –	– –	1.3	257°
1031	South Spit, 0.1 n.mi. E of	15d	40° 44.87'	124° 13.45'	+0 10	–0 52	–0 47	+0 20	0.5	0.8	– –	– –	0.8	178°	0.1	086°	1.2	002°
1036	North Bay Channel, west of Eureka	15d	40° 47.23'	124° 11.56'	+0 40	+0 01	+0 00	+0 21	0.9	1.2	– –	– –	1.6	021°	– –	– –	1.8	197°
	... do.	28d	40° 47.23'	124° 11.56'	+0 16	–0 10	–0 02	+0 10	0.8	0.9	– –	– –	1.4	013°	0.1	286°	1.4	200°
1041	North Bay Channel at Fairhaven	13d	40° 47.24'	124° 11.66'	+0 18	+0 05	–0 11	+0 07	0.8	1.2	– –	– –	1.3	030°	– –	– –	1.8	216°
1046	North Bay Channel at Samoa Channel	15d	40° 47.77'	124° 11.24'	+0 14	+0 08	+0 00	+0 05	0.8	0.9	– –	– –	1.2	015°	– –	– –	1.3	196°
	OREGON COAST						on Wrangell Narrows, p.92											
1051	Coquille River entrance		43° 07.30'	124° 25.18'	+0 00	–0 25	–0 27	–0 17	0.4	0.6	– –	– –	1.4	091°	– –	– –	1.2	290°
1056	Coos Bay entrance		43° 21.30'	124° 20.47'	+0 36	+0 18	+0 18	+0 39	0.6	1.1	– –	– –	1.8	100°	– –	– –	2.2	280°
1061	Umpqua River entrance		43° 40.70'	124° 11.60'	+0 46	+0 28	+0 28	+0 49	0.3	0.5	– –	– –	0.8	010°	– –	– –	1.0	190°
1066	Heceta Head <13>		44° 08'	124° 08'	+1 06	+0 48	+0 48	+1 09	0.4	0.7	– –	– –	1.2	005°	– –	– –	1.4	185°
	YAQUINA BAY																	
1071	Yaquina Bay entrance		44° 37'	124° 04'	–0 20	–0 04	–0 17	–0 55	0.8	1.1	– –	– –	2.4	050°	– –	– –	2.3	235°
1076	Highway Bridge		44° 37.40'	124° 03.42'	–0 31	+0 10	–0 40	+0 07	0.6	1.0	– –	– –	1.9	044°	– –	– –	2.1	222°
1081	Yaquina, Yaquina River		44° 36.12'	124° 00.68'	–0 09	+0 10	–0 33	+0 27	0.3	0.5	– –	– –	1.0	184°	– –	– –	1.1	002°
1086	Yaquina River, 1 mile below Toledo		44° 36.03'	123° 56.50'	+0 33	+0 47	+0 14	+0 58	0.4	0.7	– –	– –	1.4	332°	– –	– –	1.4	132°
	TILLAMOOK BAY																	
1091	Tillamook Bay entrance		45° 33.73'	123° 56.30'	+0 40	+0 13	–0 05	–0 16	0.9	1.3	– –	– –	3.0	141°	– –	– –	2.6	305°
	COLUMBIA RIVER and APPROACHES <15>						on Grays Harbor Ent., p.40											
1096	Lighted Horn Buoy R"C" <14>		46° 11'	124° 11'	– – –	– – –	– – –	– – –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
1101	Sand Island Tower, 1nm SE of (midchannel)	15	46° 15.17'	123° 59.45'	+1 12	+1 03	+0 38	+0 07	1.6	1.6	0.1	016°	3.0	107°	0.3	191°	4.4	275°
1106	Sand Island Tower, 0.9nm SE of (north channel)	15	46° 15.47'	123° 59.67'	+0 39	+0 33	+0 27	–0 44	1.1	0.7	0.2	015°	2.1	092°	0.1	184°	1.9	262°
1111	Baker Bay entrance, E of Sand Island Tower	23	46° 15.72'	123° 59.88'	+0 28	+0 08	+0 20	+0 14	0.6	0.3	– –	– –	1.2	008°	– –	– –	0.8	202°
1116	Clatsop Spit, NNE of	15	46° 14.77'	123° 59.65'	+0 45	+0 56	+0 56	+0 20	1.4	1.1	0.1	032°	2.6	114°	0.2	205°	3.2	289°
1121	Sand Island, SSE of	12	46° 15.33'	123° 58.08'	+0 18	–0 25	–0 16	–0 32	0.3	0.4	– –	– –	0.6	097°	– –	– –	1.1	265°
1126	Clatsop Spit, northeast of	12	46° 14.35'	123° 59.88'	– – –	–0 01	–1 16	+0 36	0.4	1.0	– –	– –	0.8	131°	0.1	045°	2.8	313°

Endnotes can be found at the end of table 2.

TABLE 2 – CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	Meter Depth	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Latitude	Longitude	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum Flood		Minimum before Ebb		Maximum Ebb	
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	COLUMBIA RIVER and APPROACHES <15>–cont. Time meridian, 120° W				on Grays Harbor Ent., p.40													
1131	Astoria Range	12	46° 11.92'	123° 49.42'	– – –	+1 19	+0 38	+0 52	0.6	1.0	– –	– –	1.2	088°	0.2	175°	2.8	243°
1136	Youngs Bay Entrance	17	46° 11.18'	123° 53.27'	+1 46	+1 45	+1 28	−0 38	0.9	0.4	0.2	172°	1.7	093°	0.1	006°	1.1	260°
								+0 40		0.3							0.8	266°
								+2 45		0.5							1.4	261°
1141	Youngs Bay Bridge	9	46° 10.67'	123° 52.10'	+0 10	−0 14	+0 50	+0 28	0.4	0.3	– –	– –	0.8	135°	0.1	222°	0.8	320°
1146	Hammond, northeast of ship channel	15	46° 12.67'	123° 56.07'	+0 57	+0 24	+0 26	+0 01	0.4	0.6	0.1	219°	0.8	134°	0.1	230°	1.7	307°
1151	McGowan, SSW of	14	46° 14.37'	123° 54.92'	+1 28	+1 14	+0 21	+0 23	0.9	1.6	– –	– –	1.7	107°	– –	– –	4.3	282°
1156	Point Ellice, east of	17	46° 14.50'	123° 50.90'	+0 55	+0 25	+0 51	+0 11	0.8	0.9	– –	– –	1.6	065°	0.1	336°	2.4	254°
1161	Point Adams, NNE OF	14	46° 13.67'	123° 58.05'	+1 16	+0 13	+0 26	+1 11	0.8	0.9	0.3	202°	1.6	139°	0.4	210°	2.5	297°
1166	Chinook Point, WSW of	14	46° 14.53'	123° 57.85'	+0 29	+0 25	+0 45	−0 21	1.2	0.9	0.2	200°	2.2	117°	0.4	199°	2.4	287°
1171	Tongue Point, northwest of	15	46° 13.15'	123° 46.00'	+2 31	+1 09	+0 24	+0 46	0.4	0.9	– –	– –	0.8	077°	– –	– –	2.4	249°
1176	Altoona, SSW of	22	46° 15.55'	123° 39.40'	– – –	+1 23	+1 19	+2 22	0.3	0.7	– –	– –	0.5	061°	– –	– –	1.9	243°
1181	Woody Island Channel	15	46° 14.37'	123° 40.40'	+1 12	+1 09	+1 36	+1 15	0.5	0.3	– –	– –	1.0	118°	– –	– –	0.9	298°
1186	Woody Island Channel (off Seal Island)	12	46° 13.05'	123° 37.75'	+2 38	+1 53	+1 25	+2 53	0.3	0.4	0.1	156°	0.5	081°	0.1	358°	1.2	247°
1191	Three Tree Point, 5 miles WSW of	14	46° 15.90'	123° 32.10'	+4 29	+2 40	– – –	+2 36	0.1	0.9	– –	– –	0.2	080°	– –	– –	2.4	258°
1196	Quinn Island, Prairie Channel	8	46° 14.23'	123° 30.20'	+3 19	+1 52	+0 55	+1 53	0.3	0.5	– –	– –	0.5	097°	– –	– –	1.3	281°
1201	Clifton Channel	10	46° 13.07'	123° 27.92'	+3 41	+2 27	+1 21	+2 17	0.3	0.4	– –	– –	0.5	118°	– –	– –	1.1	301°
1206	Tenasillahe Island, northwest of <16>	22	46° 14.60'	123° 26.10'	– – –	– – –	– – –	+2 47	– –	0.8	– –	– –	– –	– –	– –	– –	2.2	329°
1211	Hunting Island, south of	20	46° 12.43'	123° 24.25'	+4 20	+2 56	+1 38	+3 20	0.2	0.4	0.1	206°	0.3	125°	– –	– –	1.1	295°
1216	Puget Island, Wauna Range <17>	23	46° 10.45'	123° 25.38'	– – –	– – –	– – –	−3 22	– –	0.1	– –	– –	– –	– –	– –	– –	0.1	315°
								+2 57		0.7							2.0	313°
1221	Puget Island, Westport Turn & Range <17>	22	46° 08.67'	123° 20.38'	– – –	– – –	– – –	−2 38	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
								+4 01		0.7							1.9	269°
1226	Cathlamet Channel, SE of Nassa Point	19	46° 09.37'	123° 18.90'	+5 16	+3 23	+1 39	+5 38	0.1	0.6	0.1	221°	0.2	103°	– –	– –	1.6	278°
1231	Oak Point Channel <17>	15	46° 11.08'	123° 11.03'	– – –	– – –	– – –	−1 59	– –	0.4	– –	– –	– –	– –	– –	– –	1.1	235°
								+5 35		0.9							2.5	230°
1236	Stella, southwest of <17>	18	46° 11.13'	123° 07.45'	– – –	– – –	– – –	−1 54	– –	– –	– –	– –	– –	– –	– –	– –	0.1	295°
								+5 43		0.7							1.9	291°
1241	Walker Island Channel <17>	20	46° 09.17'	123° 02.57'	– – –	– – –	– – –	−1 29	– –	0.1	– –	– –	– –	– –	– –	– –	0.2	319°
								+5 47		0.7							2.0	313°
1246	Walker Island, south of	12	46° 08.47'	123° 02.75'	+5 46	+4 15	+2 41	+5 09	0.2	0.4	– –	– –	0.4	148°	– –	– –	1.2	330°
1251	Slaughters Channel <17>	18	46° 07.42'	122° 59.22'	– – –	– – –	– – –	−1 15	– –	0.2	– –	– –	– –	– –	– –	– –	0.6	306°
								+5 51		0.7							2.0	306°
1256	Cottonwood Island, west of <17>	34	46° 04.28'	122° 53.45'	– – –	– – –	– – –	−1 02	– –	0.1	– –	– –	– –	– –	– –	– –	0.4	325°
								+5 58		0.6							1.5	328°
1261	Kalma Upper Range <17>	13	46° 00.17'	122° 51.08'	– – –	– – –	– – –	−0 35	– –	0.3	– –	– –	– –	– –	– –	– –	0.8	343°
								+5 58		0.7							2.0	342°
	WASHINGTON COAST																	
1266	South Bend, Willapa River		46° 39.88'	123° 48.08'	+0 19	+0 20	+0 24	−0 06	0.6	0.5	– –	– –	1.2	090°	– –	– –	1.4	270°
	GRAYS HARBOR																	
1271	Entrance, 0.2 mile south of north jetty		46° 55.58'	124° 09.68'	−0 28	+0 16	+0 10	−0 47	1.3	0.6	– –	– –	2.5	070°	– –	– –	1.7	243°
1276	Entrance, Point Chehalis Range		46° 54.50'	124° 09.33'	+0 08	−0 11	−0 22	−0 21	0.9	1.1	– –	– –	1.7	092°	– –	– –	3.1	268°
1281	Entrance, 0.6 mile WNW of Westport		46° 54.88'	124° 07.50'	+0 00	+0 00	+0 06	+0 00	1.2	0.7	– –	– –	2.2	044°	– –	– –	1.9	238°
1286	GRAYS HARBOR ENTRANCE		46° 55.35'	124° 07.98'		*Daily predictions*					– –	– –	1.9	061°	– –	– –	2.8	242°
1291	Entrance, 1.1 miles NW of Westport		46° 55'	124° 08'	+0 04	−0 06	−0 05	−0 23	0.9	0.9	– –	– –	1.8	078°	– –	– –	2.5	233°
1296	Channel, 1.5 miles north of Westport		46° 56'	124° 06'	−0 22	−0 04	−0 04	−0 25	0.7	0.6	– –	– –	1.4	036°	– –	– –	1.8	226°
1301	Channel, 2.1 miles NNE of Westport		46° 56'	124° 05'	−0 02	+0 00	−0 02	+0 02	0.6	0.5	– –	– –	1.2	021°	– –	– –	1.3	249°
1306	Aberdeen, Chehalis River <18>		46° 58'	123° 49'	– – –	+0 35	– – –	+0 28	– –	– –	– –	– –	– –	042°	– –	– –	– –	230°
1311	Westport, channel 0.4 mile NE of		46° 54.85'	124° 06.50'	−0 41	−0 04	−0 19	−0 36	1.0	0.7	– –	– –	1.9	113°	– –	– –	1.9	310°

Endnotes can be found at the end of table 2.

TABLE 2 – CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	Meter Depth	POSITION Latitude	POSITION Longitude	TIME DIFFERENCES Min. before Flood	TIME DIFFERENCES Flood	TIME DIFFERENCES Min. before Ebb	TIME DIFFERENCES Ebb	SPEED RATIOS Flood	SPEED RATIOS Ebb	AVERAGE SPEEDS AND DIRECTIONS Minimum before Flood		Maximum Flood		Minimum before Ebb		Maximum Ebb	
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	WASHINGTON–BRITISH COLUMBIA COAST Time meridian, 120° W				on San Francisco Bay Ent., p.8													
1316	Quillayute River entrance		47° 55'	124° 38'	−0 12	−0 12	+0 24	+0 00	0.1	0.5	--	--	0.3	015°	--	--	1.3	345°
1321	Cape Alava, 4.4 miles west of <14>		48° 10'	124° 50'	---	---	---	---	--	--	--	--	--	--	--	--	--	--
1326	Swiftsure Bank <14>		48° 33'	125° 00'	---	---	---	---	--	--	--	--	--	--	--	--	--	--
1331	Vancouver Island, west coast <19>		---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--
	STRAIT of JUAN DE FUCA				on Strait of Juan de Fuca Ent., p.44<20>													
1336	STRAIT OF JUAN DE FUCA ENTRANCE		48° 27'	124° 35'		*Daily predictions*					--	--	0.6	115°	--	--	1.5	290°
1341	Pillar Point		48° 16'	124° 04'	−0 35	+0 06	+1 27	+0 52	1.2	1.2	--	--	1.4	100°	--	--	0.9	280°
					on Race Rocks, p.48 <20>													
1346	Angeles Point, 2.3 miles north of		48° 12'	123° 33'	+1 22	+0 21	−0 32	+0 13	0.8	1.1	--	--	1.0	078°	--	--	2.2	260°
1351	RACE ROCKS, 4 miles south of		48° 14'	123° 32'		*Daily predictions*					--	--	1.2	091°	--	--	2.0	271°
1356	Race Rocks, 0.5 mile southeast of		48° 17'	123° 31'	−1 10	---	−1 23	---	--	--	--	--	--	--	--	--	--	--
1361	Race Passage		48° 18'	123° 32'	−1 21	---	−1 53	---	--	--	--	--	--	--	--	--	--	--
1366	Port Angeles		48° 08'	123° 25'	Current weak and variable													
					on Admiralty Inlet, p.52 <20>													
1371	Ediz Hook Light, 1.4 miles southeast of		48° 07'	123° 24'	Current weak and variable													
1376	Ediz Hook Light, 1.2 miles north of		48° 10'	123° 25'	−0 32	−0 19	−0 05	−0 05	0.5	0.4	--	--	0.8	080°	--	--	1.1	295°
1381	Ediz Hook Light, 5.3 miles ENE of		48° 11'	123° 17'	+0 39	+0 12	−0 07	−0 14	0.6	0.8	--	--	1.0	055°	--	--	2.0	215°
1386	Trial Island, 5.2 miles SSW of		48° 19'	123° 22'	−0 08	+0 39	+1 22	+0 55	0.7	0.5	--	--	1.1	045°	--	--	1.4	235°
1391	New Dungeness Light, 2.8 miles NNW of		48° 14'	123° 08'	+0 57	+0 27	−0 13	+0 16	0.3	0.5	--	--	0.5	075°	--	--	1.2	255°
1396	New Dungeness Light, 6 miles NNE of		48° 16'	123° 03'	+0 51	+0 55	+0 27	+0 36	0.3	0.4	--	--	0.5	050°	--	--	1.1	255°
1401	Discovery Island, 7.6 miles SSE of		48° 18'	123° 10'	+0 27	+0 15	+0 51	+0 30	0.4	0.4	--	--	0.7	035°	--	--	1.0	260°
1406	Discovery Island, 3 miles SSE of		48° 23'	123° 12'	+0 23	+0 15	+0 02	+0 40	0.6	0.9	--	--	0.9	025°	--	--	2.3	250°
1411	Cattle Point, 2.8 miles SSW of <21>		48° 24'	123° 00'	−1 17	+0 52	+1 04	−0 42	0.4	0.2	--	--	0.6	046°	0.2	126°	0.4	187°
1416	Cattle Point, 5 miles SSW of		48° 23'	123° 01'	+1 14	+1 11	+1 20	+0 44	0.6	0.3	--	--	0.9	120°	--	--	0.9	210°
1421	Violet Point, 3.7 miles north of <22>		48° 11'	122° 55'	---	+0 22	−0 36	+0 09	0.2	0.5	--	--	0.4	100°	--	--	1.2	270°
1426	Violet Point, 3.2 miles northwest of		48° 10'	122° 58'	−0 05	−0 32	−0 08	−0 17	0.3	0.4	--	--	0.6	120°	--	--	1.0	325°
1431	Kamen Point, 1.3 miles southwest of		48° 06'	122° 58'	−1 10	−0 52	−1 06	−0 34	0.2	0.4	--	--	0.3	125°	--	--	1.0	265°
1436	Discovery Bay entrance <23>		48° 06'	122° 54'	---	---	---	---	--	--	--	--	--	--	--	--	--	--
1441	Smith Island, 2 miles east of <24>		48° 19'	122° 48'	+1 22	+0 51	---	+0 19	0.2	0.2	--	--	0.4	--	--	--	0.5	220°
1446	Smith Island, 1.4 miles SSW of		48° 18'	122° 51'	−0 06	+0 03	+0 29	+0 25	0.4	0.4	--	--	0.7	090°	--	--	1.0	280°
1451	Smith Island, 3.7 miles ESE of <25>		48° 18'	122° 45'	---	+1 11	---	+1 35	--	0.3	--	--	--	--	--	--	0.9	225°
1456	Point Partridge, 1.6 miles NW of <26>		48° 15'	122° 48'	---	---	---	---	--	0.4	--	--	--	--	--	--	1.1	175°
1461	Point Partridge, 3.7 miles west of		48° 14'	122° 52'	+1 27	+0 17	−0 24	+0 42	0.2	0.8	--	--	0.4	140°	--	--	2.1	250°
	ADMIRALTY INLET																	
1466	Point Wilson, 1.1 miles NW of		48° 10'	122° 46'	−1 53	−0 58	−0 08	−0 54	1.5	1.1	--	--	2.4	085°	--	--	2.8	285°
1471	Point Wilson, 0.5 mi., northeast of <27>		48° 09'	122° 45'	−1 08	−1 27	−0 47	−0 48	1.4	1.0	--	--	2.2	114°	--	--	2.6	298°
1476	Point Wilson, 1.4 miles northeast of <27>		48° 10'	122° 44'	−0 28	−0 17	+0 41	+0 07	2.0	1.3	--	--	3.4	112°	--	--	3.5	297°
1481	Point Wilson, 2.3 miles NE of <27>		48° 10'	122° 42'	−1 29	−0 07	+0 33	−0 07	1.0	1.0	--	--	2.0	143°	--	--	2.3	323°
1486	Admiralty Head, 0.5 mile west of		48° 09'	122° 42'	−0 31	−0 03	+0 01	−0 07	1.3	1.2	--	--	2.1	145°	--	--	3.1	025°
1491	Point Wilson, 0.8 mile east of		48° 09'	122° 44'	−0 53	−0 20	+0 27	−0 54	1.5	1.0	--	--	2.5	165°	--	--	2.6	280°
1496	Port Townsend, 0.5 mile S of Pt. Hudson		48° 07'	122° 45'	Current weak and variable						--	--	0.3	238°	--	--	0.5	048°
1501	Point Hudson, 0.5 mile east of		48° 07'	122° 44'	−3 21	−2 36	−2 42	−2 26	0.8	0.2	--	--	1.2	115°	--	--	0.6	010°
	Marrowstone Point																	
1506	1.1 miles northwest of		48° 07'	122° 42'	−3 31	−2 20	−1 02	−1 42	0.8	0.5	--	--	1.3	100°	--	--	1.3	275°
1511	0.4 mile northeast of <27>		48° 06'	122° 41'	−1 20	−1 03	−0 04	−1 03	1.1	1.1	--	--	2.4	122°	--	--	3.1	338°
1516	0.3 mile northeast of		48° 06'	122° 41'	−0 53	−1 36	−1 13	−0 13	1.2	1.1	--	--	2.0	170°	--	--	2.8	015°
1521	1.6 miles northeast of <27>		48° 07'	122° 40'	−0 16	+0 07	−0 03	−0 17	1.2	1.2	--	--	2.3	152°	--	--	2.6	344°
1526	2.5 miles northeast of <28>		48° 08'	122° 38'	---	---	---	---	--	--	--	--	--	--	--	--	--	--

