

Mandatory Boater Education



Washington's Mandatory Safety Education Program

Boating safety education has proven to be successful in reducing boating accidents, injuries, and conflicts among boaters, shoreline property owners, and others interested in enjoying Washington's waterways. When the state legislature passed a law in 2005 that requires boat operators to take boater safety education, Washington joined 36 other states that also have an education requirement for boat operators.

Washington's boater education law will eventually require all Washington recreational motorboat operators to carry a Boater Education Card, which shows that they have completed a basic boater education course. This applies to operators 12 years of age and older operating any type of vessel powered by 15 horsepower or more.

The law is being phased in by operator age over several years as shown on the phase-in schedule on page 34. In 2011, all persons who are 12 to 35 years of age and who have not passed a boating safety education course previously must take an approved course and pass the course exam before they can operate a boat legally. After passing the exam, the operator applies for a Boater Education Card.

- ◆ The card is issued by the Washington State Parks and Recreation Commission for \$10.00.
- ◆ The card shows that the boat operator knows the basics of safe boating and how to share the waters safely.
- ◆ Unlike a driver's license which must be renewed, a Boater Education Card never expires.

For additional information about obtaining a Boater Education Card or other details on the Mandatory Boater Safety Education Program, visit the State Parks website at www.parks.wa.gov/boating/boatered/ or call **360-902-8555**.

By taking a boating safety course and applying the lessons you learn, you help to ensure that our waterways are the safest they can be. In addition, completing a course may reduce your boat insurance by 10% to 15%. Be sure to ask your insurance agent.

Definitions in This Handbook

Unless otherwise noted, the following definitions can be found in the Washington Administrative Code (WAC) Chapter 352-60, Recreational Vessel Equipment and Operation.

Coastal waters means those waters (i.e., bays, sounds, harbors, rivers, inlets, etc.) directly connected to the territorial seas of the state of Washington where any entrance exceeds two nautical miles between opposite shorelines to the first point where the largest distance between shorelines narrows to two miles, as shown on the current edition of the appropriate National Ocean Service chart used for navigation.

Inland waters means the waters within the territorial limits of Washington state shoreward of the demarcation lines dividing the high seas from harbors, rivers, bays, sounds, and other inland waters, as established in Chapter 33, Code of Federal Regulations, Part 80, which are not governed by the International Regulations for Preventing Collisions at Sea, 1972, (72 COLREGS), Title 33, Code of Federal Regulations, Part 81-72, Appendix A.

International waters means the high seas within the territorial limits of Washington state seaward of the demarcation lines dividing the high seas from the harbors, rivers, bays, sounds, and other inland waters, as established in Chapter 33, Code of Federal Regulations, Part 80, and are governed by the International Regulations for Preventing Collisions at Sea, 1972, (72 COLREGS), Chapter 33, Code of Federal Regulations, Part 81-72, Appendix A.

Navigable waters of the state means those waters of the state, and their adjoining shorelines, that are subject to the ebb and flow of the tide and/or are presently used, have been used in the past, or may be susceptible for use to transport intrastate, interstate, or foreign commerce. [As found in the Revised Code of Washington (RCW) Chapter 88.46, Vessel Oil Spill Prevention and Response.]

Operator means an individual who steers, directs, or otherwise has physical control of a vessel that is underway or exercises actual authority to control the person at the helm.

Power-driven vessel means any vessel propelled by machinery.

Propulsion machinery and **mechanical power** mean that a device provides motion to a vessel through such means as combustion, steam or electric machinery. [As found in the WAC Chapter 308-93, Vessel registration and certificates of title.]

Waters of the state means any waters within the territorial limits of Washington State.

Information in this handbook does not replace what is specifically legal for boating in Washington, which is found in the Revised Code of Washington, Washington Administrative Code, and federal law.

WASHINGTON REQUIRED EQUIPMENT CHECKLIST



	PWCs	Boats Less Than 16'	Boats 16' to Less Than 26'	Boats 26' to Less Than 40'	Boats 40' to Less Than 65'	Human Powered: Any Length
		Class A	Class 1	Class 2	Class 3	
Vessel Registration On Board	yes	yes ⁶	yes	yes	yes	no
Registration Decals Displayed	yes	yes	yes	yes	yes	no
Registration Numbers Displayed	yes	yes ⁶	yes	yes ⁷	yes ⁷	no
Boater Education Card (power-driven boats over 15 hp)	⁹ yes	yes ⁶	yes	yes	yes	no
PFD: Type I, II, III, or V (one per person)	yes ¹	yes ²	yes ²	yes	yes	yes
PFD: Type IV	no	no	yes	yes	yes	no
Type B-I Fire Extinguisher (power-driven boats only)	yes	yes	yes	yes ⁸	yes ⁸	no
Ignition Safety Switch	yes	no	no	no	no	no
Backfire Flame Arrestor	³ yes	yes	yes	yes	yes	no
Ventilation System	yes	yes	yes	yes	yes	no
Muffler	yes	yes	yes	yes	yes	no
Horn, Whistle, or Bell	yes	yes	yes	yes	yes	yes
Skier-Down Flag	⁴ yes	yes	yes	yes	yes	no
Daytime Visual Distress Signals	¹⁰ no	yes	yes	yes	yes	16' and over
Nighttime Visual Distress Signals	¹⁰ n/a	yes	yes	yes	yes	yes
Navigation Lights	⁵ n/a	yes	yes	yes	yes	at least one lantern or flashlight
CO Warning Sticker	no	yes	yes	yes	yes	no

yes = required by state

no = not required by state

n/a = not applicable

- ① Those on personal watercraft must *wear* a life jacket (personal flotation device) at all times.
- ② Children 12 years and younger are required to *wear* U.S. Coast Guard–approved life jackets in Washington State on boats shorter than 19 feet whenever the vessel is underway or when they’re on an open deck or open cockpit on any waters of the state.
- ③ Required on all gasoline engines except outboard engines.
- ④ Required to be carried on board when towing person(s) on water skis or similar devices and displayed whenever the towed person(s) is preparing to ski or has fallen into the water.
- ⑤ Vessels must display the proper navigation lights between the hours of sunset and sunrise.
- ⑥ Applies to all power-driven boats on federally controlled waters and sailboats 16 feet and longer on any waters of the state. Does not apply to boats under 16 feet long with motors of 10 hp or less when used on waters under state jurisdiction only.
- ⑦ State registration numbers are not displayed on boats documented with USCG under the Federal Registration System, but display of valid registration decals is required.
- ⑧ Boats 26 feet up to 40 feet long must carry two B-I or one B-II; boats 40 feet up to 65 feet long must carry three B-I or one B-II and one B-I.
- ⑨ See pages 34-35 for boater education card requirements.
- ⑩ VDSs are required on coastal waters and the Strait of Juan de Fuca east to Puget Sound and the northern tip of the Kitsap Peninsula at Foul Weather Bluff.

Tide Tables for Washington

Using the Tide Tables

The following pages give the predicted tide tables for Seattle, Port Townsend, Aberdeen, and Astoria as provided by the National Oceanic and Atmospheric Administration (NOAA). These locations are referred to as “reference stations.” The tables show the predicted time and the height of each high tide (denoted by an “H”) and low tide (denoted by an “L”). The heights given are relative to Mean Lower Low Water, which is the average of the lowest low tide from each day. The averages are taken over a period called the National Tidal Datum Epoch (a 19-year epoch). Days marked with an asterisk (*) indicate beginning of Daylight Savings Time which begins 3/13/2011 2:00 am or Standard Time (**) which begins 11/6/2011 2:00 am. For more information on tide tables and other locations, visit NOAA’s website at www.co-ops.nos.noaa.gov.

Predicting Tides at Secondary Locations

Tide predictions at secondary stations (locations) can be made as adjustments to the tide tables shown on the following pages. Although the application of time and height adjustments will generally provide reasonably accurate approximations, they cannot result in predictions as accurate as the reference stations’ tables.

To determine the time and height of high and low tides at any of the secondary locations listed at the bottom of this page, follow these steps.

1. Go to the table for the reference station listed for that location and find the entry for the day of interest.
2. Adjust the times in the reference station table by the differences shown for High and Low tides shown in the “Time Diff.” column below. A plus sign (+) indicates that the tide at the location occurs later than at the reference station and the adjustment should be added; a minus sign (-) indicates that it is earlier and should be subtracted. In some cases, to obtain an a.m. tide, it may be necessary to use the preceding day’s p.m. tide at the reference station or to obtain a p.m. tide, it may be necessary to use the following day’s a.m. tide.
3. Adjust the water levels (heights of the tides) in the reference station table by the value shown for High and Low tides shown in the “Ht. Diff.” column below. To obtain the approximate height of the tide at the secondary location, multiply the height of tide at the reference station by the value listed.

Secondary Location	Reference Sta.	Time Diff.		Ht. Diff.	
		High	Low	High	Low
Anacortes	Port Townsend	+0:22	+0:33	0.96	1.00
Bellingham	Port Townsend	+0:38	+1:11	0.99	0.97
Blaine	Port Townsend	+0:56	+1:29	1.11	1.06
Olympia	Seattle	+0:45	+0:57	1.29	1.08
Westport	Aberdeen	-0:22	-0:35	0.90	0.90

Seattle 2011 Water Level Predictions

All times listed are in local time, and all heights are in feet referenced to Mean Lower Low Water (MLLW).