Endnotes can be found at the end of table 2.

TABLE 2 – CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	Meter Depth	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Latitude	Longitude	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum Flood		Minimum before Ebb		Maximum Ebb	
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	ADMIRALTY INLET–cont. Time meridian, 120° W				**on Admiralty Inlet, p.52 <20>**													
1531	Nodule Point, 0.5 mile southeast of		48° 02'	122° 40'	−1 27	−0 47	−0 59	−0 24	1.2	1.0	--	--	2.0	160°	--	--	2.5	339°
1536	ADMIRALTY INLET (off Bush Point)		48° 02'	122° 38'		*Daily predictions*					--	--	1.6	179°	--	--	2.6	003°
1541	Bush Point Light, 0.5 mile NW of		48° 02'	122° 37'	−0 32	−0 21	−0 09	−0 35	1.1	1.1	--	--	1.7	141°	--	--	2.9	309°
1546	Mutiny Bay, 3.3 miles SE of Bush Point		47° 59.25'	122° 33.50'	---	−2 11	---	−2 25	0.6	0.4	--	--	1.0	133°	--	--	1.1	354°
1551	Olele Point, 1.8 miles ENE of <9>		47° 59'	122° 38'	−0 34	−0 31	−0 34	−0 37	0.5	0.5	--	--	0.8	167°	--	--	1.3	352°
					on Deception Pass, p.60													
1556	Port Townsend Canal		48° 02'	122° 44'	+0 06	−0 40	−0 46	−0 31	0.5	0.4	--	--	2.6	150°	--	--	2.9	330°
	HOOD CANAL				**on Admiralty Inlet, p.52 <20>**													
1561	Foulweather Bluff		47° 55.90'	122° 38.33'	+0 00	−0 24	−0 15	−0 25	0.4	0.4	--	--	0.7	140°	--	--	0.9	325°
1566	Port Gamble Bay, 0.5 mile N of entrance		47° 51.87'	122° 34.63'		Current weak and variable												
1571	Port Gamble Bay entrance		47° 51.27'	122° 34.63'	−1 03	−0 39	+0 04	−0 14	0.6	0.3	--	--	0.9	185°	--	--	0.7	000°
1576	Port Gamble Bay		47° 50.00'	122° 34.53'		Current weak and variable												
1581	South Point		47° 49'	122° 41'	---	−0 44	---	−0 29	0.4	0.4	--	--	0.6	218°	--	--	1.0	040°
1586	Hazel Point		47° 41.62'	122° 45.52'	---	−0 54	---	−0 52	0.3	0.3	--	--	0.4	183°	--	--	0.8	005°
1591	Chinom Point		47° 32'	123° 02'		Current weak and variable												
1596	The Great Bend		47° 21.30'	123° 01.80'	---	−1 06	---	−0 50	0.3	0.2	--	--	0.4	049°	--	--	0.5	251°
	PUGET SOUND																	
1601	Useless Bay		47° 58.70'	122° 29.72'		Current weak and variable												
1606	Foulweather Bluff		47° 57.25'	122° 34.75'	+0 09	+0 01	+0 14	−0 18	0.9	0.7	--	--	1.5	115°	--	--	1.8	335°
1611	Edmonds, 2.7 miles WSW of		47° 48.38'	122° 26.67'	+0 44	+0 06	+0 13	+0 19	0.1	0.2	--	--	0.2	170°	--	--	0.5	000°
1616	Apple Cove Point, 0.5 mile east of		47° 49'	122° 28'	---	−0 11	---	−0 29	0.3	0.3	--	--	0.5	168°	--	--	0.8	008°
1621	President Point, 1.5 miles east of		47° 45.72'	122° 26.10'	---	−0 38	---	−0 41	0.2	0.2	--	--	0.3	203°	--	--	0.5	024°
1626	Port Madison entrance		47° 44.13'	122° 29.50'		Current weak and variable												
1631	Agate Passage, north end		47° 43.32'	122° 33.30'	−1 28	−1 00	−0 18	−0 59	0.8	0.7	--	--	1.2	230°	--	--	1.8	032°
1636	Agate Passage, south end <27>		47° 42.77'	122° 33.93'	−1 25	−0 53	+0 00	−0 47	2.0	1.4	--	--	3.3	216°	--	--	3.6	037°
1641	Port Orchard		47° 38.25'	122° 35.08'		Current weak and variable												
1646	Port Orchard, off Keyport		47° 42.02'	122° 36.50'		Current weak and variable												
1651	Liberty Bay entrance, Port Orchard		47° 42.40'	122° 37.65'	---	−0 06	---	+0 22	0.4	0.3	--	--	0.7	280°	--	--	0.8	113°
1656	Shilshole Bay		47° 41'	122° 25'		Current weak and variable												
1661	West Point, 0.3 mile west of		47° 39.67'	122° 26.33'	−0 44	−0 43	−0 16	−0 47	0.4	0.3	--	--	0.7	225°	--	--	0.7	015°
1666	West Point, 1.2 miles west of		47° 39.57'	122° 27.92'		Current weak and variable												
1671	Elliott Bay entrance		47° 36.72'	122° 24.43'		Current weak and variable												
1676	Alki Point, 0.3 mile west of		47° 34.53'	122° 25.68'	−0 36	−0 44	−0 13	−0 39	0.3	0.2	--	--	0.5	160°	--	--	0.5	330°
1681	Restoration Point, 0.6 mile ESE of		47° 34.85'	122° 27.97'	---	−0 38	---	−0 06	0.3	0.3	--	--	0.5	135°	--	--	0.7	034°
	Rich Passage																	
1686	Approach, north of Blake Island		47° 33.67'	122° 30.06'	---	−0 17	---	+0 44	0.1	0.3	--	--	0.2	301°	--	--	0.9	071°
1691	East end		47° 34'	122° 32'	---	+0 37	---	+0 51	0.5	0.4	--	--	0.8	321°	--	--	1.1	143°
1696	Off Pleasant Beach		47° 35'	122° 32'	−0 14	−0 15	+0 36	+0 43	0.8	1.1	--	--	1.3	330°	--	--	2.8	132°
1701	West end		47° 35.40'	122° 33.73'	−0 44	−0 08	+0 46	+0 22	1.5	1.2	--	--	2.4	238°	--	--	3.1	055°
1706	Port Orchard, southwest of Waterman		47° 34'	122° 36'		Current weak and variable												
1711	Sinclair Inlet		47° 33.2'	122° 38.02'		Current weak and variable												
1716	Port Washington Narrows, south ent		47° 34'	122° 37'	−0 09	+0 13	+0 55	+1 08	0.6	0.7	--	--	1.0	326°	--	--	1.7	154°
1721	Port Washington Narrows, north ent <27>		47° 36.08'	122° 39.70'	−0 25	+0 19	+1 08	+1 15	1.4	0.8	--	--	2.2	330°	--	--	2.2	156°
1726	Blake Island, southwest of		47° 31.50'	122° 29.97'	−2 58	−2 37	−1 06	−0 25	0.2	0.2	--	--	0.3	131°	--	--	0.5	326°

Endnotes can be found at the end of table 2.

TABLE 2 – CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	Meter Depth	POSITION Latitude	POSITION Longitude	TIME DIFFERENCES Min. before Flood	TIME DIFFERENCES Flood	TIME DIFFERENCES Min. before Ebb	TIME DIFFERENCES Ebb	SPEED RATIOS Flood	SPEED RATIOS Ebb	AVERAGE SPEEDS AND DIRECTIONS Minimum before Flood knots	Dir.	Maximum Flood knots	Dir.	Minimum before Ebb knots	Dir.	Maximum Ebb knots	Dir.
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	PUGET SOUND–cont. Time meridian, 120° W						on The Narrows, p.56											
1731	Colvos Passage <29>		– – –	– – –	– – –	– – –	– – –	+0 49	– –	0.4	– –	– –	– –	– –	– –	– –	1.1	016°
1736	East Passage		– – –	– – –	Current weak and variable													
1741	Quartermaster Harbor entrance		47° 21.18'	122° 28.85'	– – –	–0 31	– – –	–0 09	0.1	0.1	– –	– –	0.4	349°	– –	– –	0.4	167°
1746	Commencement Bay		– – –	– – –	Current weak and variable													
1751	Dalco Passage <30>		47° 19.50'	122° 31.45'	– – –	–0 11	– – –	– – –	0.4	– –	– –	– –	1.3	290°	– –	– –	– –	– –
1756	Gig Harbor entrance		47° 19.55'	122° 34.48'	–0 39	–0 57	–0 46	+0 11	0.3	0.4	– –	– –	0.9	016°	– –	– –	1.2	176°
	The Narrows																	
1761	THE NARROWS, north end (midstream)		47° 18.37'	122° 32.98'		*Daily predictions*					– –	– –	3.2	136°	– –	– –	2.8	334°
1766	North End (east side) <31>		47° 18.50'	122° 32.50'	– – –	– – –	– – –	+0 23	– –	1.4	– –	– –	– –	– –	– –	– –	3.8	340°
1771	North End (west side) <32>		47° 18.27'	122° 33.42'	– – –	+0 08	+0 05	–1 28	0.9	0.4	– –	– –	3.0	143°	– –	– –	1.1	324°
1776	0.1 mile east of Point Evans <33>		47° 17.15'	122° 32.67'	–0 06	–0 06	–0 28	+0 02	1.3	1.2	– –	– –	4.3	201°	– –	– –	3.4	023°
1781	South end (midstream) <34>		47° 15.65'	122° 33.50'	–0 05	+0 04	–0 16	–0 05	1.2	1.1	– –	– –	3.8	218°	– –	– –	3.1	022°
1786	Hale Passage, east end <31>		47° 14.78'	122° 35.85'	– – –	– – –	– – –	–2 44	– –	0.3	– –	– –	– –	– –	– –	– –	0.7	093°
1791	Hale Passage, west end		47° 16.67'	122° 39.73'	+0 00	–1 12	–2 20	–1 00	0.4	0.6	– –	– –	1.4	299°	– –	– –	1.8	119°
1796	Carr Inlet		– – –	– – –	Current weak and variable													
1801	Gibson Point, 0.8 mile east of		47° 13.08'	122° 35.37'	+0 28	+0 43	+0 08	+0 15	0.7	0.6	– –	– –	2.1	203°	– –	– –	1.8	029°
1806	Cormorant Passage <35>		47° 09.22'	122° 37.78'	– – –	– – –	– – –	+2 06	– –	0.3	– –	– –	– –	– –	– –	– –	0.7	026°
1811	Nisqually Reach, E of Sandy Point <36>		47° 08.93'	122° 39.50'	– – –	– – –	– – –	+1 17	– –	0.3	– –	– –	– –	– –	– –	– –	0.8	036°
1816	Nisqually Reach		47° 07'	122° 42'	+0 26	+0 24	+0 20	+0 31	0.3	0.4	– –	– –	1.1	259°	– –	– –	1.1	044°
1821	Balch Passage		47° 11.25'	122° 41.83'	–0 09	–1 07	–0 40	–0 40	0.4	0.8	– –	– –	1.1	296°	– –	– –	2.2	107°
1826	Pitt Passage, east of Pitt Island		47° 13.42'	122° 42.95'	–0 55	–1 16	–1 43	–1 24	0.3	0.5	– –	– –	0.9	204°	– –	– –	1.4	028°
1831	Drayton Passage <31>		47° 10.35'	122° 44.50'	– – –	– – –	– – –	–1 44	– –	0.1	– –	– –	– –	– –	– –	– –	0.4	030°
1836	Devils Head, west of <38>		47° 09.63'	122° 47.38'	– – –	– – –	– – –	+0 22	– –	0.2	– –	– –	– –	– –	– –	– –	0.6	158°
1841	Dana Passage		47° 09.80'	122° 52.07'	+0 17	–0 09	–0 06	–0 12	0.5	0.8	– –	– –	1.5	249°	– –	– –	2.2	076°
1846	Budd Inlet entrance		47° 08.37'	122° 55.03'	– – –	–0 42	– – –	–0 19	0.2	0.1	– –	– –	0.7	236°	– –	– –	0.4	031°
1851	Olympia, Budd Inlet		47° 05'	122° 55'	Current weak and variable													
1856	Eld Inlet entrance		47° 08.78'	122° 56.00'	–0 04	+0 09	–0 36	–0 10	0.3	0.2	– –	– –	0.9	224°	– –	– –	0.6	028°
1861	Unsal Point, 0.3 mile south of <31>		47° 09.57'	122° 53.68'	– – –	– – –	– – –	–1 04	– –	0.4	– –	– –	– –	– –	– –	– –	1.2	137°
1866	Peale Passage, south end		47° 10.50'	122° 53.23'	– – –	–0 09	– – –	–0 28	0.1	0.1	– –	– –	0.4	341°	– –	– –	0.4	173°
1871	Peale Passage, north end		47° 13.35'	122° 55.22'	–0 14	–0 23	–0 56	–0 30	0.2	0.4	– –	– –	0.5	319°	– –	– –	1.2	145°
1876	Squaxin Passage, north of Hunter Point		47° 10.62'	122° 55.15'	–0 42	–0 32	–0 33	–0 45	0.4	0.4	– –	– –	1.4	286°	– –	– –	1.2	121°
1881	Totten Inlet entrance		47° 11.33'	122° 56.70'	–0 19	+0 02	–0 25	–0 09	0.5	0.4	– –	– –	1.7	243°	– –	– –	1.0	054°
1886	Hammersley Inlet, 0.8 mile east of Libby Point		47° 12.15'	122° 58.47'	+1 00	+0 37	+0 05	+1 06	0.7	0.9	– –	– –	2.3	283°	– –	– –	2.4	102°
1891	Hammersley Inlet, west of Skookum Point		47° 12.42'	123° 02.37'	+1 14	+1 29	+0 57	+1 04	0.5	0.6	– –	– –	1.7	287°	– –	– –	1.6	101°
1896	Pickering Passage, south end		47° 13.17'	122° 56.08'	+1 05	+1 06	+0 21	+0 53	0.4	0.5	– –	– –	1.3	190°	– –	– –	1.3	013°
1901	Pickering Passage, off Graham Point		47° 14.90'	122° 55.53'	+1 17	+1 03	+0 24	+1 20	0.3	0.5	– –	– –	1.1	199°	– –	– –	1.3	034°
1906	Pickering Passage, north end		47° 18.35'	122° 51.05'	+1 24	+1 03	+1 11	+1 33	0.2	0.2	– –	– –	0.6	250°	– –	– –	0.6	067°
1911	Case Inlet, 1 mile SE of McMicken Island		47° 14.30'	122° 50.62'	Current weak and variable													
	POSSESSION SOUND–SKAGIT BAY						on Admiralty Inlet, p.52 <40>											
1916	Possession Sound		– – –	– – –	Current weak and variable													
1921	Port Susan		48° 06'	122° 22'	Current weak and variable													
1926	Saratoga Passage		– – –	– – –	Current weak and variable													
1931	Skagit Bay, 1 mile north of Rocky Point		48° 16'	122° 32'	– – –	+0 56	– – –	+1 47	0.4	0.4	– –	– –	0.6	060°	– –	– –	1.0	236°
							on Deception Pass, p.60											
1936	Skagit Bay, 1 mi. S of Goat Island <41>		48° 20.67'	122° 32.62'	–1 07	–1 26	–0 53	–0 53	0.3	0.2	– –	– –	1.8	139°	– –	– –	1.4	312°
1941	Skagit Bay, channel SW of Hope Island		48° 23.58'	122° 34.80'	–0 20	–0 40	–0 08	–0 15	0.4	0.3	– –	– –	2.3	165°	– –	– –	2.0	344°
	ROSARIO STRAIT <40>																	
1946	Yokeko Point, Deception Pass		48° 24.77'	122° 36.82'	+0 04	–0 24	–0 25	+0 17	0.4	0.4	– –	– –	2.1	064°	– –	– –	2.7	222°
1951	DECEPTION PASS, (Narrows)		48° 24.37'	122° 38.58'		*Daily predictions*					– –	– –	5.2	090°	– –	– –	6.6	270°