Date	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
January								
1	Sa	3:53am	11.2 H	8:36am	8 L	1:26pm	11.5 H	8:46pm -1.7 L
2	Su	4:41am	11.9 H	9:40am	7.9 L	2:17pm	11.2 H	9:29pm -2 L
3	M	5:21am	12.2 H	10:33am	7.6 L	3:06pm	11 H	10:11pm -1.9 L
4	Tu	5:56am	12.4 H	11:18am	7.3 L	3:52pm	10.7 H	10:50pm -1.7 L
5	W	6:25am	12.4 H	11:59am	6.9 L	4:38pm	10.3 H	11:28pm -1.2 L
6	Th	6:52am	12.4 H	12:39pm	6.4 L	5:24pm	9.9 H	
7	F	12:05am	-0.5 L	7:18am	12.3 H	1:18pm	5.9 L	6:12pm 9.4 H
8	Sa	12:42am	0.4 L	7:45am	12.3 H	1:58pm	5.3 L	7:03pm 8.9 H
9	Su	1:18am	1.5 L	8:14am	12.2 H	2:41pm	4.6 L	7:59pm 8.4 H
10	M	1:55am	2.8 L	8:45am	12 H	3:26pm	3.9 L	9:04pm 8 H
11	Tu	2:34am	4.2 L	9:18am	11.7 H	4:14pm	3.2 L	10:22pm 7.8 H
12	W	3:17am	5.7 L	9:54am	11.4 H	5:05pm	2.5 L	
13	Th	12:05am	8.1 H	4:14am	7.1 L	10:34am	11.1 H	5:57pm 1.7 L
14	F	2:04am	8.8 H	5:36am	8.1 L	11:19am	10.8 H	6:48pm 0.9 L
15	Sa	3:15am	9.8 H	7:12am	8.6 L	12:08pm	10.7 H	7:36pm 0 L
16	Su	3:57am	10.6 H	8:26am	8.7 L	12:59pm	10.7 H	8:22pm -0.9 L
17	M	4:29am	11.2 H	9:17am	8.5 L	1:50pm	10.9 H	9:06pm -1.7 L
18	Tu	4:57am	11.7 H	9:59am	8 L	2:40pm	11.1 H	9:49pm -2.2 L
19	W	5:24am	12.1 H	10:40am	7.4 L	3:31pm	11.3 H	10:32pm -2.4 L
20	Th	5:52am	12.5 H	11:21am	6.6 L	4:23pm	11.3 H	11:15pm -2.2 L
21	F	6:22am	12.8 H	12:06pm	5.6 L	5:17pm	11.1 H	11:58pm -1.5 L
22	Sa	6:54am	13 H	12:53pm	4.5 L	6:15pm	10.7 H	
23	Su	12:41am	-0.3 L	7:28am	13.2 H	1:43pm	3.4 L	7:18pm 10.1 H
24	M	1:26am	1.3 L	8:05am	13.1 H	2:35pm	2.4 L	8:27pm 9.5 H
25	Tu	2:13am	3.1 L	8:43am	12.9 H	3:32pm	1.5 L	9:48pm 9.1 H
26	W	3:06am	5 L	9:26am	12.5 H	4:32pm	0.9 L	11:31pm 9 H
27	Th	4:13am	6.7 L	10:15am	11.9 H	5:36pm	0.3 L	
28	F	1:27am	9.6 H	5:44am	7.8 L	11:12am	11.4 H	6:40pm -0.1 L
29	Sa	2:51am	10.5 H	7:30am	8.1 L	12:15pm	10.9 H	7:39pm -0.5 L
30	Su	3:46am	11.3 H	8:49am	7.8 L	1:18pm	10.6 H	8:31pm -0.8 L
31	M	4:28am	11.7 H	9:44am	7.3 L	2:16pm	10.5 H	9:17pm -0.9 L
February								
1	Tu	5:02am	11.9 H	10:27am	6.8 L	3:08pm	10.4 H	9:57pm -0.8 L
2	W	5:29am	12 H	11:03am	6.2 L	3:54pm	10.3 H	10:35pm -0.5 L
3	Th	5:51am	12 H	11:35am	5.7 L	4:38pm	10.1 H	11:10pm 0 L
4	F	6:10am	12 H	12:06pm	5 L	5:21pm	10 H	11:43pm 0.7 L
5	Sa	6:31am	12 H	12:37pm	4.4 L	6:04pm	9.7 H	
6	Su	12:17am	1.6 L	6:54am	12 H	1:10pm	3.7 L	6:51pm 9.5 H
7	M	12:51am	2.6 L	7:21am	11.9 H	1:46pm	3.1 L	7:40pm 9.2 H
8	Tu	1:25am	3.8 L	7:50am	11.7 H	2:26pm	2.6 L	8:36pm 8.9 H
9	W	2:02am	5.1 L	8:21am	11.3 H	3:10pm	2.1 L	9:41pm 8.7 H
10	Th	2:43am	6.3 L	8:55am	10.9 H	4:00pm	1.8 L	11:05pm 8.7 H
11	F	3:35am	7.5 L	9:36am	10.5 H	4:56pm	1.4 L	
12	Sa	1:04am	9 H	4:58am	8.3 L	10:26am	10.2 H	5:57pm 0.8 L
13	Su	2:33am	9.7 H	6:45am	8.6 L	11:29am	10.1 H	6:56pm 0.2 L
14	M	3:17am	10.4 H	8:03am	8.3 L	12:35pm	10.2 H	7:51pm -0.5 L
15	Tu	3:47am	11 H	8:53am	7.7 L	1:36pm	10.5 H	8:41pm -1.1 L
16	W	4:13am	11.4 H	9:34am	6.8 L	2:34pm	10.9 H	9:27pm -1.4 L
17	Th	4:39am	11.9 H	10:14am	5.7 L	3:30pm	11.2 H	10:12pm -1.3 L
18	F	5:07am	12.3 H	10:55am	4.4 L	4:25pm	11.4 H	10:56pm -0.8 L
19	Sa	5:36am	12.6 H	11:38am	3.1 L	5:21pm	11.4 H	11:39pm 0.2 L
20	Su	6:09am	12.9 H	12:23pm	1.9 L	6:19pm	11.2 H	
21	M	12:24am	1.5 L	6:43am	12.9 H	1:11pm	0.9 L	7:20pm 10.8 H
22	Tu	1:10am	3.1 L	7:21am	12.7 H	2:01pm	0.3 L	8:27pm 10.3 H
23	W	2:00am	4.7 L	8:01am	12.2 H	2:54pm	0 L	9:44pm 9.9 H
24	Th	2:57am	6.2 L	8:48am	11.6 H	3:53pm	0.1 L	11:21pm 9.8 H
25	F	4:14am	7.3 L	9:43am	10.8 H	4:59pm	0.3 L	
26	Sa	1:07am	10.1 H	6:02am	7.7 L	10:51am	10.1 H	6:08pm 0.4 L

Date	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.	
27	Su	2:23am	10.6 H	7:43am	7.4 L	12:08pm	9.7 H	7:15pm	0.4 L
28	M	3:15am	11 H	8:47am	6.7 L	1:21pm	9.6 H	8:12pm	0.4 L
March									
1	Tu	3:53am	11.3 H	9:32am	5.9 L	2:24pm	9.7 H	8:59pm	0.5 L
2	W	4:22am	11.3 H	10:08am	5.2 L	3:15pm	9.8 H	9:40pm	0.7 L
3	Th	4:43am	11.3 H	10:37am	4.5 L	4:00pm	9.9 H	10:16pm	1.1 L
4	F	5:00am	11.3 H	11:03am	3.8 L	4:40pm	10 H	10:49pm	1.7 L
5	Sa	5:17am	11.3 H	11:29am	3.1 L	5:20pm	10.1 H	11:22pm	2.4 L
6	Su	5:38am	11.4 H	11:56am	2.4 L	6:01pm	10.1 H	11:55pm	3.3 L
7	M	6:02am	11.3 H	12:27pm	1.8 L	6:43pm	10.1 H		
8	Tu	12:29am	4.1 L	6:29am	11.2 H	1:01pm	1.3 L	7:27pm	10 H
9	W	1:05am	5.1 L	6:58am	10.9 H	1:38pm	1 L	8:17pm	9.9 H
10	Th	1:44am	6 L	7:29am	10.6 H	2:21pm	0.8 L	9:14pm	9.6 H
11	F	2:28am	6.9 L	8:03am	10.2 H	3:10pm	0.7 L	10:24pm	9.4 H
12	Sa	3:25am	7.6 L	8:45am	9.8 H	4:07pm	0.7 L	11:51pm	9.5 H
13	Su*	5:49am	8 L	10:46am	9.4 H	6:10pm	0.6 L		
14	M	2:15am	9.8 H	7:27am	7.8 L	12:03pm	9.3 H	7:16pm	0.4 L
15	Tu	3:08am	10.3 H	8:37am	7.1 L	1:20pm	9.5 H	8:17pm	0.1 L
16	W	3:44am	10.8 H	9:25am	6 L	2:30pm	9.9 H	9:12pm	0 L
17	Th	4:14am	11.2 H	10:06am	4.7 L	3:33pm	10.5 H	10:02pm	0.1 L
18	F	4:44am	11.7 H	10:47am	3.2 L	4:32pm	11 H	10:49pm	0.6 L
19	Sa	5:14am	12.1 H	11:28am	1.7 L	5:29pm	11.4 H	11:35pm	1.4 L
20	Su	5:46am	12.3 H	12:10pm	0.3 L	6:26pm	11.6 H		
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23	W	1:59am	4.9 L	7:39am	11.9 H	2:28pm	-1.4 L	9:25pm	11.1 H
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25	F	4:00am	6.7 L	9:15am	10.4 H	4:17pm	-0.4 L	11:57pm	10.4 H
26	Sa	5:27am	7.1 L	10:19am	9.5 H	5:20pm	0.4 L		
27	Su	1:23am	10.4 H	7:14am	6.9 L	11:37am	8.8 H	6:30pm	1 L
28	M	2:31am	10.5 H	8:33am	6.1 L	1:04pm	8.5 H	7:40pm	1.5 L
29	Tu	3:20am	10.7 H	9:26am	5.1 L	2:23pm	8.6 H	8:41pm	1.8 L
30	W	3:56am	10.8 H	10:06am	4.3 L	3:28pm	9 H	9:32pm	2.1 L
31	Th	4:22am	10.8 H	10:37am	3.4 L	4:20pm	9.3 H	10:15pm	2.6 L
April									
1	F	4:41am	10.8 H	11:03am	2.6 L	5:05pm	9.7 H	10:53pm	3.1 L
2	Sa	5:00am	10.8 H	11:26am	1.9 L	5:45pm	10 H	11:28pm	3.7 L
3	Su	5:20am	10.8 H	11:51am	1.1 L	6:22pm	10.3 H		
4	M	12:02am	4.4 L	5:44am	10.7 H	12:18pm	0.5 L	7:00pm	10.5 H
5	Tu	12:37am	5 L	6:10am	10.6 H	12:49pm	0 L	7:39pm	10.7 H
6	W	1:14am	5.7 L	6:39am	10.5 H	1:24pm	-0.4 L	8:20pm	10.7 H
7	Th	1:53am	6.2 L	7:09am	10.2 H	2:02pm	-0.5 L	9:06pm	10.6 H
8	F	2:36am	6.7 L	7:42am	9.9 H	2:45pm	-0.5 L	9:58pm	10.5 H
9	Sa	3:26am	7.2 L	8:21am	9.5 H	3:34pm	-0.3 L	10:57pm	10.3 H
10	Su	4:28am	7.4 L	9:12am	9.1 H	4:28pm	0 L		
11	M	12:03am	10.2 H	5:48am	7.2 L	10:23am	8.7 H	5:30pm	0.4 L
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18	M	4:58am	12.1 H	11:44am	-2 L	6:32pm	11.8 H		
19	Tu	12:07am	4.8 L	5:37am	11.9 H	12:28pm	-2.6 L	7:27pm	12 H
20	W	12:59am	5.5 L	6:18am	11.6 H	1:13pm	-2.7 L	8:23pm	11.9 H
21	Th	1:54am	6.1 L	7:03am	11 H	2:00pm	-2.3 L	9:20pm	11.7 H
22	F	2:54am	6.5 L	7:53am	10.2 H	2:50pm	-1.5 L	10:20pm	11.3 H
23	Sa	4:04am	6.7 L	8:49am	9.3 H	3:43pm	-0.5 L	11:23pm	11 H
24	Su	5:30am	6.4 L	9:58am	8.5 H	4:40pm	0.5 L		
25	M	12:25am	10.8 H	6:57am	5.8 L	11:19am	7.8 H	5:44pm	1.6 L
26	Tu	1:21am	10.6 H	8:03am	4.8 L	12:50pm	7.6 H	6:51pm	2.5 L
27	W	2:06am	10.6 H	8:51am	3.8 L	2:16pm	7.9 H	7:56pm	3.3 L
28	Th	2:41am	10.6 H	9:28am	2.8 L	3:27pm	8.4 H	8:53pm	3.9 L
29	F	3:09am	10.5 H	9:58am	1.9 L	4:23pm	9.1 H	9:43pm	4.6 L
30	Sa	3:34am	10.5 H	10:24am	1 L	5:10pm	9.7 H	10:27pm	5.2 L