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No.	PLACE	Meter Depth	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Latitude	Longitude	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum Flood		Minimum before Ebb		Maximum Ebb	
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	ROSARIO STRAIT <40>–cont. Time meridian, 120° W				on Rosario Strait, p.64 <40>													
1956	Deception Island, 1.0 mile west of		48° 24.22'	122° 41.85'	– – –	+1 14	– – –	–1 23	0.6	0.5	– –	– –	0.6	035°	– –	– –	1.0	210°
1961	Iceberg Point, 2.1 miles SSW of		48° 23'	122° 55'	–0 34	–0 05	+1 21	–0 10	1.0	0.4	– –	– –	1.1	010°	– –	– –	0.8	260°
1966	Colville Island, 1 mile SSE of		48° 24'	122° 49'	+0 19	+0 31	+0 46	+0 07	1.0	1.2	– –	– –	1.1	055°	– –	– –	2.3	235°
1971	Colville Island, 1.4 miles east of		48° 25'	122° 47'	+0 03	+0 14	+0 17	–0 14	1.4	1.0	– –	– –	1.6	055°	– –	– –	1.9	215°
1976	Deception Island, 2.7 miles west of		48° 24.75'	122° 44.37'	+1 08	+0 50	+0 38	–0 34	0.8	0.7	– –	– –	0.9	015°	– –	– –	1.3	190°
1981	W Point, Whidbey I., 1.8 mi. SW of <9>		48° 23'	122° 42'	– – –	+0 46	– – –	–2 23	0.6	0.5	– –	– –	0.6	005°	– –	– –	1.0	207°
1986	Deception Island, 1.3 miles NW of		48° 25.18'	122° 41.9'	– – –	+0 04	– – –	–2 29	1.2	0.6	– –	– –	1.3	017°	– –	– –	1.1	161°
1991	ROSARIO STRAIT		48° 27.50'	122° 47.00'		*Daily predictions*					– –	– –	1.1	335°	– –	– –	1.9	175°
1996	Lopez Pass		48° 28.78'	122° 49.12'	–1 13	–1 33	–0 39	–1 16	1.4	1.0	– –	– –	1.6	275°	– –	– –	1.9	085°
2001	Burrows Bay, 0.5 mile east of Allan I		48° 27.77'	122° 40.97'	–3 01	–0 48	+0 22	–0 43	0.9	0.2	– –	– –	1.0	022°	– –	– –	0.4	209°
2006	Burrows I.–Allan I., Passage between		48° 28.30'	122° 41.98'	–2 05	–0 34	+0 09	–0 57	2.0	0.7	– –	– –	2.2	304°	– –	– –	1.4	096°
2011	Burrows Island Light, 0.8 miles WNW of		48° 29'	122° 44'	+0 29	+0 30	+0 13	+0 16	1.0	1.1	– –	– –	1.1	015°	– –	– –	2.1	200°
2016	Fidalgo Head–Burrows Island, between		48° 29.33'	122° 42.20'	– – –	–1 03	–0 32	–1 57	1.6	0.5	– –	– –	1.8	270°	– –	– –	0.9	090°
2021	Green Point, 0.8 mile northwest of		48° 30.28'	122° 42.37'	–0 55	–0 30	–0 08	–1 02	1.8	1.0	– –	– –	2.0	020°	– –	– –	1.9	190°
2026	Shannon Point, 2.0 miles west of		48° 30.63'	122° 43.83'	–0 19	+0 49	+0 50	–0 16	1.2	1.0	– –	– –	1.4	005°	– –	– –	1.8	190°
2031	Fauntleroy Point Light, 0.8 mile ESE of		48° 31.20'	122° 46.18'	+0 08	+0 16	–1 10	–0 33	1.1	0.7	– –	– –	1.2	310°	– –	– –	1.4	125°
2036	Thatcher Pass		48° 31.65'	122° 48.18'	+0 43	+1 01	+1 26	+0 51	0.4	0.5	– –	– –	0.4	300°	– –	– –	0.9	075°
2041	Frost–Willow Island, between		48° 32.35'	122° 49.85'	+0 46	+1 14	+0 19	+0 29	0.6	0.4	– –	– –	0.6	010°	– –	– –	0.8	126°
2046	Strawberry Island, 0.8 mile west of		48° 33.67'	122° 45.25'	+0 43	+0 46	+0 37	+0 30	1.4	1.4	– –	– –	1.5	020°	– –	– –	2.6	190°
2051	Peavine Pass, west entrance		48° 35.22'	122° 49.20'	–0 42	–0 41	–0 26	–0 52	1.6	1.2	– –	– –	1.7	055°	– –	– –	2.2	285°
2056	Obstruction Pass Light, 0.4 mile NW of		48° 36.22'	122° 48.80'	–0 59	–0 44	–0 38	–0 49	1.2	0.5	– –	– –	1.3	100°	– –	– –	1.0	270°
2061	Peapod Rocks Light, 1.2 miles south of		48° 37.33'	122° 44.83'	+0 08	+1 12	+0 49	–0 15	1.2	1.0	– –	– –	1.3	030°	– –	– –	1.9	215°
2066	Barnes Island, 0.8 mile southwest of		48° 41.15'	122° 47.33'	+0 37	+1 20	–0 07	+0 08	0.6	0.5	– –	– –	0.6	315°	– –	– –	0.9	140°
2071	Raccoon Point, 0.6 mile NNE of		48° 42.38'	122° 49.75'	–0 36	–0 45	–1 41	–0 20	0.6	0.4	– –	– –	0.6	286°	– –	– –	0.8	101°
2076	Parker Reef Light, 0.5 mile north of		48° 43.98'	122° 53.40'	+1 31	+1 02	+1 14	+1 02	1.0	0.8	– –	– –	1.1	067°	– –	– –	1.5	278°
2081	Matia Island, 0.8 mile west of		48° 44.93'	122° 51.95'	+0 22	+0 26	–0 26	+0 14	1.1	0.8	– –	– –	1.2	350°	– –	– –	1.5	206°
2086	Guemes Channel, west entrance		48° 31.27'	122° 39.13'	–0 21	–0 33	–1 24	–0 38	0.8	1.1	– –	– –	0.9	095°	– –	– –	2.1	255°
2091	Padilla Bay, 0.8 mi. NW of March Pt <42>		48° 31'	122° 35'	– – –	– – –	– – –	– – –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
2096	Guemes Island, 0.5 mile east of		48° 32'	122° 34'	Current weak and variable													
2101	Huckleberry Island, 0.5 mile north of		48° 32.75'	122° 33.98'	–3 17	+0 18	+0 36	–1 10	0.7	0.3	– –	– –	0.8	006°	– –	– –	0.6	253°
2106	William Point Light, 0.8 mile W of		48° 35.05'	122° 34.77'	– – –	+0 36	– – –	+0 23	0.1	0.2	– –	– –	0.1	– –	– –	– –	0.3	230°
2111	Eliza Island, 0.5 mile southeast of		48° 39'	122° 34'	Current weak and variable													
2116	Bellingham Channel, off Cypress I. Light		48° 33.62'	122° 39.82'	–0 48	+0 08	–0 49	–0 51	1.1	1.2	– –	– –	1.2	045°	– –	– –	2.2	185°
2121	Towhead Island, 0.4 mile east of		48° 36.73'	122° 42.13'	–1 55	+1 13	+2 43	+0 01	0.7	0.2	– –	– –	0.8	315°	– –	– –	0.4	125°
2126	Sinclair Island Light, 0.6 mile SE of		48° 36.17'	122° 38.92'	+0 16	+0 48	+0 22	+0 18	1.3	0.8	– –	– –	1.4	045°	– –	– –	1.6	210°
2131	Sinclair Island, 1 mile northeast of <43>		48° 38.67'	122° 39.50'	– – –	– – –	– – –	+1 23	– –	0.4	– –	– –	– –	– –	– –	– –	0.8	110°
2136	Lawrence Point, Orcas I., 1.3 mi. NE of		48° 40.70'	122° 42.87'	+0 56	+0 58	+0 59	+0 55	1.2	0.8	– –	– –	1.4	345°	– –	– –	1.4	145°
2141	Hale Passage, 0.5 mile SE of Lummi Point		48° 43.88'	122° 40.67'	–0 43	+0 05	+0 20	–0 11	1.0	0.5	– –	– –	1.1	350°	– –	– –	1.0	145°
2146	Clark Island, 1.6 miles north of		48° 43.88'	122° 46.40'	+0 47	+1 14	+0 44	–0 02	0.6	0.6	– –	– –	0.7	335°	– –	– –	1.1	150°
2151	Matia Island, 1.4 miles north of		48° 46.33'	122° 50.97'	+0 02	+0 57	+0 59	+0 08	0.6	0.3	– –	– –	0.6	330°	– –	– –	0.6	190°
2156	Parker Reef Light, 1 mile north of		48° 44.52'	122° 53.67'	– – –	+1 38	– – –	–0 52	0.9	0.4	– –	– –	1.0	065°	– –	– –	0.7	265°
2161	Puffin Island Light, 4.8 miles north of		48° 49.33'	122° 48.50'	+0 18	+1 30	+0 55	+0 11	0.4	0.4	– –	– –	0.5	325°	– –	– –	0.8	210°
2166	Neptune Beach, 1.2 miles NW of <44>		48° 49.47'	122° 43.58'	– – –	+1 43	– – –	– – –	0.4	– –	– –	– –	0.4	359°	– –	– –	– –	– –
2171	Cherry Point, 1.5 miles SE of		48° 50.70'	122° 43.50'	– – –	+1 04	– – –	+0 13	0.3	0.2	– –	– –	0.3	326°	– –	– –	0.3	116°
	SAN JUAN CHANNEL				on San Juan Channel, p.68													
2176	Cattle Point, 1.2 miles southeast of		48° 26.03'	122° 56.82'	+0 11	–0 20	+0 34	–0 01	0.3	0.9	– –	– –	0.8	340°	– –	– –	2.4	195°
2181	SAN JUAN CHANNEL (south entrance)		48° 27.68'	122° 57.05'		*Daily predictions*					– –	– –	2.6	010°	– –	– –	2.6	180°
2186	Kings Point, Lopez Island, 1 mile NNW of		48° 29.00'	122° 57.35'	+0 51	–0 07	+0 27	+0 36	0.6	0.5	– –	– –	1.6	020°	– –	– –	1.3	185°
2191	Pear Point, 1.1 miles east of		48° 30.68'	122° 57.17'	+0 40	+1 09	–0 10	+1 01	0.4	0.5	– –	– –	1.0	359°	– –	– –	1.4	203°
2196	Turn Rock Light, 1.9 miles northwest of		48° 33.40'	122° 59.90'	+1 19	+1 22	+0 20	–0 01	0.4	0.5	– –	– –	0.9	330°	– –	– –	1.3	135°
2201	Crane Island, south of, Wasp Passage		48° 35.37'	122° 59.92'	–0 10	+0 35	+0 29	+0 07	0.2	0.1	– –	– –	0.4	288°	– –	– –	0.3	075°
2206	Wasp Passage Light, 0.5 mile WSW of		48° 35.53'	122° 59.37'	+0 19	+0 28	+0 15	–0 15	0.5	0.4	– –	– –	1.2	300°	– –	– –	1.1	110°
2211	Spring Passage, south entrance		48° 36.68'	123° 02.05'	+0 04	–1 09	–0 43	–0 13	0.4	0.4	– –	– –	0.9	010°	– –	– –	1.0	150°
2216	Limestone Point, Spieden Channel		48° 37.58'	123° 06.55'	+0 23	–0 12	–1 00	+0 26	0.7	1.2	– –	– –	1.8	085°	– –	– –	3.2	283°

Endnotes can be found at the end of table 2.

TABLE 2 – CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	Meter Depth	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Latitude	Longitude	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum Flood		Minimum before Ebb		Maximum Ebb	
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	SAN JUAN CHANNEL–cont. Time meridian, 120° W				on San Juan Channel, p.68													
2221	Point Disney, 1.6 miles east of		48° 40.37'	123° 00.37'	+2 36	+1 31	+0 48	+1 51	0.2	0.8	--	--	0.5	020°	--	--	2.2	230°
2226	Harney Channel		48° 35.45'	122° 55.23'	+0 15	+0 21	+0 11	+0 05	0.2	0.3	--	--	0.6	250°	--	--	0.7	120°
2231	East Sound entrance		48° 35.22'	122° 51.42'	Current weak and variable													
2236	East Sound, 0.2 mile SW of Rosario Point		48° 38.65'	122° 52.88'	Current weak and variable													
	HARO STRAIT and BOUNDARY PASS				on Admiralty Inlet, p.52 <40>													
2241	Discovery Island, 3.3 miles northeast of		48° 27'	123° 09'	+1 16	+1 03	+0 59	+0 59	0.8	0.6	--	--	1.3	345°	--	--	1.6	170°
2246	Kellett Bluff, west of		48° 35.35'	123° 13.50'	+0 01	+0 20	+0 36	+0 20	1.0	0.8	--	--	1.6	000°	--	--	2.1	170°
2251	Turn Point, Boundary Pass		48° 41.72'	123° 14.13'	+0 26	+0 51	+1 18	+0 26	0.4	0.6	--	--	0.7	080°	--	--	1.6	260°
2256	Skipjack Island, 2 miles NNE of		48° 46'	123° 01'	+0 26	+0 34	+0 49	−0 02	1.6	1.4	0.5	295°	1.7	041°	0.2	120°	2.7	203°
					on San Juan Channel, p.68													
2261	Johns Island, 0.8 mile north of		48° 41'	123° 09'	−0 15	−0 31	+0 06	+0 49	0.2	0.2	--	--	0.6	090°	--	--	0.6	350°
2266	Waldron Island, 1.7 miles west of		48° 42.25'	123° 06.52'	+0 37	+0 36	+1 10	+1 05	0.5	0.4	--	--	1.4	040°	--	--	1.2	260°
2271	Skipjack Island, 1.5 miles northwest of		48° 44.97'	123° 03.65'	+1 17	+1 19	+1 08	+1 12	0.3	0.5	--	--	0.8	035°	--	--	1.4	290°
2276	Point Hammond, 1.1 miles northwest of		48° 43.92'	123° 01.52'	+1 11	+1 05	+0 27	+1 13	0.2	0.9	--	--	0.6	055°	--	--	2.4	255°
					on Rosario Strait, p.64 <40>													
2281	Alden Point, Patos Island, 2 miles S of		48° 45.47'	122° 58.82'	+0 09	−0 26	+0 15	−0 53	0.9	1.1	--	--	1.0	025°	--	--	2.1	185°
2286	Patos Island Light, 1.4 miles west of		48° 47.33'	123° 00.20'	+0 19	+0 30	+0 40	−0 02	0.8	1.0	--	--	0.8	065°	--	--	2.0	180°
2291	Toe Point, Patos Island, 0.5 mile S of		48° 46.70'	122° 56.45'	−2 31	+0 49	+0 51	−0 47	1.4	0.8	--	--	1.6	045°	--	--	1.6	270°
	GEORGIA STRAIT				on Admiralty Inlet, p.52 <40>													
2296	Drayton Harbor Entrance		48° 59.45'	122° 46.07'	−0 27	−0 11	+0 48	+0 13	0.6	0.4	--	--	1.0	133°	--	--	1.0	313°
					on Active Pass, p.72													
2301	Sucia I., 0.5 mile WNW of Lawson Bluff		48° 46'	122° 56'	+0 54	+0 26	+0 53	+1 15	0.2	0.4	--	--	0.8	025°	--	--	1.4	205°
2306	Sansum Narrows		48° 47.00'	123° 33.37'	+0 24	+0 24	−0 37	−0 37	0.5	0.5	--	--	1.7	000°	--	--	1.7	180°
2311	ACTIVE PASS		48° 52.78'	123° 17.75'	*Daily predictions*						--	--	3.3	045°	--	--	3.7	225°
2316	Porlier Pass		49° 00.65'	123° 35.50'	−0 20	−0 24	−0 28	−0 24	1.3	1.3	--	--	4.3	045°	--	--	4.7	225°
2321	Gabriola Pass		49° 07.70'	123° 42.15'	−0 35	−0 33	−0 32	−0 33	1.1	1.1	--	--	4.0	090°	--	--	4.0	270°
2326	Dodd Narrows		49° 08'	123° 49'	−0 45	−0 45	−0 45	−0 45	1.4	1.4	--	--	4.8	315°	--	--	5.2	135°
					on Burrard Inlet, p.76													
2331	BURRARD INLET, First Narrows		49° 19'	123° 08'	*Daily predictions*						--	--	3.7	135°	--	--	3.7	315°
2336	Second Narrows, Burrard Inlet		49° 18'	123° 01'	−0 18	−0 11	−0 04	−0 11	0.9	0.9	--	--	3.3	090°	--	--	3.3	270°
2341	Seechelt Rapids		49° 45'	123° 55'	+1 35	+1 24	+1 12	+1 24	1.8	1.8	--	--	6.5	150°	--	--	6.5	330°
					on Seymour Narrows, p.80													
2346	Stevens Pass		49° 31'	124° 31'	+0 15	+0 15	+0 15	+0 15	0.2	0.2	--	--	2.2	310°	--	--	2.2	130°
2351	Cape Lazo		49° 43'	124° 48'	+0 15	+0 15	+0 15	+0 15	0.2	0.2	--	--	2.0	355°	--	--	2.0	175°
2356	Kuhushan Point		49° 53'	125° 04'	+0 10	+0 10	+0 10	+0 10	0.2	0.2	--	--	2.0	325°	--	--	2.0	145°
2361	Shelter Point		49° 57'	125° 10'	+0 10	+0 10	+0 10	+0 10	0.2	0.2	--	--	2.0	145°	--	--	2.0	325°