Date	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.	
May									
1	Su	3:59am	10.5 H	10:49am	0.3 L	5:50pm	10.2 H	11:07pm	5.7 L
2	M	4:25am	10.4 H	11:15am	-0.4 L	6:26pm	10.6 H	11:46pm	6.2 L
3	Tu	4:53am	10.3 H	11:45am	-1 L	7:01pm	11 H		
4	W	12:24am	6.6 L	5:23am	10.2 H	12:19pm	-1.4 L	7:38pm	11.2 H
5	Th	1:03am	6.9 L	5:55am	10 H	12:56pm	-1.7 L	8:16pm	11.3 H
6	F	1:45am	7 L	6:30am	9.8 H	1:36pm	-1.7 L	8:59pm	11.3 H
7	Sa	2:32am	7.1 L	7:09am	9.5 H	2:19pm	-1.5 L	9:44pm	11.2 H
8	Su	3:24am	7.1 L	7:57am	9.1 H	3:07pm	-1.1 L	10:33pm	11.2 H
9	M	4:26am	6.8 L	8:58am	8.6 H	3:58pm	-0.4 L	11:23pm	11.1 H
10	Tu	5:34am	6.1 L	10:15am	8.1 H	4:54pm	0.5 L		
11	W	12:11am	11.2 H	6:41am	5 L	11:42am	7.9 H	5:56pm	1.6 L
12	Th	12:56am	11.3 H	7:38am	3.5 L	1:11pm	8.1 H	7:01pm	2.7 L
13	F	1:38am	11.5 H	8:27am	1.8 L	2:35pm	8.8 H	8:06pm	3.8 L
14	Sa	2:18am	11.7 H	9:12am	0.1 L	3:48pm	9.7 H	9:09pm	4.7 L
15	Su	2:57am	11.9 H	9:56am	-1.4 L	4:52pm	10.7 H	10:08pm	5.5 L
16	M	3:37am	11.9 H	10:39am	-2.5 L	5:49pm	11.4 H	11:04pm	6.1 L
17	Tu	4:18am	11.8 H	11:22am	-3.2 L	6:41pm	11.9 H	11:59pm	6.5 L
18	W	5:01am	11.4 H	12:06pm	-3.4 L	7:31pm	12.1 H		
19	Th	12:54am	6.7 L	5:47am	11 H	12:50pm	-3.1 L	8:20pm	12.1 H
20	F	1:50am	6.7 L	6:36am	10.3 H	1:36pm	-2.5 L	9:07pm	12 H
21	Sa	2:50am	6.6 L	7:29am	9.5 H	2:22pm	-1.6 L	9:54pm	11.7 H
22	Su	3:55am	6.2 L	8:28am	8.7 H	3:10pm	-0.5 L	10:40pm	11.5 H
23	M	5:04am	5.7 L	9:35am	7.9 H	4:00pm	0.8 L	11:25pm	11.2 H
24	Tu	6:14am	4.9 L	10:53am	7.3 H	4:54pm	2.2 L		
25	W	12:07am	11 H	7:13am	4 L	12:23pm	7.1 H	5:53pm	3.5 L
26	Th	12:47am	10.8 H	8:01am	2.9 L	1:58pm	7.4 H	6:58pm	4.7 L
27	F	1:24am	10.7 H	8:40am	1.9 L	3:20pm	8.2 H	8:05pm	5.6 L
28	Sa	1:58am	10.6 H	9:12am	1 L	4:23pm	9 H	9:07pm	6.3 L
29	Su	2:31am	10.4 H	9:42am	0.1 L	5:12pm	9.8 H	10:02pm	6.8 L
30	M	3:04am	10.4 H	10:12am	-0.7 L	5:52pm	10.4 H	10:49pm	7.2 L
31	Tu	3:37am	10.3 H	10:44am	-1.3 L	6:27pm	10.9 H	11:31pm	7.4 L
June									
1	W	4:10am	10.2 H	11:18am	-1.9 L	7:00pm	11.2 H		
2	Th	12:11am	7.5 L	4:46am	10.1 H	11:55am	-2.2 L	7:33pm	11.5 H
3	F	12:51am	7.4 L	5:24am	10 H	12:34pm	-2.4 L	8:08pm	11.7 H
4	Sa	1:34am	7.3 L	6:06am	9.8 H	1:15pm	-2.4 L	8:44pm	11.8 H
5	Su	2:20am	6.9 L	6:54am	9.5 H	1:59pm	-2 L	9:22pm	11.9 H
6	M	3:11am	6.4 L	7:50am	9.1 H	2:44pm	-1.3 L	10:02pm	11.9 H
7	Tu	4:07am	5.6 L	8:56am	8.5 H	3:32pm	-0.1 L	10:42pm	12 H
8	W	5:07am	4.6 L	10:13am	8 H	4:23pm	1.3 L	11:23pm	12 H
9	Th	6:07am	3.2 L	11:40am	7.8 H	5:20pm	2.9 L		
10	F	12:05am	12 H	7:05am	1.7 L	1:15pm	8 H	6:26pm	4.5 L
11	Sa	12:48am	11.9 H	7:58am	0.2 L	2:48pm	8.8 H	7:39pm	5.7 L
12	Su	1:33am	11.9 H	8:48am	-1.2 L	4:07pm	9.9 H	8:52pm	6.6 L
13	M	2:18am	11.8 H	9:34am	-2.2 L	5:09pm	10.8 H	9:59pm	7.1 L
14	Tu	3:05am	11.6 H	10:20am	-2.9 L	6:00pm	11.5 H	11:00pm	7.2 L
15	W	3:52am	11.3 H	11:04am	-3.2 L	6:45pm	11.9 H	11:56pm	7.1 L
16	Th	4:40am	11 H	11:48am	-3.2 L	7:27pm	12.1 H		
17	F	12:48am	6.9 L	5:29am	10.5 H	12:31pm	-2.8 L	8:06pm	12.1 H
18	Sa	1:40am	6.5 L	6:20am	9.9 H	1:14pm	-2.1 L	8:42pm	12 H
19	Su	2:31am	6.1 L	7:13am	9.3 H	1:57pm	-1.1 L	9:17pm	11.9 H
20	M	3:23am	5.5 L	8:09am	8.6 H	2:39pm	0 L	9:51pm	11.7 H
21	Tu	4:17am	4.9 L	9:11am	7.9 H	3:21pm	1.4 L	10:26pm	11.5 H
22	W	5:11am	4.1 L	10:22am	7.4 H	4:06pm	2.9 L	11:01pm	11.3 H
23	Th	6:04am	3.3 L	11:45am	7.2 H	4:56pm	4.4 L	11:38pm	11 H
24	F	6:54am	2.4 L	1:26pm	7.4 H	5:56pm	5.8 L		
25	Sa	12:17am	10.7 H	7:39am	1.5 L	3:05pm	8.2 H	7:11pm	6.8 L
26	Su	12:57am	10.5 H	8:21am	0.7 L	4:16pm	9.1 H	8:31pm	7.5 L
27	M	1:38am	10.3 H	9:00am	-0.2 L	5:05pm	9.9 H	9:38pm	7.8 L
28	Tu	2:19am	10.2 H	9:38am	-0.9 L	5:43pm	10.5 H	10:30pm	7.9 L
29	W	3:00am	10.2 H	10:16am	-1.6 L	6:15pm	11 H	11:12pm	7.8 L
30	Th	3:42am	10.2 H	10:54am	-2.1 L	6:44pm	11.3 H	11:51pm	7.6 L
July									
1	F	4:24am	10.3 H	11:34am	-2.5 L	7:13pm	11.6 H		

Date	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
2 Sa	12:30am	7.2 L	5:10am	10.3 H	12:15pm	-2.6 L	7:42pm	11.8 H
3 Su	1:11am	6.6 L	5:58am	10.1 H	12:56pm	-2.4 L	8:14pm	12.1 H
4 M	1:56am	5.9 L	6:52am	9.8 H	1:39pm	-1.7 L	8:47pm	12.3 H
5 Tu	2:45am	5 L	7:51am	9.3 H	2:23pm	-0.6 L	9:22pm	12.4 H
6 W	3:37am	3.9 L	8:57am	8.8 H	3:08pm	0.9 L	9:59pm	12.4 H
7 Th	4:33am	2.7 L	10:12am	8.3 H	3:57pm	2.6 L	10:38pm	12.3 H
8 F	5:31am	1.6 L	11:40am	8.1 H	4:54pm	4.4 L	11:21pm	12 H
9 Sa	6:31am	0.5 L	1:23pm	8.4 H	6:04pm	6 L		
10 Su	12:09am	11.8 H	7:30am	-0.6 L	3:05pm	9.3 H	7:28pm	7.1 L
11 M	1:01am	11.5 H	8:25am	-1.4 L	4:19pm	10.2 H	8:54pm	7.5 L
12 Tu	1:55am	11.2 H	9:17am	-2.1 L	5:13pm	11 H	10:05pm	7.5 L
13 W	2:50am	11 H	10:05am	-2.4 L	5:57pm	11.5 H	11:02pm	7.1 L
14 Th	3:44am	10.7 H	10:50am	-2.5 L	6:34pm	11.7 H	11:51pm	6.7 L
15 F	4:34am	10.5 H	11:33am	-2.2 L	7:06pm	11.8 H		
16 Sa	12:35am	6.2 L	5:24am	10.2 H	12:13pm	-1.8 L	7:35pm	11.8 H
17 Su	1:17am	5.7 L	6:12am	9.8 H	12:53pm	-1.1 L	8:02pm	11.7 H
18 M	1:57am	5.1 L	7:01am	9.3 H	1:31pm	-0.1 L	8:29pm	11.7 H
19 Tu	2:38am	4.4 L	7:53am	8.8 H	2:08pm	1 L	8:57pm	11.6 H
20 W	3:20am	3.8 L	8:49am	8.4 H	2:46pm	2.4 L	9:28pm	11.4 H
21 Th	4:04am	3.2 L	9:51am	8 H	3:26pm	3.8 L	10:01pm	11.1 H
22 F	4:50am	2.6 L	11:04am	7.7 H	4:10pm	5.2 L	10:37pm	10.7 H
23 Sa	5:40am	2 L	12:36pm	7.8 H	5:05pm	6.5 L	11:18pm	10.4 H
24 Su	6:33am	1.4 L	2:31pm	8.4 H	6:25pm	7.5 L		
25 M	12:03am	10 H	7:27am	0.7 L	3:52pm	9.2 H	8:02pm	8 L
26 Tu	12:54am	9.9 H	8:17am	0 L	4:40pm	9.9 H	9:18pm	8 L
27 W	1:46am	9.8 H	9:05am	-0.7 L	5:14pm	10.4 H	10:07pm	7.7 L
28 Th	2:37am	10 H	9:49am	-1.4 L	5:42pm	10.8 H	10:46pm	7.3 L
29 F	3:27am	10.2 H	10:32am	-1.9 L	6:07pm	11.2 H	11:22pm	6.7 L
30 Sa	4:16am	10.4 H	11:13am	-2.1 L	6:32pm	11.5 H		
31 Su	12:01am	6 L	5:05am	10.6 H	11:55am	-2 L	6:59pm	11.8 H
August								
1 M	12:42am	5 L	5:58am	10.5 H	12:37pm	-1.5 L	7:29pm	12.1 H
2 Tu	1:26am	3.9 L	6:53am	10.3 H	1:19pm	-0.5 L	8:01pm	12.3 H
3 W	2:13am	2.8 L	7:53am	9.9 H	2:03pm	0.9 L	8:36pm	12.4 H
4 Th	3:03am	1.8 L	8:58am	9.5 H	2:49pm	2.5 L	9:14pm	12.2 H
5 F	3:56am	0.9 L	10:12am	9.1 H	3:40pm	4.3 L	9:56pm	11.9 H
6 Sa	4:54am	0.3 L	11:41am	8.9 H	4:41pm	5.8 L	10:44pm	11.5 H
7 Su	5:57am	-0.2 L	1:28pm	9.1 H	6:03pm	7 L	11:40pm	10.9 H
8 M	7:02am	-0.6 L	3:04pm	9.8 H	7:43pm	7.5 L		
9 Tu	12:44am	10.5 H	8:05am	-0.9 L	4:09pm	10.5 H	9:09pm	7.2 L
10 W	1:51am	10.3 H	9:02am	-1.1 L	4:56pm	11 H	10:10pm	6.7 L
11 Th	2:54am	10.2 H	9:52am	-1.2 L	5:33pm	11.2 H	10:57pm	6 L
12 F	3:49am	10.1 H	10:37am	-1.1 L	6:02pm	11.3 H	11:36pm	5.4 L
13 Sa	4:39am	10.1 H	11:17am	-0.8 L	6:27pm	11.3 H		
14 Su	12:11am	4.8 L	5:25am	9.9 H	11:54am	-0.2 L	6:48pm	11.3 H
15 M	12:44am	4.1 L	6:10am	9.8 H	12:30pm	0.5 L	7:10pm	11.3 H
16 Tu	1:16am	3.5 L	6:54am	9.6 H	1:05pm	1.5 L	7:34pm	11.2 H
17 W	1:50am	2.9 L	7:41am	9.4 H	1:41pm	2.5 L	8:01pm	11.1 H
18 Th	2:26am	2.3 L	8:30am	9.1 H	2:17pm	3.7 L	8:31pm	10.9 H
19 F	3:04am	1.9 L	9:24am	8.9 H	2:56pm	4.9 L	9:03pm	10.5 H
20 Sa	3:48am	1.6 L	10:27am	8.7 H	3:40pm	6 L	9:39pm	10.1 H
21 Su	4:36am	1.4 L	11:45am	8.5 H	4:36pm	7 L	10:22pm	9.7 H
22 M	5:32am	1.2 L	1:27pm	8.7 H	6:00pm	7.7 L	11:15pm	9.3 H
23 Tu	6:33am	0.9 L	2:58pm	9.2 H	7:44pm	7.8 L		
24 W	12:19am	9.2 H	7:34am	0.4 L	3:49pm	9.8 H	8:55pm	7.5 L
25 Th	1:24am	9.3 H	8:30am	-0.2 L	4:21pm	10.3 H	9:39pm	6.9 L
26 F	2:24am	9.7 H	9:20am	-0.7 L	4:47pm	10.7 H	10:16pm	6 L
27 Sa	3:19am	10.1 H	10:06am	-1 L	5:12pm	11.1 H	10:52pm	5 L
28 Su	4:13am	10.5 H	10:50am	-0.9 L	5:38pm	11.5 H	11:30pm	3.8 L
29 M	5:05am	10.8 H	11:32am	-0.5 L	6:07pm	11.8 H		
30 Tu	12:11am	2.5 L	5:59am	11 H	12:16pm	0.4 L	6:38pm	12 H
31 W	12:54am	1.3 L	6:56am	10.9 H	1:00pm	1.6 L	7:12pm	12.1 H
September								
1 Th	1:40am	0.3 L	7:55am	10.7 H	1:46pm	2.9 L	7:49pm	12 H
2 F	2:29am	-0.4 L	8:59am	10.4 H	2:36pm	4.4 L	8:30pm	11.7 H

Date	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
3 Sa	3:21am	-0.7 L	10:11am	10 H	3:33pm	5.7 L	9:17pm	11.1 H
4 Su	4:19am	-0.6 L	11:36am	9.8 H	4:45pm	6.7 L	10:13pm	10.4 H
5 M	5:23am	-0.3 L	1:15pm	9.9 H	6:23pm	7.1 L	11:22pm	9.8 H
6 Tu	6:32am	-0.1 L	2:37pm	10.2 H	8:04pm	6.8 L		
7 W	12:41am	9.4 H	7:41am	0.1 L	3:35pm	10.6 H	9:13pm	6 L
8 Th	1:58am	9.3 H	8:43am	0.2 L	4:17pm	10.9 H	10:02pm	5.2 L
9 F	3:05am	9.4 H	9:35am	0.3 L	4:49pm	10.9 H	10:40pm	4.4 L
10 Sa	4:00am	9.6 H	10:19am	0.7 L	5:13pm	10.9 H	11:12pm	3.6 L
11 Su	4:47am	9.8 H	10:58am	1.2 L	5:33pm	10.9 H	11:41pm	2.9 L
12 M	5:30am	9.9 H	11:34am	1.8 L	5:52pm	10.9 H		
13 Tu	12:08am	2.3 L	6:11am	10 H	12:08pm	2.6 L	6:13pm	10.8 H
14 W	12:36am	1.6 L	6:51am	10.1 H	12:43pm	3.5 L	6:38pm	10.7 H
15 Th	1:06am	1.1 L	7:33am	10.1 H	1:18pm	4.3 L	7:06pm	10.5 H
16 F	1:39am	0.7 L	8:17am	10 H	1:56pm	5.2 L	7:35pm	10.2 H
17 Sa	2:17am	0.5 L	9:05am	9.9 H	2:37pm	6 L	8:08pm	9.8 H
18 Su	2:58am	0.5 L	10:00am	9.7 H	3:25pm	6.7 L	8:44pm	9.4 H
19 M	3:46am	0.6 L	11:05am	9.5 H	4:26pm	7.3 L	9:29pm	9 H
20 Tu	4:41am	0.8 L	12:25pm	9.4 H	5:53pm	7.5 L	10:32pm	8.6 H
21 W	5:44am	0.8 L	1:42pm	9.7 H	7:27pm	7.2 L	11:51pm	8.5 H
22 Th	6:49am	0.8 L	2:36pm	10 H	8:27pm	6.5 L		
23 F	1:07am	8.7 H	7:51am	0.6 L	3:13pm	10.4 H	9:08pm	5.5 L
24 Sa	2:15am	9.2 H	8:47am	0.5 L	3:43pm	10.9 H	9:45pm	4.2 L
25 Su	3:16am	9.9 H	9:37am	0.7 L	4:12pm	11.3 H	10:22pm	2.7 L
26 M	4:13am	10.5 H	10:24am	1.1 L	4:42pm	11.6 H	11:01pm	1.2 L
27 Tu	5:08am	11.1 H	11:10am	1.9 L	5:14pm	11.9 H	11:42pm	-0.2 L
28 W	6:03am	11.5 H	11:56am	2.8 L	5:48pm	12 H		
29 Th	12:25am	-1.2 L	6:59am	11.6 H	12:44pm	3.9 L	6:25pm	12 H
30 F	1:10am	-1.9 L	7:57am	11.6 H	1:34pm	4.9 L	7:06pm	11.6 H