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TABLE 2 – CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	Meter Depth	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Latitude	Longitude	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum Flood		Minimum before Ebb		Maximum Ebb	
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	DISCOVERY PASSAGE Time meridian, 120° W				on Seymour Narrows, p.80													
2366	Off Cape Mudge		50° 00'	125° 14'	+0 15	+0 15	+0 15	+0 15	0.5	0.5	--	--	5.0	165°	--	--	5.0	345°
2371	Orange Point		50° 04'	125° 17'	+0 10	+0 10	+0 10	+0 10	0.5	0.5	--	--	5.0	145°	--	--	5.0	325°
2376	Race Point		50° 07'	125° 20'	+0 05	+0 05	+0 05	+0 05	0.7	0.7	--	--	6.5	125°	--	--	6.5	305°
2381	SEYMOUR NARROWS		50° 08'	125° 21'		*Daily predictions*					--	--	9.2	180°	--	--	9.8	000°
2386	Separation Head		50° 11'	125° 22'	-0 05	-0 05	-0 05	-0 05	0.4	0.4	--	--	3.4	170°	--	--	3.6	350°
2391	Moriarty Point		50° 16'	125° 25'	-0 10	-0 10	-0 10	-0 10	0.3	0.3	--	--	2.5	170°	--	--	2.5	350°
2396	Chatham Point		50° 20'	125° 27'	-0 20	-0 20	-0 20	-0 20	0.3	0.3	--	--	2.5	165°	--	--	2.5	345°
	JOHNSTONE STRAIT																	
2401	Ripple Point		50° 22'	125° 35'	-0 40	-0 40	-0 40	-0 40	0.4	0.4	--	--	3.4	105°	--	--	3.6	285°
2406	Camp Point		50° 24'	125° 51'	-1 00	-1 00	-1 00	-1 00	0.4	0.4	--	--	3.4	090°	--	--	3.6	270°
2411	Race Passage <45>		50° 23'	125° 53'	-0 58	-0 58	-0 58	-0 58	0.5	0.5	--	--	4.8	110°	--	--	5.2	290°
2416	Current Passage		50° 25'	125° 54'	-1 00	-1 00	-1 00	-1 00	0.5	0.5	--	--	4.8	120°	--	--	5.2	300°
2421	Ransom Point		50° 28'	126° 06'	-1 00	-1 00	-1 00	-1 00	0.3	0.3	--	--	2.5	110°	--	--	2.5	290°
2426	Off Broken Island		50° 30'	126° 17'	-1 00	-1 00	-1 00	-1 00	0.3	0.3	--	--	2.5	100°	--	--	2.5	280°
2431	Robson Bight (off)		50° 30'	126° 35'	-1 15	-1 15	-1 15	-1 15	0.3	0.3	--	--	2.5	100°	--	--	2.5	280°
2436	Ella Point, Weynton Passage		50° 33'	126° 48'	-1 25	-1 25	-1 25	-1 25	0.4	0.4	--	--	3.9	105°	--	--	4.1	285°
	BROUGHTON STRAIT																	
2441	Pearse Passage, Cormorant Island		50° 35'	126° 54'	-1 30	-1 30	-1 30	-1 30	0.4	0.4	--	--	3.9	165°	--	--	4.1	345°
2446	Leonard Point, Cormorant Island		50° 36'	126° 58'	-1 35	-1 35	-1 35	-1 35	0.3	0.3	--	--	2.5	090°	--	--	2.5	270°
2451	Ledge Point		50° 36'	127° 04'	-1 40	-1 40	-1 40	-1 40	0.3	0.3	--	--	2.5	110°	--	--	2.5	290°
2456	Pulteney Point		50° 37'	127° 10'	-1 45	-1 45	-1 45	-1 45	0.3	0.3	--	--	2.5	120°	--	--	2.5	300°
	QUEEN CHARLOTTE STRAIT																	
2461	False Head, 2 miles north from		50° 41'	127° 17'	-2 20	-2 20	-2 20	-2 20	0.3	0.3	--	--	2.5	130°	--	--	2.5	310°
2466	Dillon Point, 1 mile north		50° 46'	127° 25'	-2 30	-2 30	-2 30	-2 30	0.3	0.3	--	--	2.5	110°	--	--	2.5	290°
2471	Gordon Channel		50° 55'	127° 40'	-2 40	-2 40	-2 40	-2 40	0.3	0.3	--	--	2.5	125°	--	--	2.5	305°
	GOLETAS CHANNEL																	
2476	Duval Point		50° 48'	127° 30'	-3 05	-3 05	-3 05	-3 05	0.3	0.3	--	--	2.5	110°	--	--	2.5	290°
2481	Boxer Point		50° 49'	127° 39'	-3 15	-3 15	-3 15	-3 15	0.3	0.3	--	--	2.5	110°	--	--	2.5	290°
2486	Lemon Point		50° 51'	127° 46'	-3 20	-3 20	-3 20	-3 20	0.3	0.3	--	--	2.5	110°	--	--	2.5	290°
2491	Heath Point		50° 53'	127° 53'	-3 25	-3 25	-3 25	-3 25	0.3	0.3	--	--	3.0	110°	--	--	3.0	290°
2496	Nawhitti Bar		50° 54'	128° 00'	-4 30	-4 38	-4 47	-4 38	0.4	0.4	--	--	4.0	100°	--	--	4.0	280°
	PASSAGES NORTH OF VANCOUVER ISLAND																	
2501	Surge Narrows, Okisollo Channel		50° 14'	125° 10'	-0 45	-0 45	-0 45	-0 45	0.7	0.7	--	--	7.0	140°	--	--	7.0	320°
2506	Hole In The Wall, Okisollo Channel		50° 18'	125° 13'	-0 55	-0 55	-0 50	-0 55	0.8	0.8	--	--	7.5	050°	--	--	7.5	230°
2511	Rapids, near Barnes Bay, Okisollo Chan		50° 19'	125° 16'	-0 50	-0 55	-0 55	-0 55	0.7	0.7	--	--	6.5	072°	--	--	6.5	252°
2516	Arran Rapids, north of Stuart Island		50° 25'	125° 08'	-0 45	-0 45	-0 45	-0 45	0.7	0.7	--	--	7.0	065°	--	--	7.0	245°
2521	Yuculta Rapids, SW of Stuart Island		50° 21'	125° 09'	-0 40	-0 40	-0 40	-0 40	0.5	0.5	--	--	5.0	145°	--	--	5.0	325°
2526	Godwin Point, Cordero Island		50° 28'	125° 25'	-0 55	-0 55	-0 55	-0 55	0.2	0.2	--	--	2.2	050°	--	--	2.2	230°
2531	Shell Point, Blind Channel		50° 26'	125° 31'	-1 10	-1 10	-1 10	-1 10	0.5	0.5	--	--	5.0	355°	--	--	5.0	175°
2536	Green Point Rapids, Cordero Channel		50° 27'	125° 31'	-1 25	-1 30	-1 35	-1 30	0.5	0.5	--	--	5.0	130°	--	--	5.0	310°
2541	Whirlpool Rapids, Wellbore Channel		50° 27'	125° 47'	-1 50	-1 50	-1 50	-1 50	0.6	0.6	--	--	6.0	185°	--	--	6.0	005°
2546	Shaw Point, Sunderland Channel		50° 28'	125° 56'	-1 05	-1 05	-1 05	-1 05	0.2	0.2	--	--	1.5	060°	--	--	1.5	240°
2551	Root Point, Chatham Channel		50° 35'	126° 12'	-1 05	-1 05	-1 05	-1 05	0.6	0.6	--	--	5.5	110°	--	--	5.5	290°
2556	Littleton Point, Chatham Channel		50° 37'	126° 17'	-1 05	-1 05	-1 05	-1 05	0.4	0.4	--	--	3.5	130°	--	--	3.5	310°
2561	Ripple Bluff, Knight Inlet		50° 38'	126° 31'	-1 15	-1 15	-1 15	-1 15	0.3	0.3	--	--	2.5	105°	--	--	2.5	285°
2566	Owl Island, main ent. to Knight Inlet		50° 38'	126° 41'	-1 20	-1 20	-1 20	-1 20	0.3	0.3	--	--	2.5	120°	--	--	2.5	300°

Endnotes can be found at the end of table 2.

TABLE 2 – CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	Meter Depth	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Latitude	Longitude	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum Flood		Minimum before Ebb		Maximum Ebb	
		ft	North	West	h m	h m	h m	h m			knots	Dir.	knots	Dir.	knots	Dir.	knots	Dir.
	HECATE STRAIT and CHATHAM SOUND Time meridian, 120° W				on Wrangell Narrows, p.92													
2571	Meyers Narrows, Meyers Passage		52° 37'	128° 39'	−1 00	−0 56	−0 54	−0 35	0.9	1.1	--	--	2.2	090°	--	--	2.2	270°
2576	Otter Passage, Nepean Sound		53° 08'	129° 45'	−0 19	−0 22	−0 26	−0 01	--	2.1	--	--	--	050°	--	--	4.4	230°
2581	Grenville Channel (narrow portion) <46>		53° 36'	129° 41'	+1 23	+1 17	+1 09	+1 38	0.4	1.6	--	--	1.4	320°	--	--	3.4	140°
2586	Skeena River, Middle Passage		54° 06'	130° 13'	+1 39	+1 31	+1 21	+1 52	0.7	1.1	--	--	2.2	120°	--	--	2.2	310°
2591	Casey Point, Prince Rupert Harbor		54° 16'	130° 22'	+1 37	+1 29	+1 19	+1 50	--	1.0	--	--	--	340°	--	--	2.1	160°
2596	Tuck Narrows, Prince Rupert Harbor		54° 24'	130° 15'	+0 24	+0 28	+0 30	+0 49	1.6	2.3	--	--	5.2	325°	--	--	4.8	145°
2601	Between Rose Spit and Overfall Shoal		54° 14'	131° 35'	+0 14	+0 18	+0 20	+0 39	0.9	1.3	--	--	2.8	145°	--	--	2.8	325°
	DIXON ENTRANCE																	
2606	Naden Harbor, Alexandria Narrows		54° 02.19'	132° 34.44'	+0 33	+0 30	+0 26	+0 51	0.4	0.9	--	--	1.3	205°	--	--	1.8	025°
2611	Masset Harbor, 5 miles Inside		54° 01'	132° 10'	+3 09	+2 59	+2 47	+3 20	1.3	2.1	--	--	4.0	145°	--	--	4.5	335°
	Time meridian, 135° W																	
2616	Cape Muzon, 4 miles south from		54° 36'	132° 41'	−0 39	−0 47	−0 57	−0 26	0.8	1.2	--	--	2.4	045°	--	--	2.4	225°
2621	Point Marsh, 5 miles south from		54° 38'	132° 18'	−0 39	−0 47	−0 57	−0 26	0.7	1.1	--	--	2.3	035°	--	--	2.3	215°
2626	Cape Chacon, south of	42d	54° 37.53'	132° 03.42'	−0 21	−2 44	−3 18	−0 53	0.1	0.7	0.3	185°	0.3	156°	0.2	186°	1.4	254°
	... do.	200d	54° 37.53'	132° 03.42'	−0 35	−1 20	−1 43	−0 55	0.3	0.6	--	--	0.8	076°	0.1	354°	1.2	261°
	... do.	357d	54° 37.53'	132° 03.42'	−0 53	−0 46	−1 01	−1 17	0.5	0.7	--	--	1.7	088°	0.3	184°	1.5	264°
2631	West Devil Rock, 2 miles north of		54° 42'	131° 36'	−0 34	−0 42	−0 52	−0 21	0.8	1.2	--	--	2.4	035°	--	--	2.4	215°
2636	Barren Island Light, 2 miles south from		54° 42'	131° 21'	−0 29	−0 37	−0 47	−0 16	0.7	1.1	--	--	2.3	040°	--	--	2.3	220°
	Time meridian, 120° W																	
2641	East Devil Rock, 1 mile north of		54° 42'	131° 05'	+0 31	+0 23	+0 13	+0 44	0.7	1.1	--	--	2.2	085°	--	--	2.2	265°
2646	Between Dundas Island and Cape Fox		54° 42'	130° 50'	+0 14	+0 18	+0 20	+0 39	0.6	1.4	--	--	2.0	090°	--	--	3.0	270°
2651	Tongass Islands, east of, Nakat Bay		54° 46.94'	130° 44.23'	−1 31	−2 40	−1 38	−1 31	0.3	0.6	--	--	0.8	326°	--	--	1.2	157°
2656	Boston Islands, 1 mile south from		54° 41'	130° 34'	−0 29	−0 37	−0 47	−0 16	0.7	1.1	--	--	2.0	085°	--	--	2.0	265°
2661	Portland Inlet, 2 miles S. of Wales Pt		54° 40'	130° 29'	+0 36	+0 28	+0 18	+0 49	0.8	1.2	--	--	2.4	040°	--	--	2.4	220°
	PEARSE CANAL																	
2666	Haystack Island, Tongass Passage		54° 43'	130° 37'	+0 31	+0 23	+0 13	+0 44	0.8	1.2	--	--	2.5	340°	--	--	2.5	160°
2671	Point Phipp		54° 47'	130° 38'	+0 31	+0 23	+0 13	+0 44	0.9	1.3	--	--	2.8	065°	--	--	2.8	245°
2676	Narrows		54° 50.08'	130° 29.13'	+0 34	+0 26	+0 31	+0 47	0.9	1.3	--	--	2.8	045°	--	--	2.8	225°
	Time meridian, 135° W																	
2681	Blaine Point		55° 02'	130° 13'	−0 19	−0 27	−0 37	−0 06	0.6	1.0	--	--	2.0	025°	--	--	2.0	205°
	PORTLAND CANAL Time meridian, 120° W																	
2686	Wales Point, 2 miles south from		54° 40'	130° 29'	+0 36	+0 28	+0 18	+0 49	0.8	1.2	--	--	2.4	040°	--	--	2.4	220°
2691	Cliff Point, 1 mile east from		54° 48'	130° 19'	+0 36	+0 28	+0 18	+0 49	0.7	1.1	--	--	2.2	045°	--	--	2.2	225°
2696	Flat Point , 1 mile east of		54° 55'	130° 10'	+0 41	+0 33	+0 23	+0 54	0.6	1.0	--	--	2.0	030°	--	--	2.0	210°
2701	Tree Point, 1 mile east of		55° 02'	130° 10'	+0 41	+0 33	+0 23	+0 54	0.6	0.9	--	--	1.8	345°	--	--	1.8	165°
2706	Dickens Point		55° 09'	130° 09'	+0 41	+0 33	+0 23	+0 54	0.5	0.7	--	--	1.5	020°	--	--	1.5	200°
2711	White Point		55° 34'	130° 07'	+0 46	+0 38	+0 28	+0 59	0.3	0.5	--	--	1.0	350°	--	--	1.0	170°
	Time meridian, 135° W																	
2716	Camp Point		55° 17'	129° 59'	−0 14	−0 22	−0 32	−0 01	0.4	0.6	--	--	1.3	000°	--	--	1.3	180°
2721	Miners Point		55° 43'	130° 09'	−0 09	−0 17	−0 27	+0 04	0.3	0.4	--	--	0.8	350°	--	--	0.8	170°
2726	Lion Point		55° 53'	130° 02'	−0 09	−0 17	−0 27	+0 04	0.2	0.2	--	--	0.5	025°	--	--	0.5	205°

Endnotes can be found at the end of table 2.

ENDNOTES

<1> It is reported that an eddy is usually encountered along the ends of the municipal piers which makes docking difficult.

<2> San Pedro Channel, 7 miles south of Los Angeles Harbor Breakwater. There are two periodic currents here both of which are rotary, turning clockwise, and rather weak. The tidal current has a speed at strength of about 0.2 knot. The other current, due apparently to daily land and sea breezes, has a period of 24 hours and an average speed of about 0.2 knot. The greatest speed during 5 months of observations was 1.5 knots. Currents greater than 1 knot occur infrequently.

<3> In Los Angeles and Long Beach Harbors, the tidal current is weak. Currents can exceed 1 knot in the outer harbor at San Pedro, under strong wind conditions. Also, it is reported that three minute surge waves are responsible for major ship movements and damage.

<4> Observations indicate ebb is very weak.

<5> Large current eddies which cause ships to sheer off course are reported near the foundation piers of Golden Gate Bridge and San Francisco—Oakland Bay Bridge.

<6> See "Coastal Tidal Currents," (Table of Contents).

<7> Current is somewhat rotary, turning clockwise.

<8> SLACK WATER TIME DIFFERENCES FOR PLACES ALONG SAN FRANCISCO PIERS:

STATION or LOCALITY	Latitude N	Longitude W	Beginning of flood h.	m.	ebb h.	m.
Time meridian, 120° W	on SAN FRANCISCO BAY ENTRANCE, p.8					
St. Francis Yacht Club breakwater....	37° 48.5'	122° 26.5'	–0	10	–1	50
Aquatic Park, 0.2 mile west of.....	37° 48.6'	122° 25.7'	–0	35	–2	05
Pier 37.....	37° 48.6'	122° 24.5'	–1	35	–2	20
Pier 29.....	37° 48.4'	122° 24.0'	–1	10	–2	20
Pier 7.....	37° 48.0'	122° 23.6'	–0	55	–2	05
Pier 14.....	37° 47.7'	122° 23.3'	–0	55	–3	00
Pier 26.....	37° 47.4'	122° 23.0'	–1	40	–1	50
Pier 38.....	37° 47.0'	122° 23.0'	–0	25	–2	25
Pier 50.....	37° 46.4'	122° 22.8'	–1	40	–2	20
Bethlehem Pier No. 8.....	37° 45.6'	122° 22.7'	–1	20	–1	55
Pier 90, 0.5 mile SE. of	37° 44.5'	122° 22.4'	–1	50	–2	05
Point Avisadero	37° 43.7'	122° 21.3'	–1	25	–0	40
Point Avisadero, 0.8 mile south of.....	37° 43.0'	122° 21.5'	–1	30	–3	25

<9> Current is somewhat rotary, turning counterclockwise.

<10> Current is somewhat rotary, turning counterclockwise. 4h 25m prior to computed maximum flood the current flows southward with a speed 0.6 of the flood speed at the reference station.

<11> Data do not apply during freshets.

<12> Data do not apply during freshets.

<13> Data approximate.

<14> See "Coastal Tidal Currents," (Table of Contents).

<15> The Columbia River bar can be very dangerous because of sudden and unpredictable current changes accompanied by breakers. It is reported that ebb currents on the north side of the bar attain speeds of 6 to 8 knots and that strong NW winds sometimes cause currents that set north in the area outside the jetties. In the entrance, the currents are variable and may reach a speed of more than 5 knots on the ebb while the flood speed seldom exceeds 4 knots. The tidal current in the river is always modified by the river discharge, sometimes to the extent that the flood current is indiscernible and the current ebbs continuously.

<16> Flood and minimum current data indeterminate.

<17> Observations indicate that the current ebbs continuously at this location. Data are given for the smallest and largest mean ebb values expected. The time differences and speed ratios should be applied to the predicted times of maximum ebb at the reference station.

<18> During period of observations (February) flood was weak, and current was ebbing most of the time with a speed of about 2 knots at times of maximum.

ENDNOTES

<19> Along the west coast of Vancouver Island the current is reported to set always northwestward. It is weakest during westerly winds and strongest with easterly winds, being about a knot in moderate weather.

<20> When predicted flood at Admiralty Inlet, Race Rocks, or Strait of Juan de Fuca Entrance is marked with an (*) the flood speed and the preceding and following slacks at stations referred to them cannot be predicted. The current at most of these stations, however, will be weak at such times. Exceptions are the stations whose speed ratios are footnote reference <27>

<21> Current is rotary, turning clockwise.

<22> Time of minimum before flood is indefinite.

<23> Observations indicate that current is weak with direction variable for the greater part of the tidal cycle. A maximum flood speed of 1 knot in a southerly direction has been observed.

<24> Time of minimum before ebb is indefinite.

<25> Slacks are indefinite. The flood current is weak and variable, possibly ebbing at times.

<26> Current ebbs continuously. Maximum ebb, +5h 15m; minimum ebb, –1h 20m.

<27> Flood speed at strength probably does not become less than a knot.

<28> Current is rotary and erratic. Speeds of 3 knots may be encountered.

<29> Current ebbs most of the time. Time difference is for maximum ebb only. Weak current, flood or ebb, usually occurs about 0.8 hour after maximum flood at The Narrows.

<30> Current floods most of the time. Time difference is for maximum flood only. Weak ebb or slack water usually occurs about 1 hour before maximum ebb at The Narrows.