October

1 Sa	1:58am	-2 L	8:58am	11.3 H	2:30pm	5.9 L	7:52pm	11 H
2 Su	2:50am	-1.7 L	10:06am	11 H	3:35pm	6.6 L	8:45pm	10.2 H
3 M	3:46am	-1 L	11:22am	10.7 H	4:58pm	6.9 L	9:50pm	9.4 H
4 Tu	4:48am	-0.1 L	12:42pm	10.6 H	6:39pm	6.5 L	11:10pm	8.7 H
5 W	5:58am	0.7 L	1:51pm	10.6 H	8:02pm	5.7 L		
6 Th	12:40am	8.4 H	7:09am	1.3 L	2:43pm	10.8 H	8:58pm	4.7 L
7 F	2:04am	8.5 H	8:14am	1.8 L	3:22pm	10.8 H	9:40pm	3.6 L
8 Sa	3:13am	8.9 H	9:09am	2.3 L	3:51pm	10.8 H	10:14pm	2.7 L
9 Su	4:09am	9.4 H	9:56am	2.8 L	4:14pm	10.8 H	10:42pm	1.9 L
10 M	4:56am	9.8 H	10:37am	3.5 L	4:34pm	10.7 H	11:08pm	1.2 L
11 Tu	5:38am	10.2 H	11:14am	4.2 L	4:56pm	10.7 H	11:33pm	0.5 L
12 W	6:15am	10.5 H	11:50am	4.8 L	5:20pm	10.5 H	11:59pm	0 L
13 Th	6:52am	10.7 H	12:26pm	5.5 L	5:46pm	10.4 H		
14 F	12:29am	-0.4 L	7:29am	10.9 H	1:03pm	6 L	6:15pm	10.1 H
15 Sa	1:03am	-0.6 L	8:08am	10.9 H	1:43pm	6.5 L	6:45pm	9.8 H
16 Su	1:40am	-0.6 L	8:52am	10.8 H	2:27pm	6.9 L	7:19pm	9.5 H
17 M	2:22am	-0.5 L	9:41am	10.7 H	3:18pm	7.2 L	7:57pm	9 H
18 Tu	3:08am	-0.2 L	10:37am	10.5 H	4:22pm	7.3 L	8:47pm	8.6 H
19 W	4:01am	0.3 L	11:37am	10.4 H	5:41pm	7.1 L	10:00pm	8.2 H
20 Th	5:00am	0.8 L	12:35pm	10.5 H	6:57pm	6.4 L	11:28pm	8 H
21 F	6:03am	1.3 L	1:24pm	10.7 H	7:52pm	5.2 L		
22 Sa	12:54am	8.2 H	7:08am	1.8 L	2:05pm	11 H	8:35pm	3.8 L
23 Su	2:10am	8.8 H	8:09am	2.3 L	2:41pm	11.4 H	9:15pm	2.1 L
24 M	3:18am	9.7 H	9:06am	3 L	3:15pm	11.7 H	9:55pm	0.4 L
25 Tu	4:19am	10.6 H	9:59am	3.7 L	3:50pm	12 H	10:35pm	-1.1 L
26 W	5:15am	11.4 H	10:50am	4.5 L	4:26pm	12.2 H	11:17pm	-2.3 L
27 Th	6:09am	11.9 H	11:40am	5.3 L	5:05pm	12.1 H		
28 F	12:00am	-3 L	7:03am	12.2 H	12:33pm	5.9 L	5:46pm	11.8 H
29 Sa	12:46am	-3.2 L	7:58am	12.3 H	1:27pm	6.4 L	6:32pm	11.3 H
30 Su	1:33am	-2.8 L	8:54am	12.1 H	2:27pm	6.8 L	7:22pm	10.5 H
31 M	2:23am	-2.1 L	9:53am	11.8 H	3:36pm	6.8 L	8:20pm	9.6 H

November

1 Tu	3:16am	-1 L	10:53am	11.5 H	4:58pm	6.5 L	9:30pm	8.7 H
2 W	4:13am	0.2 L	11:54am	11.3 H	6:25pm	5.8 L	10:54pm	8 H
3 Th	5:15am	1.5 L	12:49pm	11.2 H	7:36pm	4.7 L		
4 F	12:29am	7.7 H	6:23am	2.6 L	1:36pm	11.1 H	8:28pm	3.6 L

Date	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
5 Sa	2:01am	8 H	7:31am	3.6 L	2:13pm	11 H	9:08pm	2.5 L
6 Su**	2:17am	8.6 H	7:34am	4.4 L	1:44pm	10.9 H	8:40pm	1.6 L
7 M	3:17am	9.4 H	8:28am	5.1 L	2:12pm	10.8 H	9:08pm	0.7 L
8 Tu	4:05am	10.1 H	9:16am	5.8 L	2:38pm	10.7 H	9:34pm	0 L
9 W	4:46am	10.6 H	9:58am	6.3 L	3:05pm	10.6 H	10:00pm	-0.6 L
10 Th	5:21am	11 H	10:38am	6.7 L	3:33pm	10.5 H	10:29pm	-1 L
11 F	5:54am	11.3 H	11:16am	7.1 L	4:03pm	10.3 H	11:01pm	-1.3 L
12 Sa	6:27am	11.5 H	11:54am	7.3 L	4:34pm	10.1 H	11:36pm	-1.5 L
13 Su	7:03am	11.6 H	12:35pm	7.4 L	5:08pm	9.8 H		
14 M	12:15am	-1.4 L	7:42am	11.6 H	1:19pm	7.5 L	5:46pm	9.5 H
15 Tu	12:56am	-1.2 L	8:24am	11.6 H	2:10pm	7.3 L	6:31pm	9.1 H
16 W	1:40am	-0.7 L	9:08am	11.6 H	3:08pm	7 L	7:29pm	8.6 H
17 Th	2:28am	0 L	9:54am	11.5 H	4:12pm	6.3 L	8:44pm	8.1 H
18 F	3:21am	1 L	10:40am	11.6 H	5:16pm	5.3 L	10:12pm	7.8 H
19 Sa	4:19am	2.2 L	11:23am	11.7 H	6:12pm	3.8 L	11:44pm	8 H
20 Su	5:24am	3.4 L	12:05pm	11.8 H	7:01pm	2.2 L		
21 M	1:11am	8.7 H	6:31am	4.5 L	12:46pm	12 H	7:46pm	0.4 L
22 Tu	2:26am	9.7 H	7:37am	5.4 L	1:26pm	12.2 H	8:30pm	-1.1 L
23 W	3:31am	10.8 H	8:39am	6.2 L	2:07pm	12.3 H	9:13pm	-2.4 L
24 Th	4:27am	11.7 H	9:36am	6.7 L	2:49pm	12.3 H	9:56pm	-3.2 L
25 F	5:18am	12.3 H	10:32am	7 L	3:33pm	12 H	10:41pm	-3.6 L
26 Sa	6:07am	12.7 H	11:27am	7.2 L	4:20pm	11.6 H	11:26pm	-3.4 L
27 Su	6:55am	12.7 H	12:23pm	7.1 L	5:10pm	11 H		
28 M	12:12am	-2.8 L	7:42am	12.6 H	1:21pm	6.9 L	6:03pm	10.3 H
29 Tu	12:59am	-1.9 L	8:28am	12.4 H	2:24pm	6.5 L	7:02pm	9.4 H
30 W	1:47am	-0.6 L	9:14am	12.2 H	3:32pm	5.9 L	8:10pm	8.5 H
December								
1 Th	2:36am	0.8 L	9:58am	11.9 H	4:42pm	5.1 L	9:29pm	7.8 H
2 F	3:29am	2.4 L	10:41am	11.7 H	5:46pm	4.1 L	11:03pm	7.5 H
3 Sa	4:27am	3.9 L	11:22am	11.4 H	6:39pm	3.1 L		
4 Su	12:46am	7.8 H	5:35am	5.3 L	12:01pm	11.2 H	7:22pm	2 L
5 M	2:15am	8.6 H	6:49am	6.3 L	12:38pm	11 H	7:58pm	1.1 L
6 Tu	3:21am	9.6 H	7:59am	7.1 L	1:13pm	10.8 H	8:30pm	0.3 L
7 W	4:10am	10.4 H	8:58am	7.5 L	1:48pm	10.7 H	9:00pm	-0.4 L
8 Th	4:49am	11 H	9:48am	7.8 L	2:23pm	10.6 H	9:31pm	-0.9 L
9 F	5:23am	11.5 H	10:29am	7.9 L	2:57pm	10.5 H	10:04pm	-1.4 L
10 Sa	5:53am	11.8 H	11:07am	7.9 L	3:33pm	10.4 H	10:39pm	-1.7 L
11 Su	6:22am	12 H	11:43am	7.9 L	4:10pm	10.3 H	11:16pm	-1.8 L
12 M	6:52am	12.1 H	12:21pm	7.6 L	4:50pm	10.1 H	11:55pm	-1.8 L
13 Tu	7:24am	12.3 H	1:03pm	7.3 L	5:34pm	9.8 H		
14 W	12:35am	-1.4 L	7:58am	12.4 H	1:49pm	6.8 L	6:25pm	9.4 H
15 Th	1:17am	-0.7 L	8:33am	12.4 H	2:40pm	6 L	7:25pm	8.9 H
16 F	2:01am	0.4 L	9:10am	12.5 H	3:35pm	5 L	8:38pm	8.3 H
17 Sa	2:48am	1.8 L	9:49am	12.5 H	4:33pm	3.8 L	10:02pm	8 H
18 Su	3:41am	3.4 L	10:30am	12.4 H	5:31pm	2.4 L	11:38pm	8.2 H
19 M	4:44am	5.1 L	11:13am	12.4 H	6:26pm	0.9 L		
20 Tu	1:18am	8.9 H	5:58am	6.5 L	11:59am	12.3 H	7:18pm	-0.5 L
21 W	2:43am	10.1 H	7:17am	7.4 L	12:47pm	12.2 H	8:08pm	-1.7 L
22 Th	3:47am	11.1 H	8:30am	7.8 L	1:36pm	12.1 H	8:55pm	-2.6 L
23 F	4:38am	12 H	9:34am	7.9 L	2:26pm	12 H	9:41pm	-3.1 L
24 Sa	5:22am	12.5 H	10:30am	7.7 L	3:17pm	11.8 H	10:26pm	-3.1 L
25 Su	6:03am	12.7 H	11:22am	7.3 L	4:08pm	11.4 H	11:10pm	-2.8 L
26 M	6:41am	12.8 H	12:13pm	6.9 L	5:00pm	10.9 H	11:54pm	-2.1 L
27 Tu	7:17am	12.8 H	1:03pm	6.3 L	5:53pm	10.2 H		
28 W	12:37am	-1.1 L	7:52am	12.7 H	1:54pm	5.7 L	6:49pm	9.5 H
29 Th	1:19am	0.2 L	8:26am	12.5 H	2:47pm	5 L	7:50pm	8.7 H
30 F	2:01am	1.7 L	9:00am	12.2 H	3:41pm	4.3 L	8:59pm	8.1 H
31 Sa	2:44am	3.3 L	9:36am	11.9 H	4:35pm	3.6 L	10:23pm	7.7 H

Port Townsend 2011 Water Level Predictions

All times listed are in local time, and all heights are in feet referenced to Mean Lower Low Water (MLLW).

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
January								
1	Sa	3:37am	8.5 H	7:05am	7.2 L	12:19pm	8.9 H	7:51pm -1.5 L
2	Su	4:21am	9.1 H	8:14am	7.4 L	1:07pm	8.7 H	8:33pm -1.7 L
3	M	5:00am	9.4 H	9:13am	7.2 L	1:56pm	8.5 H	9:13pm -1.7 L
4	Tu	5:36am	9.5 H	10:03am	7 L	2:45pm	8.2 H	9:52pm -1.5 L
5	W	6:09am	9.5 H	10:51am	6.6 L	3:32pm	7.8 H	10:30pm -1.1 L
6	Th	6:39am	9.4 H	11:39am	6.1 L	4:21pm	7.4 H	11:07pm -0.5 L
7	F	7:05am	9.3 H	12:28pm	5.6 L	5:11pm	6.9 H	11:44pm 0.3 L
8	Sa	7:29am	9.2 H	1:18pm	5 L	6:06pm	6.4 H	
9	Su	12:20am	1.2 L	7:52am	9.1 H	2:09pm	4.3 L	7:07pm 5.9 H
10	M	12:56am	2.3 L	8:15am	9 H	3:00pm	3.6 L	8:19pm 5.4 H
11	Tu	1:32am	3.5 L	8:41am	8.9 H	3:49pm	2.8 L	10:00pm 5.3 H
12	W	2:08am	4.7 L	9:08am	8.8 H	4:36pm	2 L	
13	Th	9:39am	8.6 H	5:22pm	1.3 L			
14	F	2:50am	6.8 H	4:15pm	6.7 L	10:12am	8.5 H	6:06pm 0.5 L
15	Sa	3:25am	7.6 H	5:44am	7.3 L	10:51am	8.5 H	6:48pm -0.3 L
16	Su	3:54am	8.2 H	6:55am	7.6 L	11:37am	8.5 H	7:30pm -1 L
17	M	4:20am	8.6 H	7:50am	7.5 L	12:30pm	8.6 H	8:12pm -1.6 L
18	Tu	4:45am	8.9 H	8:37am	7.3 L	1:26pm	8.6 H	8:54pm -2 L
19	W	5:11am	9.1 H	9:22am	6.8 L	2:24pm	8.6 H	9:35pm -2.1 L
20	Th	5:37am	9.3 H	10:09am	6.2 L	3:24pm	8.4 H	10:17pm -1.9 L
21	F	6:05am	9.5 H	10:59am	5.4 L	4:25pm	8.1 H	10:59pm -1.2 L
22	Sa	6:34am	9.6 H	11:52am	4.4 L	5:30pm	7.6 H	11:41pm -0.1 L
23	Su	7:05am	9.7 H	12:48pm	3.4 L	6:39pm	7 H	
24	M	12:25am	1.2 L	7:37am	9.7 H	1:46pm	2.4 L	7:57pm 6.4 H
25	Tu	1:09am	2.8 L	8:11am	9.6 H	2:47pm	1.5 L	9:33pm 6.1 H
26	W	1:58am	4.3 L	8:46am	9.5 H	3:50pm	0.7 L	11:44pm 6.4 H
27	Th	2:59am	5.7 L	9:25am	9.2 H	4:53pm	0.1 L	
28	F	1:31am	7.2 H	4:19am	6.7 L	10:10am	8.9 H	5:53pm -0.3 L
29	Sa	2:36am	8.1 H	5:55am	7.2 L	11:03am	8.5 H	6:49pm -0.6 L
30	Su	3:22am	8.6 H	7:26am	7.2 L	12:04pm	8.2 H	7:39pm -0.7 L
31	M	4:02am	9 H	8:33am	6.9 L	1:06pm	8 H	8:22pm -0.7 L
February								
1	Tu	4:36am	9.1 H	9:19am	6.5 L	2:03pm	7.9 H	9:01pm -0.6 L
2	W	5:06am	9.1 H	9:55am	6 L	2:54pm	7.7 H	9:37pm -0.3 L
3	Th	5:31am	9 H	10:29am	5.5 L	3:41pm	7.5 H	10:11pm 0.1 L
4	F	5:52am	8.9 H	11:04am	4.9 L	4:29pm	7.3 H	10:45pm 0.7 L
5	Sa	6:10am	8.9 H	11:41am	4.3 L	5:17pm	7 H	11:19pm 1.5 L
6	Su	6:29am	8.8 H	12:20pm	3.6 L	6:09pm	6.7 H	11:53pm 2.4 L
7	M	6:50am	8.8 H	1:01pm	3 L	7:05pm	6.4 H	
8	Tu	12:27am	3.4 L	7:15am	8.7 H	1:44pm	2.5 L	8:10pm 6.2 H
9	W	1:01am	4.4 L	7:41am	8.6 H	2:30pm	2 L	9:33pm 6 H
10	Th	1:36am	5.4 L	8:10am	8.5 H	3:21pm	1.5 L	
11	F	8:41am	8.3 H	4:16pm	1 L			
12	Sa	9:18am	8.2 H	5:13pm	0.5 L			
13	Su	2:49am	7.6 H	5:22am	7.3 L	10:07am	8.1 H	6:08pm -0.1 L
14	M	3:14am	8 H	6:36am	7.3 L	11:11am	8.1 H	7:00pm -0.6 L
15	Tu	3:37am	8.3 H	7:30am	6.9 L	12:22pm	8.1 H	7:47pm -1.1 L
16	W	3:59am	8.6 H	8:16am	6.2 L	1:30pm	8.2 H	8:31pm -1.2 L
17	Th	4:21am	8.8 H	9:01am	5.4 L	2:35pm	8.3 H	9:14pm -1 L
18	F	4:46am	9 H	9:46am	4.3 L	3:39pm	8.3 H	9:57pm -0.4 L
19	Sa	5:13am	9.2 H	10:33am	3.2 L	4:42pm	8.1 H	10:39pm 0.5 L
20	Su	5:42am	9.3 H	11:22am	2.1 L	5:47pm	7.8 H	11:22pm 1.7 L
21	M	6:13am	9.4 H	12:13pm	1.2 L	6:55pm	7.5 H	
22	Tu	12:07am	3 L	6:46am	9.4 H	1:07pm	0.5 L	8:11pm 7.2 H
23	W	12:55am	4.3 L	7:22am	9.2 H	2:04pm	0.2 L	9:43pm 7.1 H
24	Th	1:51am	5.5 L	8:00am	8.9 H	3:06pm	0 L	11:33pm 7.3 H
25	F	3:03am	6.4 L	8:45am	8.4 H	4:12pm	0.1 L	
26	Sa	1:03am	7.7 H	4:43am	6.8 L	9:40am	8 H	5:21pm 0.2 L