<31> Current ebbs most of the time. Time difference is for maximum ebb only. Weak flood or slack water usually occurs about 1 1/2 hours before maximum flood at The Narrows.

<32> Current floods most of the time. Time of minimum before flood is indefinite.

<33> Close to the east shore the flood speed is reduced about 1/2 but the ebb speed is only slightly less than at Point Evans.

<34> On the west side the speed of the flood current is 0.6 that of midstream and the ebb begins about 1 hour and 15 minutes earlier. On the east side the current is about the same as in midstream.

<35> Current ebbs most of the time. Time difference is for maximum ebb only. Weak flood or slack water usually occurs about 1 hour after maximum flood at The Narrows.

<36> Current ebbs most of the time. Time difference is for maximum ebb only. Weak flood or slack water usually occurs about the time of maximum flood at the Narrows.

<38> Current ebbs most of the time. Time difference is for maximum ebb only. Weak flood or slack water usually occurs about 1/2 hour affer maximum flood at The Narrows.

<40> When predicted flood at Admiralty Inlet or Rosario Strait is marked with an (*) the flood speed and the preceding and following slacks at stations referred to them cannot be predicted. The current at most of these stations, however, will be weak at such times.

<41> Ebb current is irregular at times.

<42> Current is predominantly non–tidal, flowing in a northwesterly direction with a maximum speed of 1 knot.

<43> Current ebbs most of the time. Time difference is for maximum ebb only; slack times are indefinite and flood current is weak and variable.

<44> Time difference is for maximum flood only; slack times are indefinite and ebb current is too variable to be predicted.

<45> Dangerous eddy current and tide rips are reported to occur between Helmcken Island and Ripple Shoal around the time of ebb strength.

ENDNOTES

<46> On the flood, the streams coming from the sea through the north and south entrances meet off Evening Point (Lat. 53° 39' N) and separate on the falling tide about a mile farther northward.

<47> Observations indicate that current usually flows WNW, speed varying from zero to an average strength of 0.3 knot which occurs about 1 hour after time of maximum flood at Wrangell Narrows.

<48> Lewis Point to Guard Island—current too weak to be predicted.

<49> Observations indicate that current usually flows NW, speed varying from zero to an average strength of 1.2 knots which occurs about 45 minutes before time of maximum flood at Wrangell Narrows.

<50> Observations indicate that current usually flows NW, speed varying from zero to an average strength of 0.7 knot which occurs about 2 1/2 hours after time of maximum flood at Wrangell Narrows.

<51> Slacks occurs for a period of several hours before maximum current.

<52> Current usually flows WSW; speed varies from zero to an average of 1.1 knots occurring about 1h 05m earlier than time of maximum ebb at Wrangell Narrows.

<53> Slacks are indefinite. Flood current is too weak or variable to be predicted.

<54> Minimum before flood, 2h 41m before maximum flood; minimum before ebb, 3h 46m before maximum ebb.

<55> Lesser ebb, +0h 50m. The greater ebb may reach a maximum speed then decrease slightly for about 1 1/2 hours before increasing to a second maximum. These time differences are: 1st. maximum, –0h 42m; minimum, +0h 43m; second maximum, +1h 32m; and are referred only to the greater ebb phase at the reference station.

<56> Current too weak and variable to be predicted.

<57> Observations indicate that the current usually flows WNW with a non–tidal current of 0.6 knot.

<58> Currents are materially affected by winds.

<59> Northeast of Lively Island, it is reported that the current sets constantly northwestward, being stronger when the main stream west of the island sets northwestward.

<60> In the section of El Capitan Passage west of Dry Pass the current turns westward about the time of strength of eastward current in Dry Pass, and turns eastward about 1 hour before the time of strength of westward current in Dry Pass.

<61> Time difference is for maximum ebb only. Flood current is very erratic.

<62> Current frequently ebbs throughout the day, especially when moon is in quadrature.

<63> Slacks before flood may be variable.

<64> Observations in Frederick Sound during summer months indicate that the current usually flows northwestward, the speed varying with the tide. It apparently flows southeastward only on large tides.

<66> The currents in Nakwasina Passage, except at the location 1 1/2 miles west of Allan Point, are too weak and variable to be predicted.

<67> Slacks are undetermined.

<68> Current is erratic in direction and strength at times.

<69> It is reported that currents are strong and passage is navigable only near time of slack water.

<70> Observations indicate that current usually flows northward, speed varying from zero to an average strength of 2 knots which occurs about 2.3 hours before time of maximum flood at North Inian Pass.

<71> A weak ebb probably occurs at this station when flood speed at North Inian Pass is less than 2 knots.

<72> It is reported that currents are strong and passage is navigable only near time of slack water.

<73> Observations indicate that current usually flows eastward with an average speed of 0.8 knot.

<74> It is reported that close inshore at Anchorage an eddy current flows up Knik Arm during the ebb.

ENDNOTES

<75> The tidal currents in this strait are weak except at the Slough and the Narrows where the speed at strength may amount to 2 or 3 knots on large tides.

<76> Current is rotary, turning clockwise. Minimum current about 0.1 knot, setting 160° true.

<77> Off Whirl Point, the speed of the current is about twice that off the Cannery.

<78> Dangerous tide rips occur in most of the passes in the Aleutian Islands when sea and swell oppose strong currents.

<79> Tidal current is weak and rotary, turning clockwise. Observations indicate a 0.2 knot westerly set.

<80> Ebb speed may not exceed 5.5 knots.

<81> When predicted ebb speed at Akutan Pass is less than 2 knots the current at this station is weak and variable.

<82> When predicted ebb speed at Unimak Pass is less than 1 knot the current at this station is weak and variable.

<83> Flood begins 1 hour before maximum ebb at Unimak Pass.

<85> Ratios are for greater flood and greater ebb only. The flood and ebb inequalities are small when the moon is near the equator. At other times there is considerable difference between the two floods and also the two ebbs in a day. The lesser flood may even become a small ebb at extreme declinations.

<86> Time difference for greater ebb and slack before greater ebb. Slack before greater flood and greater flood occur 7 hours and 12 hours respectively after greater ebb. Current floods for about 8 hours after greater flood.

<87> Flood speed ratio is for the 1st flood after greater ebb; the ebb speed ratio is for greater ebb.

<88> For greater flood and greater ebb only. The current is rotary, turning clockwise. At the predicted time of slack before greater flood, the current will run westward with speed of about 1.5 knots. At the predicted times of all other slacks and also lesser flood and lesser ebb (or minimum flood), the current will run northward with speed of about one knot.

<89> Current is rotary, turning clockwise. About 5 hours after time of greater ebb at Unimak Pass, current flows NW, speed ratio 0.4 and about 13 hours after greater ebb at Unimak Pass, current flows SE, speed ratio 0.5.

<90> Current is somewhat rotary, turning clockwise and is too variable to be predicted.

<91> Current is somewhat rotary, turning clockwise and is subject to considerable fluctuation. Approximate predictions are obtained through the following relations to the greater ebb at Unimak Pass: +1 1/2 hours, sets SSW, ratio 0.8; +9 hours, probably weak northerly set; + 18 hours, sets NNE, ratio 0.6.

<92> Current is relatively weak and rotary, turning clockwise. Data is for the greater ebb which is the most consistent phase.

<93> Current is somewhat rotary turning clockwise. At times given for slack, flood begins and slack, ebb begins the current probably flows WNW and ESE respectively, with speed of about 1.5 knot.

<94> The current changes from ebb to flood abruptly and predictions for beginning of flood are approximate only.

<95> Maximum flood 1 knot greater and maximum ebb 0.5 knot greater than corresponding speed at Kvichak Bay.

<96> Current is rotary turning clockwise. At the predicted times of slack before flood or ebb the current will run westward or eastward respectively with speed about 0.2 knot.

<97> Current is rotary turning clockwise. Difference and ratio are for maximum flood current only.

<98> Current is rotary turning clockwise. Midway between flood and ebb current is minimum (about 0.2 knot).

<99> Current is rotary turning clockwise. An average maximum speed of about 0.7 knot occurs in a SSW direction.

ENDNOTES

<100> Current flows in an ENE direction with an average speed of 1.1 knots. All values appearing in the ebb columns are actually those for a minimum flood.

<101> Time differences are for slack before greater flood, slack before greater ebb, and greater ebb. Maximum flood occurs about halfway between the times of the slacks obtained through differences. Speed ratios are for greater flood and greater ebb.

<102> Observations indicate that the current usually flows NNE with an average speed of 0.3 knot. Values in the ebb column are actually those for a minimum flood.

<103> Observations indicate that the current flows in a northerly direction with an average speed of 0.6 knot. Values in the ebb columns are actually those for a minimum flood.

<104> Observations indicate that the current flows in a NNE direction with an average speed of 0.9 knot. Values in the ebb columns are actually those for a minimum flood.

<105> Observations indicate the existence of a permanent current setting north with an average speed of 0.7 knot. Combined with the tidal current, the northward current may have an average speed varying from slack to 1.4 knots. The greatest observed speed off Maui Island was 2.7 knots.

<106> Observations indicate the current usually flows northwest on the west side of the channel near Kahoolawe Island with a maximum speed of 0.7 knot.

<107> Observations indicate that current usually flows SSE on east side of channel near Maui Island with a maximum speed of 0.4 knot.

<108> Current seldom floods. It decreases from maximum ebb to a minimum ebb or slack, then increases to maximum ebb again with no significant flow in the flood direction.

<109> Current sets to northeast with an average speed of about 0.3 knot.

<110> The general pattern of the flow into the Naikai is as follows. From the Kii Suido the flood current flows northward through Tomogashima Suido, Izumi Nada, Naruto and Muyano Seto, and westward through Akashi Kaikyo, Harima Nada and Bisan Seto to Bingo Nada. From the Bungo Suido the flood current flows northward through Hayasui Seto and then divides, one branch flowing westward to Shimonoseki Kaikyo and the other branch northeastward through Iyo Nada, Kudako Suido and environs, and Aki Nada. Continuing, the flood current then flows southward through Kurushima Kaikyo and northeastward through Mihara Seto to Bingo Nada. On the ebb the direction of flow is reversed. Bingo Nada is the area where the currents meet on the flood and separate on the ebb.

<111> The ratios and average speeds and directions are those of spring speeds.

<112> It is reported that the current at the pier at Zamboanga usually sets in a westerly direction.

<113> Current flows continuously in a westerly direction. Differences are for mean maximum speed.

<114> Current ebbs continuously. Differences are for mean maximum ebb only.

<115> Current floods continuously. Differences are for mean maximum flood only.

<116> Slacks are indefinite. Flood current is weak and variable. Differences are for mean maximum ebb only.

<117> Minimum before flood is indefinite. Flood current is weak and variable.

<118> Weak and variable current ebbs continuously in a southeasterly direction.

<119> Slacks are indefinite. Flood current is weak and variable. Differences are for a small ebb current.

<120> Current ebbs continuously with speeds varying from 0.7 knot (shown in the maximum flood column) to 1.5 knots.

<121> Due to disturbances caused by the structure, observed currents within 50 feet of the pier can be significantly different from the predictions.

<122> There is a weak secondary flood current which sets northward 3-5 hours after the maximum flood current.

TABLE 3.—SPEED OF CURRENT AT ANY TIME

EXPLANATION OF TABLE

Though the predictions in this publication give only the slacks and maximum currents, the speed of the current at any intermediate time can be obtained approximately by the use of this table. Directions for its use are given below the table.

Before using the table for a place listed in Table 2, the predictions for the day in question should first be obtained by means of the differences and ratios given in Table 2.

The examples below follow the numbered steps in the directions.

Example 1.—Find the speed of the current in San Francisco Bay Entrance (Golden Gate) at 4:00 on a day when the predictions which immediately precede and follow 4:00 are as follows:

(1)	Slack; flood begins	Maximum (Flood)	
	Time	Time	Speed
	2:19	5:25	3.2 knots

Directions under the table indicate Table A is to be used for this station.

(2) Interval between slack and maximum flood is 5:25 – 2:19 = $3^h\ 06^m$. Column heading nearest $3^h\ 06^m$ is $3^h\ 00^m$.

(3) Interval between slack and desired time is 4:00 – 2:19 = $1^h\ 41^m$. Line labeled $1^h\ 40^m$ is nearest $1^h\ 41^m$.

(4) Factor in column $3^h\ 00^m$ and on line $1^h\ 40^m$ is 0.8. The above flood speed of 3.2 knots multiplied by 0.8 gives a flood speed of 2.56 knots (or 2.6 knots, since one decimal is sufficient) for the time desired.

Example 2.—Find the speed of the current in Peril Strait at Kakul Narrows at 15:30 on a day when the predictions (obtained through the difference and ratio in Table 2) which immediately precede and follow 15:30 are as follows:

(1)	Maximum (Ebb)		Slack; flood begins
	Time	Speed	Time
	13:59	2.8 knots	16:56

Directions under the table indicate Table B is to be used, since this station in Table 2 is referred to Sergius Narrows.

(2) Interval between slack and maximum ebb is 16:56 – 13:39 = $3^h\ 17^m$. Hence, use column labeled $3^h\ 20^m$.

(3) Interval between slack and time desired is 16:56 – 15:30 = $1^h\ 26^m$. Hence, use line labeled $1^h\ 20^m$.

(4) Factor in column $3^h\ 20^m$ and on line $1^h\ 20^m$ in 0.7. The above ebb speed of 2.8 knots multiplied by 0.7 gives an ebb speed of 2.0 knots for the desired time.

When the interval between slack and maximum current is greater than $5^h\ 40^m$, enter the table with one–half the interval between slack and maximum current and one–half the interval between slack and the desired time and use the factor thus found.

TABLE 3.—SPEED OF CURRENT AT ANY TIME

TABLE A

Interval between slack and desired time	Interval between slack and maximum current													
	h. m. 1 20	h. m. 1 40	h. m. 2 00	h. m. 2 20	h. m. 2 40	h. m. 3 00	h.m. 3 20	h.m. 3 40	h.m. 4 00	h.m. 4 20	h.m. 4 40	h.m. 5 00	h.m. 5 20	h.m. 5 40
h. m.	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots
0 20	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0 40	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
1 00	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3
1 20	1.0	1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4
1 40	----	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4
2 00	----	----	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5
2 20	----	----	----	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6
2 40	----	----	----	----	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7
3 00	----	----	----	----	----	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.7
3 20	----	----	----	----	----	----	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8
3 40	----	----	----	----	----	----	----	1.0	1.0	1.0	0.9	0.9	0.9	0.9
4 00	----	----	----	----	----	----	----	----	1.0	1.0	1.0	1.0	0.9	0.9
4 20	----	----	----	----	----	----	----	----	----	1.0	1.0	1.0	1.0	0.9
4 40	----	----	----	----	----	----	----	----	----	----	1.0	1.0	1.0	1.0
5 00	----	----	----	----	----	----	----	----	----	----	----	1.0	1.0	1.0
5 20	----	----	----	----	----	----	----	----	----	----	----	----	1.0	1.0
5 40	----	----	----	----	----	----	----	----	----	----	----	----	----	1.0

TABLE B

Interval between slack and desired time	Interval between slack and maximum current													
	h. m. 1 20	h. m. 1 40	h. m. 2 00	h. m. 2 20	h. m. 2 40	h. m. 3 00	h. m. 3 20	h. m. 3 40	h. m. 4 00	h. m. 4 20	h. m. 4 40	h. m. 5 00	h. m. 5 20	h. m. 5 40
h. m.	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots	knots
0 20	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
0 40	0.8	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
1 00	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4
1 20	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5
1 40	----	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6
2 00	----	----	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.6
2 20	----	----	----	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7
2 40	----	----	----	----	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.7
3 00	----	----	----	----	----	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8
3 20	----	----	----	----	----	----	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9
3 40	----	----	----	----	----	----	----	1.0	1.0	1.0	1.0	0.9	0.9	0.9
4 00	----	----	----	----	----	----	----	----	1.0	1.0	1.0	1.0	0.9	0.9
4 20	----	----	----	----	----	----	----	----	----	1.0	1.0	1.0	1.0	0.9
4 40	----	----	----	----	----	----	----	----	----	----	1.0	1.0	1.0	1.0
5 00	----	----	----	----	----	----	----	----	----	----	----	1.0	1.0	1.0
5 20	----	----	----	----	----	----	----	----	----	----	----	----	1.0	1.0
5 40	----	----	----	----	----	----	----	----	----	----	----	----	----	1.0

Use table A for all places except those listed below for table B.
Use table B for Deception Pass, Seymour Narrows, Sergius Narrows, Isanotski Strait. and all stations in table 2 which are referred to these points.

1. From predictions find the time of slack water and the time and velocity of maximum current (flood or ebb), one of which is immediately before and the other after the time for which the velocity is desired.
2. Find the interval of time between the above slack and maximum current, and enter the top of table A or B with the interval which most nearly agrees with this value.
3. Find the interval of time between the above slack and the time desired, and enter the side of table A or B with the interval which most nearly agrees with this value.
4. Find, in the table, the factor corresponding to the above two intervals, and multiply the maximum velocity by this factor. The result will be the approximate velocity at the time desired.

TABLE 4.—DURATION OF SLACK

The predicted times of slack water given in this publication indicate the instant of zero speed, which is only momentary. There is a period on each side of the slack water, however, during which the current is so weak that for practical purposes it may be considered negligible.

The following tables give, for various maximum currents, the approximate period of time during which weak currents not exceeding 0.1 to 0.5 knot will be encountered. This duration includes the last of the flood or ebb and the beginning of the following ebb or flood, that is, half of the duration will be before and half after the time of slack water.

Table A should be used for all places except those listed below for Table B.

Table B should be used for Deception Pass, Seymour Narrows, Sergius Narrows, Isanotski Strait and all stations in table 2 which are referred to them.

Duration of weak current near time of slack water

TABLE A

Maximum	*Period with a speed not more than -*				
current	*0.1 knot*	*0.2 knot*	*0.3 knot*	*0.4 knot*	*0.5 knot*
Knots	*Minutes*	*Minutes*	*Minutes*	*Minutes*	*Minutes*
1.0	23	46	70	94	120
1.5	15	31	46	62	78
2.0	11	23	35	46	58
3.0	8	15	23	31	38
4.0	6	11	17	23	29
5.0	5	9	14	18	23
6.0	4	8	11	15	19
7.0	3	7	10	13	16
8.0	3	6	9	11	14
9.0	3	5	8	10	13
10.0	2	5	7	9	11

TABLE B

Maximum	*Period with a speed not more than -*				
current	*0.1 knot*	*0.2 knot*	*0.3 knot*	*0.4 knot*	*0.5 knot*
Knots	*Minutes*	*Minutes*	*Minutes*	*Minutes*	*Minutes*
1.0	13	28	46	66	89
1.5	8	18	28	39	52
2.0	6	13	20	28	36
3.0	4	8	13	18	22
4.0	3	6	9	13	17
5.0	3	5	8	10	13
6.0	2	4	6	8	11
7.0	2	4	5	7	9
8.0	2	3	5	6	8

When there is a difference between the speeds of the maximum flood and ebb preceding and following the slack for which the duration is desired, it will be sufficiently accurate for practical purposes to find a separate duration for each maximum speed and take the average of the two as the duration of the weak current.