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.	
27	Su	2:03am	8.2 H	6:38am	6.7 L	10:50am	7.5 H	6:25pm	0.3 L
28	M	2:48am	8.5 H	7:54am	6.2 L	12:09pm	7.3 H	7:20pm	0.4 L
March									
1	Tu	3:24am	8.6 H	8:38am	5.7 L	1:21pm	7.2 H	8:05pm	0.6 L
2	W	3:54am	8.6 H	9:08am	5.1 L	2:21pm	7.2 H	8:43pm	0.8 L
3	Th	4:19am	8.5 H	9:34am	4.5 L	3:11pm	7.3 H	9:17pm	1.2 L
4	F	4:37am	8.4 H	9:59am	3.8 L	3:58pm	7.3 H	9:50pm	1.7 L
5	Sa	4:52am	8.4 H	10:28am	3.2 L	4:43pm	7.3 H	10:22pm	2.4 L
6	Su	5:08am	8.4 H	10:59am	2.5 L	5:29pm	7.3 H	10:56pm	3.1 L
7	M	5:27am	8.4 H	11:32am	1.9 L	6:16pm	7.2 H	11:31pm	3.9 L
8	Tu	5:51am	8.3 H	12:08pm	1.5 L	7:08pm	7.2 H		
9	W	12:08am	4.6 L	6:18am	8.2 H	12:48pm	1.1 L	8:06pm	7.1 H
10	Th	12:46am	5.4 L	6:46am	8.1 H	1:32pm	0.9 L	9:16pm	7 H
11	F	1:30am	6.1 L	7:15am	7.9 H	2:22pm	0.7 L	10:59pm	7 H
12	Sa	2:29am	6.6 L	7:48am	7.7 H	3:20pm	0.5 L		
13	Su*	12:46am	7.3 H	4:54am	6.9 L	9:32am	7.5 H	5:23pm	0.4 L
14	M	2:36am	7.6 H	6:21am	6.8 L	10:40am	7.3 H	6:25pm	0.2 L
15	Tu	3:07am	7.9 H	7:26am	6.3 L	12:04pm	7.3 H	7:23pm	0 L
16	W	3:32am	8.1 H	8:14am	5.5 L	1:27pm	7.4 H	8:16pm	0 L
17	Th	3:56am	8.3 H	8:57am	4.4 L	2:43pm	7.6 H	9:04pm	0.3 L
18	F	4:21am	8.5 H	9:40am	3.2 L	3:52pm	7.9 H	9:49pm	0.8 L
19	Sa	4:47am	8.8 H	10:23am	1.9 L	4:57pm	8.1 H	10:34pm	1.7 L
20	Su	5:16am	9 H	11:08am	0.7 L	6:00pm	8.3 H	11:19pm	2.7 L
21	M	5:47am	9.1 H	11:54am	-0.2 L	7:03pm	8.3 H		
22	Tu	12:05am	3.7 L	6:20am	9.1 H	12:42pm	-0.8 L	8:08pm	8.3 H
23	W	12:55am	4.7 L	6:56am	8.9 H	1:32pm	-1 L	9:18pm	8.1 H
24	Th	1:51am	5.6 L	7:36am	8.5 H	2:26pm	-0.8 L	10:37pm	8 H
25	F	2:58am	6.2 L	8:20am	8 H	3:25pm	-0.3 L		
26	Sa	12:01am	8 H	4:31am	6.4 L	9:13am	7.4 H	4:29pm	0.2 L
27	Su	1:16am	8.1 H	6:33am	6.2 L	10:20am	6.9 H	5:39pm	0.8 L
28	M	2:13am	8.2 H	7:54am	5.6 L	11:47am	6.4 H	6:47pm	1.2 L
29	Tu	2:56am	8.2 H	8:44am	4.9 L	1:22pm	6.3 H	7:45pm	1.6 L
30	W	3:30am	8.2 H	9:17am	4.2 L	2:42pm	6.5 H	8:33pm	2 L
31	Th	3:56am	8.1 H	9:42am	3.5 L	3:42pm	6.8 H	9:14pm	2.5 L
April									
1	F	4:14am	8 H	10:03am	2.8 L	4:33pm	7 H	9:50pm	3 L
2	Sa	4:28am	7.9 H	10:26am	2 L	5:18pm	7.3 H	10:25pm	3.6 L
3	Su	4:43am	8 H	10:52am	1.3 L	6:00pm	7.6 H	11:00pm	4.2 L
4	M	5:02am	8 H	11:21am	0.7 L	6:42pm	7.8 H	11:37pm	4.8 L
5	Tu	5:26am	8 H	11:53am	0.2 L	7:26pm	7.9 H		
6	W	12:15am	5.3 L	5:52am	7.9 H	12:28pm	-0.1 L	8:13pm	7.9 H
7	Th	12:56am	5.8 L	6:21am	7.7 H	1:07pm	-0.3 L	9:05pm	7.9 H
8	F	1:41am	6.2 L	6:50am	7.5 H	1:51pm	-0.3 L	10:04pm	7.8 H
9	Sa	2:36am	6.5 L	7:22am	7.3 H	2:40pm	-0.2 L	11:10pm	7.8 H
10	Su	3:46am	6.6 L	8:01am	7.1 H	3:36pm	0 L		
11	M	12:16am	7.8 H	5:11am	6.4 L	9:05am	6.7 H	4:37pm	0.2 L
12	Tu	1:07am	7.9 H	6:24am	5.8 L	10:34am	6.4 H	5:41pm	0.5 L
13	W	1:46am	8 H	7:14am	4.9 L	12:10pm	6.3 H	6:42pm	1 L
14	Th	2:17am	8.1 H	7:57am	3.7 L	1:43pm	6.5 H	7:38pm	1.5 L
15	F	2:46am	8.3 H	8:37am	2.2 L	3:05pm	7 H	8:31pm	2.3 L
16	Sa	3:16am	8.5 H	9:19am	0.8 L	4:16pm	7.6 H	9:21pm	3.1 L
17	Su	3:46am	8.7 H	10:00am	-0.5 L	5:19pm	8.2 H	10:10pm	3.9 L
18	M	4:18am	8.9 H	10:44am	-1.5 L	6:18pm	8.6 H	11:00pm	4.8 L
19	Tu	4:52am	8.8 H	11:28am	-2 L	7:16pm	8.9 H	11:52pm	5.4 L
20	W	5:30am	8.7 H	12:14pm	-2.2 L	8:15pm	8.9 H		
21	Th	12:48am	5.9 L	6:10am	8.3 H	1:02pm	-1.9 L	9:15pm	8.8 H
22	F	1:53am	6.2 L	6:55am	7.8 H	1:53pm	-1.3 L	10:17pm	8.6 H
23	Sa	3:17am	6.2 L	7:46am	7.2 H	2:47pm	-0.5 L	11:20pm	8.4 H
24	Su	5:10am	5.9 L	8:47am	6.5 H	3:46pm	0.4 L		
25	M	12:18am	8.3 H	6:38am	5.2 L	10:03am	5.9 H	4:49pm	1.3 L
26	Tu	1:08am	8.2 H	7:34am	4.4 L	11:42am	5.5 H	5:52pm	2.1 L
27	W	1:47am	8.1 H	8:14am	3.6 L	1:36pm	5.5 H	6:52pm	2.8 L
28	Th	2:16am	7.9 H	8:43am	2.8 L	3:01pm	6 H	7:46pm	3.5 L
29	F	2:36am	7.8 H	9:06am	1.9 L	4:02pm	6.5 H	8:34pm	4.2 L
30	Sa	2:52am	7.8 H	9:28am	1.2 L	4:52pm	7.1 H	9:18pm	4.8 L