TABLE 5.—ROTARY TIDAL CURRENTS

EXPLANATION

Offshore and in some of the wider indentations of the coast, the tidal current is quite different from that found in the more protected bays and rivers. In these inside waters the tidal current is of the reversing type. The current sets in one direction for a period of 6 hours after which is ceases to flow momentarily and then sets in the opposite direction during the following 6 hours. The offshore tidal current, not being confined to a definite channel, changes its direction continually and never slows to a true slack water. Thus in a tidal cycle of 12 ½ hours it will have set in all directions of the compass. This type of current is referred to as a rotary current.

A characteristic feature of the rotary current is the absence of slack water. Although the current generally varies from hour to hour, this variation from greatest current to least current and back again to greatest does not give rise to a period of slack water. When the speed of the rotary tidal current is least, it is known as the minimum current, and when it is greatest it is known as the maximum current. The minimum and maximum speeds of the rotary current are related to each other in the same way as slack and strength of current. A minimum speed of the current follows a maximum speed by an interval of approximately 3 hours and followed in turn by another maximum after a further interval of 3 hours.

The following table provides the direction and speed of the rotary current for each hour at a number of offshore stations. The times and speeds are referred to predictions for a reference station in Table 1. All times are in local standard time for the secondary station.

The speeds given in the table are the average speeds for the station. The Moon when new, full, or at perigee tends to increase the speeds 15 to 20 percent above average. When perigee occurs at or near the time of new or full Moon, the current speeds will be 30 to 40 percent above average. The Moon when at first and third quarter or at apogee tend to decrease the current speeds below average by 15 to 20 percent. When apogee occurs at or near the first or third quarter Moon, the currents will be 30 to 40 percent below average. The speeds will be about average when apogee occurs at or near the time of the new or full Moon and also when perigee occurs at or near quadrature. (See table of astronomical data.)

The direction of the current is given in degrees, true, reading clockwise from 0° at north, and is the direction toward which the water is flowing.

The speeds and directions are for tidal current only and do not include the effect of the wind. When a wind is blowing, a wind-driven current will be set up as is superimposed on the normal tidal current. The actual current encountered will thus be a combination of the wind-driven current and the tidal current. See the chapters on "Wind-Driven Currents" and "The Combination of Currents".

As an example, in the following table the current at Montague Point is given for each hour after maximum flood at Sergius Narrows. Suppose it is desired to find the direction and speed of the current at Montague Point at 3:15 p.m. (15:15) on a day when the maximum flood at Sergius Narrows is predicted in Table 1 to occur at 13:20. The desired time is therefore 2 hours after the maximum flood at Sergius Narrows. From the table the tidal current at Montague Point at 2 hours is setting 285° true with an average speed of 0.58 knots. If this day is near the time of new Moon and about half way between apogee and perigee, then the distance effect of the moon will be nil and the phase effect alone will increase the speed by about 15 percent, to 0.66 knots.

TABLE 5.—ROTARY TIDAL CURRENTS

Station Name	Depth	Hourly time increments 0	1	2	3	4	5	6	7	8	9	10	11	
	After Maximum Flood at KVICHAK BAY													
Point Riou, 2.6 nm SW	13	0.58	0.42	0.21	0.12	0.23	0.26	0.37	0.56	0.65	0.74	0.74	0.71	knots
		007	006	005	289	269	262	295	314	337	349	348	352	degrees
Claybluff Point Light, 5.2nm SSW	14	0.05	0.35	0.73	0.90	1.01	1.06	1.04	0.87	0.82	0.70	0.58	0.41	knots
		141	225	237	251	257	261	272	291	306	332	002	037	degrees
Kichyatt Point, 1.3nm NE	378	0.12	0.12	0.08	0.03	0.00	0.00	0.01	0.01	0.03	0.06	0.09	0.11	knots
		289	280	278	261	237	105	068	066	357	333	323	310	degrees
	After Maximum Flood at SERGIUS NARROWS													
Montague Point, 4.5 miles NE	71	0.45	0.55	0.58	0.58	0.57	0.45	0.26	0.12	0.16	0.24	0.24	0.27	knots
		276	288	285	286	287	285	276	245	192	187	209	247	degrees
Ship Channel, east of Smith Island	69	0.17	0.20	0.30	0.32	0.29	0.25	0.25	0.31	0.35	0.37	0.33	0.22	knots
		261	303	326	356	028	059	094	123	142	157	176	203	degrees
Johnston Point, 4 miles N	20	0.27	0.35	0.35	0.36	0.37	0.25	0.17	0.05	0.04	0.05	0.13	0.20	knots
		002	022	035	046	053	054	063	075	222	306	308	328	degrees
Gravina Point and Makaka Point, between	20	0.07	0.12	0.18	0.16	0.13	0.10	0.06	0.06	0.09	0.12	0.11	0.04	knots
		077	090	104	112	120	133	169	231	260	264	273	308	degrees
	After Maximum Flood at WRANGELL NARROWS													
The Brothers West SEA0501 Bin 1	272	0.65	0.33	0.24	0.29	0.33	0.44	0.50	0.44	0.37	0.14	0.26	0.56	knots
		016	007	340	287	241	197	177	154	140	104	028	011	degrees
The Brothers West SEA0501 Bin 9	167	0.73	0.45	0.23	0.30	0.39	0.41	0.53	0.55	0.34	0.05	0.27	0.54	knots
		026	015	352	294	274	229	200	194	202	285	031	039	degrees
The Brothers West SEA0501 Bin 918	48	0.80	0.58	0.17	0.22	0.44	0.64	0.74	0.69	0.35	0.08	0.63	0.91	knots
		025	015	332	242	215	207	208	209	209	082	063	048	degrees

TABLE 5.—ROTARY TIDAL CURRENTS

Station Name	Depth	Hourly time increments 0	1	2	3	4	5	6	7	8	9	10	11	
	After Maximum Flood at WRANGELL NARROWS													
Hawk Inlet Entrance	108	0.08	0.06	0.03	0.08	0.15	0.16	0.21	0.20	0.19	0.15	0.01	0.19	knots
SEA0506 Bin 1		030	066	143	160	157	161	162	163	165	161	111	356	degrees
Hawk Inlet Entrance	59	0.33	0.32	0.20	0.09	0.10	0.12	0.13	0.18	0.17	0.17	0.11	0.17	knots
SEA0506 Bin 6		049	054	062	094	159	182	180	176	166	156	132	031	degrees
Hawk Inlet Entrance	9	0.27	0.20	0.12	0.07	0.15	0.31	0.30	0.17	0.11	0.08	0.11	0.23	knots
SEA0506 Bin 11		053	069	078	150	209	242	254	226	200	187	102	049	degrees
The Brothers, East	68	0.45	0.44	0.28	0.25	0.36	0.43	0.45	0.41	0.29	0.14	0.26	0.40	knots
SEA0502 Bin 17		061	085	123	159	184	207	220	233	249	318	022	042	degrees
Calder Rocks,	28	0.28	0.06	0.25	0.47	0.51	0.33	0.05	0.30	0.33	0.23	0.24	0.33	knots
SEA0608 Bin 16		030	066	143	160	157	161	162	163	165	161	111	116	degrees
Sonora Passage,	152.8	0.40	0.44	0.37	0.27	0.16	0.07	0.05	0.07	0.06	0.03	0.02	0.14	knots
SEA0640 Bin 1		129	141	154	163	173	202	264	280	279	282	095	116	degrees
Sonora Passage,	83.9	0.09	0.11	0.12	0.09	0.06	0.15	0.25	0.28	0.22	0.12	0.02	0.16	knots
SEA0640 Bin 8		159	163	175	205	277	329	340	346	348	347	049	141	degrees
Sonora Passage,	24.8	0.11	0.10	0.08	0.06	0.17	0.32	0.42	0.43	0.37	0.27	0.18	0.15	knots
SEA0640 Bin 14		110	137	165	255	304	319	329	337	349	007	040	079	degrees
Summer Strait	46	0.20	0.45	0.62	1.08	1.49	1.59	1.46	1.36	1.30	1.06	0.63	0.20	knots
SEA0605 Bin 15		305	286	244	224	224	227	220	203	187	177	171	159	degrees
Amelius Island, 1 Mi E of,	65.5	0.23	0.52	0.70	0.88	0.96	0.77	0.37	0.40	0.50	0.43	0.32	0.22	knots
SEA0609 Bin 5		202	230	229	222	221	221	198	154	148	138	123	126	degrees
Amelius Island, 1 Mi E of	16.3	0.35	0.53	0.67	0.83	0.93	0.84	0.61	0.50	0.51	0.40	0.29	0.23	knots
SEA0609 Bin 5		205	222	221	214	211	210	199	173	158	147	149	163	degrees
	After Maximum Flood at KENNEDY ENTRANCE													
Barabara Point	82	0.25	0.24	0.27	0.33	0.40	0.41	0.34	0.16	0.07	0.15	0.24	0.29	knots
CI0421 Bin 11		019	344	300	276	260	248	236	220	140	077	057	044	degrees
Barabara Point	23	0.37	0.36	0.29	0.28	0.32	0.34	0.32	0.25	0.11	0.04	0.16	0.30	knots
CI0421 Bin 20		006	354	327	294	263	243	227	208	180	073	023	014	degrees

TABLE 5.—ROTARY TIDAL CURRENTS

Station Name	Depth	Hourly time increments 0	1	2	3	4	5	6	7	8	9	10	11	
	After Maximum Flood at CHARLESTON HARBOR													
Iliamna Bay	20	0.36	0.32	0.35	0.42	0.44	0.44	0.46	0.46	0.51	0.61	0.61	0.51	knots
COI0512 Bin 1		335	014	055	083	107	135	163	194	232	260	278	298	degrees
Iliamna Bay	10	0.44	0.37	0.40	0.47	0.49	0.51	0.53	0.53	0.56	0.65	0.68	0.59	knots
COI0512 Bin 2		334	013	054	084	111	139	165	193	228	256	277	297	degrees
Cape Douglas, NE	452	0.83	0.66	0.43	0.35	0.51	0.65	0.66	0.52	0.32	0.27	0.53	0.76	knots
Bin 1		330	345	010	076	118	134	144	157	188	264	299	312	degrees
Cape Douglas, NE	314	0.65	0.52	0.27	0.08	0.29	0.46	0.51	0.42	0.18	0.11	0.37	0.58	knots
Bin 8		320	326	338	049	125	132	135	139	159	262	300	310	degrees
	After Maximum Flood at MONTAGUE STRAIT													
Bainbridge Pass North,	331	0.03	0.09	0.13	0.15	0.15	0.12	0.06	0.03	0.11	0.14	0.14	0.08	knots
PWS0712, Bin 1		223	207	208	207	207	209	218	321	000	000	359	357	degrees
Cape Cleare,	40	0.87	0.47	0.30	0.64	1.10	1.32	1.22	0.76	0.67	1.28	1.57	1.50	knots
PWS0720, Bin 1		348	005	078	129	147	161	177	208	279	324	333	340	degrees
Cape Cleare,	26	1.14	0.76	0.43	0.62	1.13	1.44	1.38	0.89	0.88	1.56	1.89	1.82	knots
PWS0720, Bin 3		345	359	051	114	145	163	182	217	283	323	333	339	degrees
Cape Cleare,	13	1.48	1.01	0.56	0.55	1.12	1.48	1.48	1.00	1.08	1.87	2.29	2.24	knots
PWS0720, Bin 5		340	352	030	099	144	164	184	221	286	321	331	335	degrees
Cape Hinchinbrook Approach,	37	0.54	0.47	0.33	0.15	0.02	0.10	0.17	0.25	0.39	0.49	0.60	0.65	knots
PWS0729, Bin 12		301	307	314	321	271	186	202	226	256	269	280	289	degrees
Cottonwood Point,	124	0.20	0.14	0.11	0.12	0.15	0.16	0.18	0.20	0.24	0.24	0.24	0.23	knots
PWS0730, Bin 1		282	279	258	237	230	236	249	266	282	289	292	292	degrees
Cottonwood Point,	59	0.31	0.24	0.19	0.18	0.21	0.25	0.29	0.32	0.35	0.37	0.38	0.37	knots
PWS0730, Bin 6		285	286	277	264	252	246	250	258	268	275	281	284	degrees
Cottonwood Point,	32	0.40	0.31	0.24	0.20	0.20	0.24	0.29	0.35	0.40	0.43	0.44	0.45	knots
PWS0730, Bin 8		287	289	286	277	262	250	248	253	260	267	274	279	degrees
Crafton Is, Knight Is Passage,	97	0.05	0.03	0.04	0.10	0.14	0.17	0.17	0.14	0.09	0.04	0.03	0.05	knots
PWS0708, Bin 15		047	091	149	171	177	179	177	171	162	135	076	044	degrees

TABLE 5.—ROTARY TIDAL CURRENTS

Station Name	Depth	Hourly time increments 0	1	2	3	4	5	6	7	8	9	10	11	
		After Maximum Flood at MONTAGUE STRAIT												
Gravina Pt. and Makaka Pt., between	20	0.16	0.13	0.10	0.06	0.06	0.09	0.12	0.11	0.04	0.07	0.12	0.18	knots
		112	120	133	169	231	260	264	273	308	077	090	104	degrees
Hinchinbrook Entrance, PWS0728, Bin 1	138	0.33	0.30	0.25	0.25	0.30	0.34	0.34	0.26	0.09	0.11	0.26	0.36	knots
		348	008	039	080	107	122	133	143	170	297	319	330	degrees
Hinchinbrook Entrance, PWS0728, Bin 5	85	0.43	0.42	0.38	0.39	0.44	0.51	0.52	0.45	0.28	0.18	0.27	0.41	knots
		330	350	019	055	086	107	124	139	165	228	278	304	degrees
Hinchinbrook Entrance PWS0728, Bin 10	20	0.54	0.53	0.49	0.49	0.54	0.58	0.54	0.42	0.23	0.24	0.38	0.51	knots
		347	007	035	067	094	114	131	151	194	257	295	315	degrees
Johnston Point, 4 miles north	20	0.36	0.37	0.25	0.17	0.05	0.04	0.05	0.13	0.20	0.27	0.35	0.35	knots
		046	053	054	063	075	222	306	308	328	002	022	035	degrees
Knowles Head, PWS0737 Bin 8	151	0.12	0.06	0.03	0.04	0.07	0.11	0.17	0.22	0.24	0.25	0.24	0.22	knots
		331	321	272	214	223	251	273	287	303	317	328	335	degrees
Knowles Head, PWS0737 Bin 16	46	0.19	0.13	0.08	0.11	0.19	0.26	0.32	0.35	0.37	0.36	0.34	0.30	knots
		345	349	324	297	288	293	300	308	317	324	330	334	degrees
Montague Point, 4.5 miles east	71	0.58	0.57	0.45	0.26	0.12	0.16	0.24	0.24	0.27	0.45	0.55	0.58	knots
		286	287	285	276	245	192	187	209	247	276	288	285	degrees
Point Elrington, PWS0718 Bin 1	151	0.35	0.25	0.16	0.06	0.08	0.18	0.28	0.31	0.24	0.13	0.10	0.22	knots
		014	014	024	058	152	176	185	192	202	225	310	343	degrees
Point Elrington, PWS0718 Bin 5	98	0.27	0.19	0.10	0.07	0.14	0.29	0.39	0.44	0.41	0.29	0.29	0.38	knots
		020	026	048	107	164	193	207	221	239	282	326	356	degrees
Point Elrington, PWS0718 Bin 10	33	0.20	0.13	0.04	0.15	0.34	0.56	0.69	0.76	0.76	0.72	0.64	0.57	knots
		032	060	137	228	236	240	248	263	283	306	332	357	degrees
Ship Channel, east of Smith Island	69	0.32	0.29	0.25	0.25	0.31	0.35	0.37	0.33	0.22	0.17	0.20	0.30	knots
		356	028	059	094	123	142	157	176	203	261	303	326	degrees
Snug Harbor, PWS0723, Bin 1	280	0.03	0.03	0.01	0.02	0.06	0.14	0.21	0.24	0.22	0.15	0.07	0.02	knots
		060	055	073	168	186	187	187	188	190	193	190	134	degrees
Snug Harbor, PWS0723, Bin 18	57	0.44	0.44	0.39	0.33	0.25	0.18	0.12	0.07	0.08	0.16	0.25	0.35	knots
		018	022	024	025	026	027	029	029	012	006	006	010	degrees

TABLE 5.—ROTARY TIDAL CURRENTS

Station Name	Depth	Hourly time increments												
		0	1	2	3	4	5	6	7	8	9	10	11	
		After Maximum Flood at SAN FRANCISCO BAY												
Column Point, W of Cross Sound SEA0844, Bin 17	74.4	0.42	0.23	0.32	0.52	0.56	0.47	0.34	0.19	0.33	0.42	0.51	0.59	knots
		91	132	187	204	208	215	232	292	353	28	62	80	degrees
Richardson Bay Entrance, CA	4	0.19	0.35	0.45	0.49	0.41	0.25	0.32	0.27	0.12	0.16	0.34	0.39	knots
		313	250	236	228	221	175	120	113	97	27	16	11	degrees

COASTAL TIDAL CURRENTS

EXPLANATION

The term coastal tidal current is used here to designate the tidal current found offshore from 5 to 20 miles from the coast. The data were based upon observations made through the cooperation of the U.S. Coast Guard at a number of lightship stations along the Pacific coast from San Francisco to Swiftsure Bank, off the coast of Washington.

Rotary current.—Offshore, away from the immediate influence of the coast, the tidal current is quite different from the current found in inland tidal waters, Instead of setting in one direction for a period of 6 hours and in the opposite direction during the following period of 6 hours, the tidal current offshore changes its direction continually, so that in a period of about 12½ hours it will have set in all directions of the compass. The type of current is therefore called a rotary current.

Minimum current.—Characteristic feature of the rotary current is the absence of slack water. Although the current generally varies from hour to hour, this variation from greatest current to least current and back again to greater current does not give rise to a period of slack water. When the speed of the rotary tidal current is least, it is known as the minimum current, and when it is greatest it is known as the maximum current. The minimum and maximum speeds of the rotary current are thus related to each other in the same way as slack and strength of current, a minimum speed of the current following a maximum speed by an interval of about 3 hours and being followed in turn by another maximum after a further interval of 3 hours.

Changes in the tidal current.—The speeds of the tidal current given here are average speeds. Near the times when the Moon is full or new the speeds of the tidal current will be about 20 percent, or one-fifth greater than the average, and near the times of the Moon's first and third quarter the speeds will be smaller than the average by one-fifth.

Effect of wind.—It is to be carefully noted that, when a wind is blowing, the current a vessel will encounter is the resultant of the tidal and wind currents. Only the tidal currents together with the greatest observed speed of the current at each light vessel are given here, and the mariner is cautioned to combine with the tidal current the current brought about by any wind that may be blowing. Wind currents are given under the heading, "Wind-driven Currents".

Direction and speed of currents.—The direction of the current is true, not magnetic, and is the direction toward which the current is setting, while the wind when given is in the direction from which it is blowing. The speed of the current is given in knots or nautical miles per hour.

Reference to tides.—The tidal currents on the Pacific coast, like the tides, exhibit the feature known as diurnal inequality; that is, the two floods of a day are unequal and likewise the two ebbs. In the case of the tide the higher of the two high waters of a day is known as higher high water, while the lower of the two is known as lower high water. For the two low waters of a day there are likewise distinctive names, the lower one being known as lower low water while the higher on is known as higher low water. In certain instances it is convenient to refer the currents to the tides, and where this is done the following symbols are used to designate the different tides: HH for higher high water, LH for lower high water, LL for lower low water, and HL for higher low water.

OBSERVATION STATIONS

Cape Mendocino Light, 4.6 miles west of (former location of Blunts Reef Lightship), Calif.—The tidal current here is rotary, but quite weak, being on the average less than 0.1 knot. At strength of flood the current sets north, and at strength of ebb it sets south. Since the tidal current is weak, it is generally masked by wind currents or other nontidal currents. The observations indicated the existence of a nontidal current setting southwesterly with an average speed of 0.2 knot from March to November and northwesterly with a like average speed from November to March. The greatest observed speed was 3 knots.

Columbia River Approach Lighted Horn Buoy R"C" (former location of the Columbia River Lightship), coast of Oregon.—The tidal current here is rotary, turning clockwise, but rather weak. The speed of the current at strength being about 0.3 knots setting 020° on the flood and 200° on the ebb.

The current from the Columbia River completely masks the flood current; observations showing that there is a notntidal current at the buoy location with an average speed of 0.4 knots setting 235° from February to October; and 295° from October to February. When there is considerable runoff from the river, the combined tidal and nontidal current at the buoy frequently attains a speed of 2 knots or more in a southwesterly direction. The greatest observed speed here is 3.5 knots.

Cape Alava, 4.4 miles west of (former location of Umatilla Reef Lightship), Wash.—The tidal current here is only slightly rotary. Strength of flood comes about one-fourth hour after the strength of flood in the entrance to the Strait of Juan de Fuca, setting 345° with a speed of 0.3 knot. Strength of ebb comes about one-fourth hour after the strength of ebb in the strait and sets 165° with a speed of 0.3 knot.

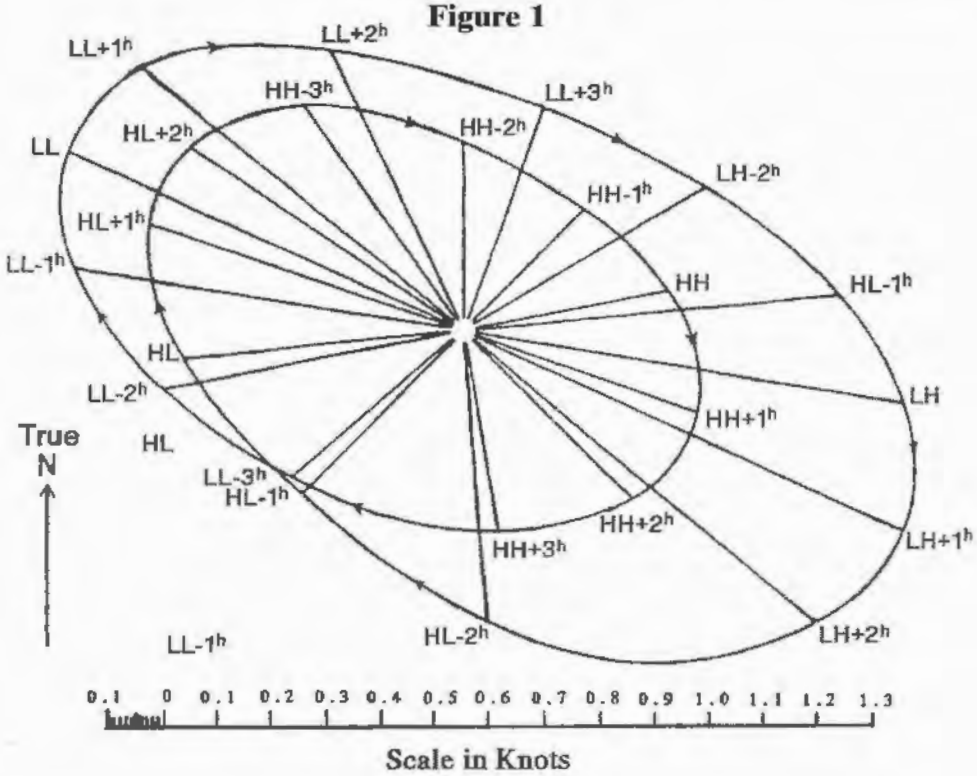
The tidal current here is generally masked by nontidal currents brought about by winds or other causes. Observations indicated the existence of a nontidal current, setting about 350° with a speed of 0.7 knot from November to April, with the greatest speed during the month of December, when it averaged about 1 knot. From April to November the nontidal current was variable, averaging 0.4 knot, generally in a southeasterly direction. With strong southeasterly winds the combined tidal and nontidal current attains a speed of 2 to 3 knots in a northerly direction. The greatest observed speed was 3.3 knots.

Swiftsure Bank (Latitude 48° 32'N.; Longitude 125° 00'W.)—The tidal current is distinctly rotary, turning clockwise twice each day, as shown in figure 1, in which the average currents have been referred to every hour of the tides at Astoria, Oregon The predicted tides for this port will be found in the Tide Tables, West Coast of North and South America, issued annually in advance, by the National Ocean service. As there is considerable difference between the speeds of the two revolutions which the tidal currents make each day, there are two distinct values for the flood and for the ebb currents, corresponding to the diurnal inequality of the tides.

The speed of the tidal currents here is generally small, being less than 1 knot, as shown in the following table, which represents the average conditions of figure 1.

Time	Speed	Direction	Time	Speed	Direction
Tide Hrs.	*Knot*	*True*	*Tide Hrs.*	*Knot*	*True*
HH–3	0.5	325°	LL–3	0.4	230°
HH–2	0.4	000°	LL–2	0.6	260°
HH–1	0.3	045°	LL–1	0.7	280°
HH	0.4	080°	LL	0.8	295°
HH+1	0.5	110°	LL+1	0.8	310°
HH+2	0.4	135°	LL+2	0.6	335°
HH+3	0.4	170°	LL+3	0.4	020°
LH–2	0.5	060°	HL–2	0.5	175°
LH–1	0.7	085°	HL–1	0.4	225°
LH	0.8	100°	HL	0.5	265°
LH+1	0.9	115°	HL+1	0.6	290°
LH+2	0.8	130°	HL+2	0.6	305°

Figure 1



Tidal Current Curve, Swiftsure Bank. Referred to predicted time of tide at Astoria, Oregon

In the first column of the table the letters under "Tide" refer to the different tides of the day, HH standing for higher high water, LH for lower high water, LL for lower low water, and HL for higher low water. The corresponding letters on figure 1 have a similar meaning. The minus (–) sign before the hours indicates that the time referred to is earlier than the particular tide, while the plus (+) sign indicates that the time is after the tide. Thus, HH–3 means 3 hours before higher high water, and LL+1 means 1 hour after lower low water at Astoria, Oregon.

It is to be noted that the speeds and directions of the current given in the table refer only to the tidal current. Observations indicate the existence of a permanent current setting 315° with an average speed of 0.5 knot. This makes the northwesterly currents considerably stronger than the southeasterly. A southeasterly current of as much as *1½ knots does not occur except with strong westerly or northwesterly winds, while northwesterly currents of 2 knots or more occur frequently. The greatest observed speed at Swiftsure Bank is 3 knots.*

WIND-DRIVEN CURRENTS

A wind continuing for some time will produce a current the speed of which depends on the speed of the wind, and unless the current is deflected by some other cause, the deflective force of the earth's rotation will cause it to set to the right of the direction of the wind in the northern hemisphere and to the left in the southern hemisphere.

The current produced at off-shore locations by local winds of various strengths and directions was investigated from observations made at five lightships from San Francisco to Swiftsure Bank. The observations were made hourly for periods varying from 3.5 years to 9 years. The average given below and on the next page may prove helpful in estimating the probable current that may result from various winds at the several locations.

Caution.—There were of course many departures from these averages of speed and direction, for the wind -driven current often depends not only on the length of time the wind blows but also on factors other than the local wind at the time and place of the current. The mariner must not, therefore, assume that the given wind will always produce the indicated current.

It should be remembered, too, that the current which a vessel experiences at any time is the resultant of the combined actions of the tidal current, the wind-driven current, and any other currents such as the California Current or currents due to river dishcharge.

Speed.—The table below shows the average speed of current due to winds of various strengths.

Wind speed (miles per hour)	10	20	30	40	50
*Average current speed (knots) due to wind at following lightship stations:**					
San Francisco	*0.3*	*0.3*	*0.5*	*0.6*	*0.7*
Blunts Reef	*0.2*	*0.3*	*0.4*	*0.7*	*0.8*
Columbia River	*0.4*	*0.5*	*0.6*	*0.8*	*0.8*
Umatilla Reef	*0.2*	*0.6*	*0.9*	*1.0*	*0.9*
Swiftsure Bank	*0.5*	*0.5*	*0.5*	*0.7*	*0.8*

*All of these lightships have since been removed.

***Direction.**—The position of the shoreline with respect to the station influences considerably the direction of the currents due to certain winds. The following table shows for each station the average number of degrees by which the wind-driven current is deflected to the right or left of the wind. Thus at the former location of the San Francisco Lightship the table indicates that with a north wind the wind-driven current flows on the average 061° west of south, and with an east wind it flows 023° north of west.*

WIND-DRIVEN CURRENTS

AVERAGE DEVIATION OF CURRENT TO RIGHT OR LEFT OF WIND DIRECTION

*Lightship Station**	*San Francisco*		*Blunts Reef*		*Columbia River*		*Umatilla Reef*		*Swiftsure Bank*	
	Left	*Right*	*Left*	*Right*	*Left*	*Right*	*Left*	*Right*	*Left*	*Right*
Wind from—	*	*	*	*	*	*	*	*	*	*
N	---	*061*	---	*020*	---	*035*	---	*044*	---	*100*
NNE	---	*027*	---	*006*	---	*027*	---	*018*	---	*054*
NE	---	*030*	---	*010*	---	*009*	---	*034*	---	*048*
ENE	---	*031*	---	*032*	---	*029*	---	*048*	---	*033*
E	---	*023*	---	*028*	---	*017*	---	*052*	---	*027*
ESE	---	*029*	---	*007*	---	*002*	---	*038*	---	*018*
SE	---	*021*	*011*	---	*008*	---	---	*025*	---	*009*
SSE	---	*005*	---	*013*	*007*	---	---	*006*	---	*001*
S	*020*	---	---	*001*	*019*	---	*006*	---	*015*	---
SSW	*030*	---	*011*	---	*044*	---	*013*	---	*021*	---
SW	*049*	---	*018*	---	*074*	---	*032*	---	*068*	---
WSW	*040*	---	*028*	---	*121*	---	*052*	---	*088*	---
W	*051*	---	*060*	---	---	*145*	*077*	---	*090*	---
WNW	---	*033*	---	*002*	---	*105*	*006*	---	---	*082*
NW	---	*016*	---	*031*	---	*078*	---	*037*	---	*130*
NNW	---	*017*	---	*043*	---	*053*	---	*025*	---	*111*

*All of these lightships have since been removed.

THE COMBINATION OF CURRENTS

In determining from the current tables the speed and direction of the current at any time, it is frequently necessary to combine the tidal current with the wind-driven current. The following methods indicate how the resultant of two or more currents may be easily determined.

Currents in the same direction.—When two or more currents set in the same direction it is a simple matter to combine them. The resultant current will have a speed which is equal to the sum of all the currents and it will set in the same direction.

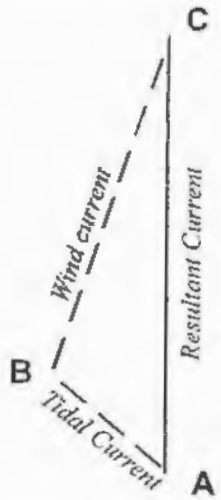
For example, a vessel is near the former location of the San Francisco Lightship at a time when the tidal current is setting 345° with a speed of 0.5 knot, and at the same time a wind of 50 miles per hour is blowing from 150°; What current will the vessel be subject to at that time? Since a wind of 50 from 150° will give rise to a current setting 345° with a speed of 0.7 knot, the combined tidal and wind-driven currents will set in the same direction (345°) with a speed of 0.5 + 0.7 = 1.2 knots.

Currents in opposite directions.—The combination of currents setting in opposite directions is likewise a simple matter. The speed of the smaller current is subtracted from the speed of the greater current, which gives speed of the resultant current; the direction of the resultant current is the same as that of the greater current.

As an example, let it be required to determine the speed of the current at the former location of the San Francisco Lightship when the tidal current is setting 331° with a speed of 0.5 knot, and when a wind of 45 miles per hour is blowing from the northwest. The current produced by a wind of 45 miles per hour from northwest would set 151° with a speed of 0.6 knot. The tidal and wind currents, therefore, set in opposite directions, the wind current being the stronger. Hence, the resultant current will set in the direction of the wind current (151°) with a speed of 0.6 - 0.5 = 0.1 knot.

Currents in different directions.—The combination of currents setting at arbitary angles is shown by a graphical method. Taking the combination of two currents as the simplest case, draw a line whose direction and length (to scale) represent the direction and speed of one of the currents to be combined. From the end of this line draw another line (to the same scale) representing the direction and speed of the second current. A line joining the beginning of the first line with the end of the second line represents the direction and speed of the combined current.

As an example, take the former location of the Umatilla Reef Lightship at a time when the tidal current is 0.4 knot setting 315° and a wind of 50 miles per hour is blowing from 273°. The wind-driven current, according to the preceding section, would be about 0.9 knot setting 025°.



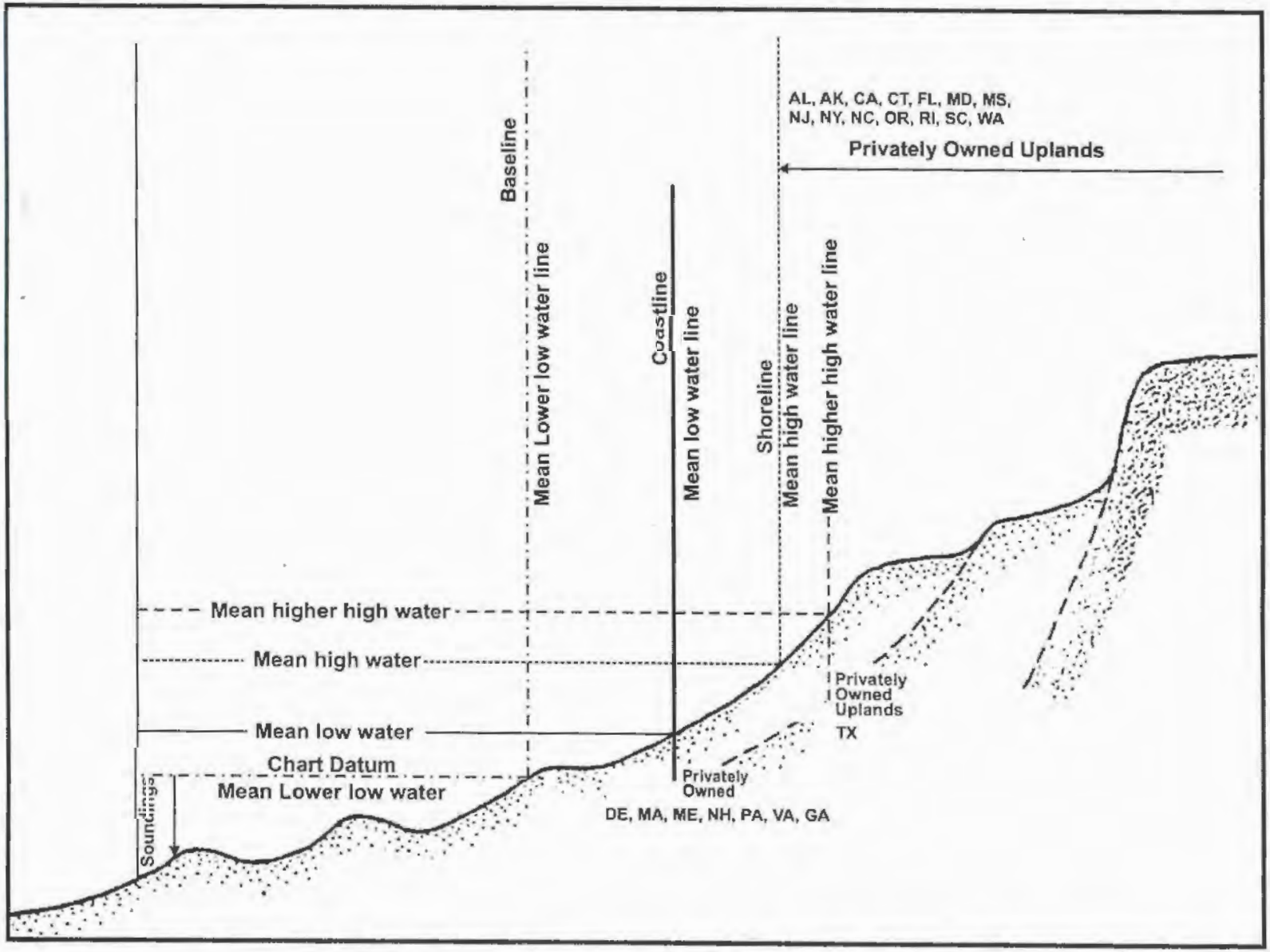
Combination of tidal current and wind-driven current

Using a scale of 2 inches to represent 1 knot draw from point *A* in the diagram above, the line *AB* 0.8 inches in length directed 315° to represent the tidal current. from *B* draw the line *BC* 1.8 inches in length

directed 025° to represent the wind-current. The line *AC* represents the resultant current, which on being measured, is found to be about 2.2 inches in length directed 005° . Therefore, the combined current sets 005° with a speed of 1.1 knots.

The combination of three or more currents is made in the same way as above, for example, the third current to be combined being drawn from point *C*. The resultant current is given by joining the origin with the end of the last line. For drawing the lines, a parallel rule and compass rose is convenient. A protractor or polar coordinate paper may also be used.

OFFICIAL U.S. DATUMS



GLOSSARY OF TERMS

ANNUAL INEQUALITY—Seasonal variation in the water level or current, more or less periodic, due chiefly to meteorological causes.

APOGEAN TIDES OR TIDAL CURRENTS—Tides of decreased range or currents of decreased speed occurring monthly as the result of the Moon being in apogee (farthest from the Earth).

AUTOMATIC TIDE GAGE—An instrument that automatically registers the rise and fall of the tide. In some instruments, the registration is accomplished by recording the heights at regular intervals in digital format, in others by a continuous graph in which the height versus corresponding time of the tide is recorded.

BENCH MARK (BM)—A fixed physical object or marks used as reference for a vertical datum. A *tidal bench mark is* one near a tide station to which the tide staff and tidal datums are referred. A *Geodetic bench mark* identifies a surveyed point in the National Geodetic Vertical Network.

CHART DATUM—The tidal datum to which soundings on a chart are referred. It is usually taken to correspond to low water elevation of the tide, and its depression below mean sea level is represented by the symbol Zo.

CURRENT—Generally, a horizontal movement of water. Currents may be classified as *tidal* and *nontidal*. Tidal currents are caused by gravitational interactions between the Sun, Moon, and Earth and are a part of the same general movement of the sea that is manifested in the vertical rise and fall, called *tide*. Nontidal currents include the permanent currents in the general circulatory systems of the sea as well as temporary currents arising from more pronounced meteorological variability.

CURRENT DIFFERENCE—Difference between the time of slack water (or minimum current) or strength of current in any locality and the time of the corresponding phase of the tidal current at a reference station, for which predictions are given in the *Tidal Current Tables*.

CURRENT ELLIPSE—A graphic representation of a rotary current in which the velocity of the current at different hours of the tidal cycle is represented by radius vectors and vectorial angles. A line joining the extremities of the radius vectors will form a curve roughly approximating an ellipse. The cycle is completed in one-half tidal day or in a whole tidal day according to whether the tidal current is of the semidiurnal or the diurnal type. A current of the mixed type will give a curve of two unequal loops each tidal day.

CURRENT METER—An instrument for measuring the speed and direction or just the speed of a current. The measurements are usually Eulerian since the meter is most often fixed or moored at a specific location.

DATUM (vertical)—For marine applications, a base elevation used as a reference from which to reckon heights or depths. It is called a *tidal datum* when defined by a certain phase of the tide. Tidal datums are local datums and should not be extended into areas which have differing topographic features without substantiating measurements. In order that they may be recovered when needed, such datums are referenced to fixed points known as *bench marks.*

DAYLIGHT SAVING TIME—A time used during the summer in some localities in which clocks are advanced 1 hour from the usual standard time.

DIURNAL—Having a period or cycle of approximately 1 tidal day. Thus, the tide is said to be diurnal when only one high water and one low water occur during a tidal day, and the tidal current is said to be diurnal when there is a single flood and single ebb period in the tidal day. A rotary current is diurnal if it changes its direction through all points of the compass once each tidal day.

DIURNAL INEQUALITY—The difference in height of the two high waters or of the two low waters of each day; also the difference in speed between the two flood tidal currents or the two ebb tidal currents of each day. The difference changes with the declination of the Moon and to a lesser extent with the declination of the Sun. In general, the inequality tends to increase with an increasing declination, either north or south, and to diminish as the Moon approaches the Equator. *Mean diurnal high water inequality* (DHQ) is one-half the average difference between the two high waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of all high waters from the mean of the higher high waters. *Mean diurnal low water inequality* (DLQ) is one-half the average difference between the two low waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of the lower low waters from the mean of all low waters. *Tropic high water inequality* (HWQ) is the average difference between the two high waters of the day at the times of the tropic tides. *Tropic low water inequality* (LWQ) is the average difference between the two low waters of the day at the times of the tropic tides. Mean and tropic inequalities as

defined above are applicable only when the type of tide is either semidiurnal or mixed. Diurnal inequality is sometimes called *declinational inequality*.

DOUBLE EBB—An ebb tidal current where, after ebb begins, the speed increases to a maximum called *first ebb*; it then decreases, reaching a *minimum ebb* near the middle of the ebb period (and at some places it may actually run in a flood direction for a short period); it then again ebbs to a maximum speed called second ebb after which it decreases to slack water.

DOUBLE FLOOD—A flood tidal current where, after flood begins, the speed increases to a maximum called first flood; it then decreases, reaching a minimum flood near the middle of the flood period (and at some places it may actually run in an ebb direction for a short period); it then again floods to a maximum speed called second flood after which it decreases to slack water.

DOUBLE TIDE—A double-headed tide, that is, a high water consisting of two maxima of nearly the same height separated by a relatively small depression, or a low water consisting of two minima separated by a relatively small elevation. Sometimes, it is called an agger.

DURATION OF FLOOD AND DURATION OF EBB—Duration of flood is the interval of time in which a tidal current is flooding, and the *duration of ebb* is the interval in which it is ebbing. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tidal current or a period of 24.84 hours for a diurnal current. In a normal semidiurnal tidal current, the duration of flood and duration of ebb will each be approximately equal to 6.21 hours, but the times may be modified greatly by the presence of a nontidal flow. In a river the duration of ebb is usually longer than the duration of flood because of the freshwater discharge, especially during the spring when snow and ice melt are the predominant influences.

DURATION OF RISE AND DURATION OF FALL—*Duration of rise* is the interval from low water to high water, and *duration of fall* is the interval from high water to low water. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tide or a period of 24.84 hours for a diurnal tide. In a normal semidiurnal tide, the duration of rise and duration of fall will each be approximately equal to 6.21 hours, but in shallow waters and in rivers there is a tendency for a decrease in the duration of rise and a corresponding increase in the duration of fall.

EBB CURRENT—The movement of a tidal current away from shore or down a tidal river or estuary. In the mixed type of reversing tidal current, the terms *greater ebb* and *lesser ebb* are applied respectively to the ebb tidal currents of greater and lesser speed of each day. The terms *maximum ebb* and *minimum ebb* are applied to the maximum and minimum speeds of a current running continuously ebb, the speed alternately increasing and decreasing without coming to a slack or reversing. The expression maximum ebb is also applicable to any ebb current at the time of greatest speed.

EQUATORIAL TIDAL CURRENTS—Tidal currents occurring semimonthly as a result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tidal current is at a minimum.

EQUATORIAL TIDES—Tides occurring semi monthly as the result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tide is at a minimum.

FLOOD CURRENT—The movement of a tidal current toward the shore or up a tidal river or estuary. In the mixed type of reversing current, the terms *greater flood* and *lesser flood* are applied respectively to the flood currents of greater and lesser speed of each day. The terms *maximum flood* and *minimum flood* are applied to the maximum and minimum speeds of a flood current, the speed of which alternately increases and decreases without coming to a slack or reversing. The expression maximum flood is also applicable to any flood current at the time of greatest speed.

GREAT DIURNAL RANGE (Gt)—The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, *diurnal range*.

GREENWICH INTERVAL—An interval referred to the transit of the Moon over the meridian of Greenwich as distinguished from the local interval which is referred to the Moon's transit over the local meri-dian. The relation in hours between Greenwich and local intervals may be expressed by the formula:

Greenwich interval = local interval +0.069 L

where L is the west longitude of the local meridan in degrees. For east longitude, L is to be considered negative.

GULF COAST LOW WATER DATUM—A chart datum. Specifically, the tidal datum formerly designated for the coastal waters of the Gulf Coast of the United States. It was defined as *mean lower low water* when the type of tide was mixed and *mean low water* when the type of tide was diurnal.

HALF-TIDE LEVEL—See *mean tide level*.

GLOSSARY OF TERMS

HARMONIC ANALYSIS—The mathematical process by which the observed tide or tidal current at any place is separated into basic harmonic constituents.

HARMONIC CONSTANTS—The amplitudes and epochs of the harmonic constituents of the tide or tidal current at any place.

HARMONIC CONSTITUENT—One of the harmonic elements in a mathematical expression for the tide-producing force and in corresponding formulas for the tide or tidal current. Each constituent represents a periodic change or variation in the relative positions of the Earth, Moon, and Sun. A single constituent is usually written in the form $y=A \cos (at+\alpha)$, in which y is a function of time as expressed by the symbol t and is reckoned from a specific origin. The coefficient A is called the amplitude of the constituent and is a measure of its relative importance. The angle $(at+\alpha)$ changes uniformly and its value at any time is called the phase of the constituent. The speed of the constituent is the rate of change in its phase and is represented by the symbol a in the formula. The quantity α is the phase of the constituent at the initial instant from which the time is reckoned. The period of the constituent is the time required for the phase to change through 360° and is the cycle of the astronomical condition represented by the constituent.

HIGH WATER (HW)—The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, *high tide*, is discouraged.

HIGHER HIGH WATER (HHW)—The higher of the two high waters of any tidal day.

HIGHER LOW WATER (HLW)—The higher of the two low waters of any tidal day.

HYDRAULIC CURRENT—A current in a channel caused by a difference in the surface level at the two ends. Such a current may be expected in a strait connecting two bodies of water in which the tides differ in time or range. The current in the East River, N.Y., connecting Long Island Sound and New York Harbor, is an example.

KNOT—A unit of speed, one international nautical mile (1,852.0 meters or 6,076.11549 international feet) per hour.

LOW WATER (LW)—The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of meteorological conditions. Use of the synonymous term, *low tide*, is discouraged.

LOWER HIGH WATER (LHW)—The lower of the two high waters of any tidal day.

LOWER LOW WATER (LLW)—The lower of the two low waters of any tidal day.

LUNAR DAY—The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.

LUNAR INTERVAL—The difference in time between the transit of the Moon over the meridian of Greenwich and over a local meridian. The average value of this interval expressed in hours is 0.069 L, in which L is the local longitude in degrees, positive for west longitude and negative for east longitude. The lunar interval equals the difference between the local and Greenwich interval of a tide or current phase.

LUNICURRENT INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and a specified phase of the tidal current following the transit. Examples: *strength of flood interval and strength of ebb interval*, which may be abbreviated to *flood interval and ebb interval*, respectively. The interval is described as local or Greenwich according to whether the reference is to the Moon's transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

LUNITIDAL INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and the following high or low water. The average of all high water intervals for all phases of the Moon is known as *mean high water lunitidal interval* and is abbreviated to high water interval (HWI). Similarly the *mean low water lunitidal interval* is abbreviated to *low water interval* (LWI). The interval is described as local or Greenwich according to whether the reference is to the transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

MEAN HIGH WATER (MHW)—A tidal datum. The arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

GLOSSARY OF TERMS

MEAN HIGHER HIGH WATER (MHHW)—A tidal datum. The arithmetic mean of the higher high water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the higher high water of each pair of high waters, or the only high water of a tidal day is included in the mean.

MEAN HIGHER HIGH WATER LINE (MHHWL)—The intersection of the land with the water surface at the elevation of mean higher high water.

MEAN LOW WATER (MLW)—A tidal datum. The arithmetic mean of the low water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

MEAN LOW WATER SPRINGS (MLWS)—A tidal datum. Frequently abbreviated *spring low water.* The arithmetic mean of the low water heights occurring at the time of the spring tides observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch).

MEAN LOWER LOW WATER (MLLW)—A tidal datum. The arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the lower low water of each pair of low waters, or the only low water of a tidal day is included in the mean.

MEAN RANGE OF TIDE (Mn)—The difference in height between mean high water and mean low water.

MEAN RIVER LEVEL—A tidal datum. The average height of the surface of a tidal river at any point for all stages of the tide observed over a 19-year Metonic cycle (the National Tidal Datum Epoch), usually determined from hourly height readings. In rivers subject to occasional freshets the river level may undergo wide variations, and for practical purposes certain months of the year may be excluded in the determination of tidal datums. For charting purposes, tidal datums for rivers are usually based on observations during selected periods when the river is at or near low water stage.

MEAN SEA LEVEL (MSL)—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.

MEAN TIDE LEVEL (MTL)—Also called half-tide level. A tidal datum midway between mean high water and mean low water.

MIXED TIDE—Type of tide with a large inequality in the high and/or low water heights, with two high waters and two low waters usually occurring each tidal day. In strictness, all tides are mixed but the name is usually applied to the tides intermediate to those predominantly semidiurnal and those predominantly diurnal.

NATIONAL TIDAL DATUM EPOCH—The specific 19-year period adopted by the National Ocean Service as the official time segment over which tide observations are taken and reduced to obtain mean values (e.g., mean lower low water, etc.) for tidal datums. It is necessary for standardization because of periodic and apparent secular trends in sea level. The present National Tidal Datum Epoch is 1960 through 1978. It is reviewed annually for possible revision and must be actively considered for revision every 25 years.

NEAP TIDES OR TIDAL CURRENTS—Tides of decreased range or tidal currents of decreased speed occurring semimonthly as the result of the Moon being in quadrature. The *neap range* (Np) of the tide is the average semidiurnal range occurring at the time of neap tides and is most conveniently computed from the harmonic constants. It is smaller than the mean range where the type of tide is either semidiurnal or mixed and is of no practical significance where the type of tide is diurnal. The average height of the high waters of the neap tides is called *neap high water* or *high water neaps* (MHWN) and the average height of the corresponding low waters is called neap low water or low water neaps (MLWN).

PERIGEAN TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring monthly as the result of the Moon being in perigee or nearest the Earth. The *perigean range* (Pn) of tide is the average semidiurnal range occurring at the time of perigean tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal.

RANGE OF TIDE—The difference in height between consecutive high and low waters, the *mean range* is the difference in height between mean high water and mean low water. Where the type of tide is diurnal the mean range is the same as the diurnal range.

For other ranges, see great diurnal, spring, neap, perigean, apogean, and tropic tides.

REFERENCE STATION—A tide or current station for which independent daily predictions are given in the *Tide Tables and Tidal Current Tables,* and from which corresponding predictions are obtained for subordinate stations by means of differences and ratios.

REVERSING CURRENT—A tidal current which flows alternately in approximately opposite directions with a slack water at each reversal of direction. Currents of this type usually occur in rivers and straits where the direction of flow is more or less restricted to certain channels. When the movement is towards the shore or up a stream, the current is said to be flooding, and when in the opposite direction it is said to be ebbing. The combined flood and ebb movement including the slack water covers, on an average, 12.42 hours for the semidiurnal current. If unaffected by a nontidal flow, the flood and ebb movements will each last about 6 hours, but when combined with such a flow, the durations of flood and ebb may be quite unequal. During the flow in each direction the speed of the current will vary from zero at the time of slack water to a maximum about midway between the slacks.

ROTARY CURRENT—A tidal current that flows continually with the direction of flow changing through all points of the compass during the tidal period. Rotary currents are usually found offshore where the direction of flow is not restricted by any barriers. The tendency for the rotation in direction has its origin in the Coriolis force and, unless modified by local conditions, the change is clockwise in the Northern Hemisphere and counterclockwise in the Southern. The speed of the current usually varies throughout the tidal cycle, passing through the two maxima in approximately opposite directions and the two minima with the direction of the current at approximately 90° from the direction at time of maximum speed.

SEMIDIURNAL—Having a period or cycle of approximately one-half of a tidal day. The predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

SET (OF CURRENT)—The direction *towards* which the current flows.

SLACK WATER—The state of a tidal current when its speed is near zero, especially the moment when a reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progressive tidal waves, slack water occurs midway between high and low water.

SPRING TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring semimonthly as the result of the Moon being new or full. The *spring range* (Sg) of tide is the average semidiurnal range occurring at the time of spring tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The mean of the high waters of the spring tide is called *spring high water or mean high water springs* (MHWS), and the average height of the corresponding low waters is called *spring low water or mean low water springs* (MLWS).

STAND OF TIDE—Sometimes called a platform tide. An interval at high or low water when there is no sensible change in the height of the tide. The water level is stationary at high and low water for only an instant, but the change in level near these times is so slow that it is not usually perceptible. In general, the duration of the apparent stand will depend upon the range of tide, being longer for a small range than for a large range, but where there is a tendency for a double tide the stand may last for several hours even with a large range of tide.

STANDARD TIME—A kind of time based upon the transit of the Sun over a certain specified meridian, called the *time meridian*, and adopted for use over a considerable area. With a few exceptions, standard time is based upon some meridian which differs by a multiple of 15° from the meridian of Greenwich.

STRENGTH OF CURRENT—Phase of tidal current in which the speed is a maximum; also the speed at this time. Beginning with slack before flood in the period of a reversing tidal current (or minimum before flood in a rotary current), the speed gradually increases to flood strength and then diminishes to slack before ebb (or minimum before ebb in a rotary current), after which the current turns in direction, the speed increases to ebb strength and then diminishes to slack before flood completing the cycle. If it is assumed that the speed throughout the cycle varies as the ordinates of a cosine curve, it can

be shown that the average speed for an entire flood or ebb period is equal to $2/\pi$ or 0.6366 of the speed of the corresponding strength of current.

SUBORDINATE CURRENT STATION—(1) A current station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a control current station. (2) A station listed in the *Tidal Current Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station .

SUBORDINATE TIDE STATION—(1) A tide station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a tide station with a relatively long series of observations. (2) A station listed in the *Tide Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

TIDAL CURRENT TABLES—Tables which give daily predictions of the times and speeds of the tidal currents. These predictions are usually supplemented by current differences and constants through which additional predictions can be obtained for numerous other places.

TIDAL DIFFERENCE—Difference in time or height of a high or low water at a subordinate station and at a reference station for which predictions are given in the *Tide Tables*. The difference, when applied according to sign to the prediction at the reference station, gives the corresponding time or height for the subordinate station .

TIDE—The periodic rise and fall of the water resulting from gravitational interactions between the Sun, Moon, and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

TIDE TABLES—Tables which give daily predictions of the times and heights of high and low waters. These predictions are usually supplemented by tidal differences and constants through which additional predictions can be obtained for numerous other places.

TIME MERIDIAN—A meridian used as a reference for time.

TROPIC CURRENTS—Tidal currents occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times the tendency of the Moon to produce a diurnal inequality in the current is at a maximum.

TROPIC RANGES—The *great tropic range* (Gc), or *tropic range*, is the difference in height between tropic higher high water and tropic lower low water. The *small tropic range* (Sc) is the difference in height between tropic lower high water and tropic higher low water. The *mean tropic range* (Mc) is the mean between the great tropic range and the small tropic range. The small tropic range and the mean tropic range are applicable only when the type of tide is semidiurnal or mixed. Tropic ranges are most conveniently computed from the harmonic constants.

TROPIC TIDES—Tides occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times there is a tendency for an increase in the diurnal range. The tidal datums pertaining to the tropic tides are designated as *tropic higher high water* (TcHHW), *tropic lower high water* (TcLHW), *tropic higher low water* (TcHLW), and *tropic lower low water* (TcLLW).

TYPE OF TIDE—A classification based on characteristic forms of a tide curve. Qualitatively, when the two high waters and two low waters of each tidal day are approximately equal in height, the tide is said to be *semidiurnal*; when there is a relatively large diurnal inequality in the high or low waters or both, it is said to be *mixed*; and when there is only one high water and one low water in each tidal day, it is said to be *diurnal*.

VANISHING TIDE—In a mixed tide with very large diurnal inequality, the lower high water (or higher low water) frequently becomes indistinct (or vanishes) at time of extreme declinations. During these periods the diurnal tide has such overriding dominance that the semidiurnal tide, although still present, cannot be readily seen on the tide curve.