Day		Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
May									
1	Su	3:10am	7.8 H	9:51am	0.4 L	5:35pm	7.6 H	9:59pm	5.3 L
2	M	3:32am	7.8 H	10:18am	-0.2 L	6:15pm	8 H	10:39pm	5.7 L
3	Tu	3:57am	7.8 H	10:48am	-0.7 L	6:53pm	8.3 H	11:19pm	6.1 L
4	W	4:25am	7.8 H	11:21am	-1.1 L	7:32pm	8.4 H		
5	Th	12:01am	6.4 L	4:55am	7.7 H	11:58am	-1.4 L	8:14pm	8.5 H
6	F	12:47am	6.6 L	5:26am	7.5 H	12:38pm	-1.4 L	8:58pm	8.5 H
7	Sa	1:39am	6.6 L	5:59am	7.2 H	1:22pm	-1.3 L	9:45pm	8.5 H
8	Su	2:41am	6.5 L	6:41am	6.9 H	2:10pm	-1 L	10:31pm	8.4 H
9	M	3:55am	6.2 L	7:43am	6.4 H	3:01pm	-0.4 L	11:15pm	8.4 H
10	Tu	5:10am	5.5 L	9:07am	5.9 H	3:57pm	0.3 L	11:56pm	8.4 H
11	W	6:07am	4.4 L	10:42am	5.5 H	4:57pm	1.2 L		
12	Th	12:32am	8.4 H	6:53am	3.1 L	12:28pm	5.5 H	5:58pm	2.2 L
13	F	1:07am	8.5 H	7:35am	1.7 L	2:13pm	6 H	6:59pm	3.3 L
14	Sa	1:40am	8.6 H	8:16am	0.2 L	3:36pm	6.9 H	7:58pm	4.3 L
15	Su	2:14am	8.8 H	8:58am	-1.1 L	4:42pm	7.7 H	8:55pm	5.1 L
16	M	2:48am	8.8 H	9:40am	-2.1 L	5:38pm	8.5 H	9:50pm	5.7 L
17	Tu	3:25am	8.8 H	10:22am	-2.7 L	6:31pm	8.9 H	10:45pm	6.2 L
18	W	4:05am	8.6 H	11:06am	-2.9 L	7:21pm	9.2 H	11:42pm	6.4 L
19	Th	4:48am	8.3 H	11:51am	-2.7 L	8:10pm	9.2 H		
20	F	12:44am	6.4 L	5:34am	7.8 H	12:37pm	-2.2 L	8:59pm	9.1 H
21	Sa	1:56am	6.3 L	6:25am	7.2 H	1:25pm	-1.4 L	9:46pm	8.9 H
22	Su	3:26am	5.8 L	7:21am	6.5 H	2:13pm	-0.5 L	10:31pm	8.7 H
23	M	4:58am	5.2 L	8:26am	5.8 H	3:03pm	0.6 L	11:13pm	8.5 H
24	Tu	6:03am	4.3 L	9:44am	5.1 H	3:56pm	1.7 L	11:48pm	8.3 H
25	W	6:52am	3.5 L	11:29am	4.8 H	4:51pm	2.8 L		
26	Th	12:18am	8.1 H	7:29am	2.6 L	1:47pm	5.1 H	5:50pm	3.8 L
27	F	12:42am	8 H	7:58am	1.7 L	3:16pm	5.8 H	6:51pm	4.8 L
28	Sa	1:06am	7.9 H	8:24am	0.9 L	4:16pm	6.6 H	7:49pm	5.5 L
29	Su	1:31am	7.9 H	8:50am	0.1 L	5:03pm	7.3 H	8:43pm	6.1 L
30	M	1:58am	7.9 H	9:18am	-0.6 L	5:42pm	7.9 H	9:32pm	6.5 L
31	Tu	2:28am	7.9 H	9:48am	-1.2 L	6:18pm	8.3 H	10:16pm	6.7 L
June									
1	W	3:00am	7.9 H	10:21am	-1.7 L	6:52pm	8.5 H	10:59pm	6.8 L
2	Th	3:34am	7.8 H	10:57am	-2 L	7:26pm	8.7 H	11:43pm	6.8 L
3	F	4:11am	7.7 H	11:36am	-2.2 L	8:01pm	8.8 H		
4	Sa	12:30am	6.7 L	4:52am	7.4 H	12:17pm	-2.1 L	8:37pm	8.9 H
5	Su	1:24am	6.5 L	5:42am	7.1 H	1:00pm	-1.8 L	9:13pm	8.9 H
6	M	2:26am	6 L	6:44am	6.6 H	1:45pm	-1.2 L	9:49pm	8.9 H
7	Tu	3:32am	5.2 L	7:57am	6 H	2:32pm	-0.3 L	10:23pm	8.9 H
8	W	4:36am	4.1 L	9:21am	5.4 H	3:22pm	0.9 L	10:58pm	8.9 H
9	Th	5:32am	2.8 L	11:00am	5 H	4:17pm	2.3 L	11:32pm	8.9 H
10	F	6:23am	1.4 L	1:01pm	5.3 H	5:18pm	3.7 L		
11	Sa	12:07am	8.9 H	7:10am	0.1 L	2:50pm	6.1 H	6:25pm	4.9 L
12	Su	12:43am	8.9 H	7:55am	-1.1 L	4:03pm	7.2 H	7:32pm	5.8 L
13	M	1:22am	8.9 H	8:39am	-2.1 L	4:58pm	8 H	8:37pm	6.4 L
14	Tu	2:03am	8.8 H	9:22am	-2.7 L	5:46pm	8.6 H	9:38pm	6.7 L
15	W	2:48am	8.6 H	10:06am	-2.9 L	6:30pm	9 H	10:36pm	6.7 L
16	Th	3:35am	8.3 H	10:49am	-2.8 L	7:12pm	9.1 H	11:34pm	6.5 L
17	F	4:24am	7.9 H	11:33am	-2.5 L	7:52pm	9.1 H		
18	Sa	12:34am	6.2 L	5:15am	7.4 H	12:16pm	-1.9 L	8:29pm	9 H
19	Su	1:38am	5.8 L	6:09am	6.8 H	12:58pm	-1.1 L	9:04pm	8.9 H
20	M	2:48am	5.2 L	7:07am	6.1 H	1:41pm	-0.1 L	9:36pm	8.7 H
21	Tu	3:56am	4.4 L	8:11am	5.5 H	2:23pm	1 L	10:04pm	8.5 H
22	W	4:54am	3.6 L	9:26am	4.9 H	3:07pm	2.2 L	10:30pm	8.4 H
23	Th	5:43am	2.8 L	11:09am	4.7 H	3:54pm	3.5 L	10:55pm	8.2 H
24	F	6:25am	1.9 L	1:52pm	5.1 H	4:49pm	4.6 L	11:23pm	8.1 H
25	Sa	7:02am	1.1 L	3:24pm	6 H	5:56pm	5.6 L	11:52pm	8 H
26	Su	7:37am	0.3 L	4:19pm	6.8 H	7:07pm	6.3 L		
27	M	12:25am	7.9 H	8:11am	-0.4 L	5:00pm	7.5 H	8:11pm	6.7 L
28	Tu	1:01am	7.9 H	8:46am	-1 L	5:34pm	8 H	9:05pm	6.9 L
29	W	1:41am	7.9 H	9:21am	-1.6 L	6:04pm	8.3 H	9:50pm	7 L
30	Th	2:24am	7.9 H	9:59am	-2 L	6:33pm	8.5 H	10:32pm	6.8 L
July									
1	F	3:10am	7.9 H	10:37am	-2.3 L	7:01pm	8.7 H	11:16pm	6.6 L

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
2 Sa	4:00am	7.7 H	11:17am	-2.4 L	7:29pm	8.8 H		
3 Su	12:03am	6.1 L	4:54am	7.4 H	11:58am	-2.1 L	7:59pm	8.9 H
4 M	12:55am	5.5 L	5:54am	7 H	12:40pm	-1.5 L	8:29pm	9 H
5 Tu	1:52am	4.7 L	7:00am	6.4 H	1:23pm	-0.6 L	9:01pm	9 H
6 W	2:51am	3.6 L	8:14am	5.8 H	2:07pm	0.7 L	9:33pm	9 H
7 Th	3:51am	2.5 L	9:38am	5.3 H	2:54pm	2.1 L	10:06pm	9 H
8 F	4:51am	1.3 L	11:24am	5.2 H	3:46pm	3.6 L	10:41pm	9 H
9 Sa	5:48am	0.2 L	1:35pm	5.8 H	4:50pm	5 L	11:19pm	8.9 H
10 Su	6:43am	-0.8 L	3:08pm	6.7 H	6:06pm	6 L		
11 M	12:01am	8.7 H	7:34am	-1.5 L	4:08pm	7.6 H	7:24pm	6.6 L
12 Tu	12:49am	8.5 H	8:23am	-2 L	4:55pm	8.2 H	8:35pm	6.7 L
13 W	1:42am	8.3 H	9:10am	-2.2 L	5:36pm	8.6 H	9:37pm	6.6 L
14 Th	2:36am	8.1 H	9:53am	-2.2 L	6:13pm	8.8 H	10:31pm	6.3 L
15 F	3:30am	7.8 H	10:35am	-2 L	6:47pm	8.8 H	11:21pm	5.9 L
16 Sa	4:23am	7.5 H	11:15am	-1.6 L	7:18pm	8.7 H		
17 Su	12:10am	5.3 L	5:14am	7.1 H	11:54am	-1 L	7:46pm	8.6 H
18 M	12:59am	4.8 L	6:07am	6.6 H	12:32pm	-0.2 L	8:11pm	8.5 H
19 Tu	1:49am	4.1 L	7:02am	6.1 H	1:10pm	0.8 L	8:34pm	8.4 H
20 W	2:39am	3.5 L	8:03am	5.7 H	1:48pm	1.9 L	8:57pm	8.3 H
21 Th	3:29am	2.8 L	9:13am	5.3 H	2:27pm	3.1 L	9:22pm	8.2 H
22 F	4:18am	2.2 L	10:45am	5.1 H	3:09pm	4.2 L	9:50pm	8.1 H
23 Sa	5:08am	1.5 L	1:37pm	5.5 H	4:01pm	5.3 L	10:20pm	7.9 H
24 Su	5:57am	0.9 L	3:13pm	6.3 H	5:16pm	6.1 L	10:55pm	7.8 H
25 M	6:45am	0.3 L	4:01pm	7 H	6:39pm	6.6 L	11:35pm	7.7 H
26 Tu	7:31am	-0.3 L	4:36pm	7.5 H	7:49pm	6.8 L		
27 W	12:23am	7.7 H	8:14am	-0.9 L	5:04pm	7.9 H	8:41pm	6.8 L
28 Th	1:17am	7.7 H	8:56am	-1.4 L	5:29pm	8.1 H	9:24pm	6.5 L
29 F	2:13am	7.8 H	9:37am	-1.8 L	5:52pm	8.3 H	10:05pm	6.1 L
30 Sa	3:10am	7.8 H	10:17am	-1.9 L	6:16pm	8.4 H	10:48pm	5.5 L
31 Su	4:07am	7.7 H	10:57am	-1.8 L	6:41pm	8.6 H	11:33pm	4.7 L
August								
1 M	5:07am	7.5 H	11:38am	-1.2 L	7:08pm	8.7 H		
2 Tu	12:23am	3.7 L	6:10am	7.1 H	12:19pm	-0.3 L	7:38pm	8.8 H
3 W	1:15am	2.7 L	7:17am	6.7 H	1:02pm	0.9 L	8:09pm	8.9 H
4 Th	2:10am	1.7 L	8:30am	6.3 H	1:46pm	2.3 L	8:42pm	8.9 H
5 F	3:07am	0.9 L	9:55am	6 H	2:35pm	3.7 L	9:17pm	8.8 H
6 Sa	4:08am	0.1 L	11:45am	6.1 H	3:33pm	5 L	9:56pm	8.6 H
7 Su	5:11am	-0.4 L	1:41pm	6.6 H	4:48pm	5.9 L	10:42pm	8.4 H
8 M	6:14am	-0.8 L	2:57pm	7.3 H	6:17pm	6.4 L	11:36pm	8.1 H
9 Tu	7:15am	-1 L	3:49pm	7.9 H	7:44pm	6.5 L		
10 W	12:40am	7.8 H	8:10am	-1.2 L	4:31pm	8.2 H	8:53pm	6.2 L
11 Th	1:46am	7.6 H	8:58am	-1.1 L	5:07pm	8.4 H	9:44pm	5.7 L
12 F	2:48am	7.5 H	9:40am	-0.9 L	5:38pm	8.4 H	10:24pm	5.2 L
13 Sa	3:43am	7.4 H	10:19am	-0.6 L	6:05pm	8.3 H	11:02pm	4.6 L
14 Su	4:34am	7.2 H	10:55am	-0.1 L	6:28pm	8.2 H	11:39pm	4 L
15 M	5:24am	7 H	11:31am	0.6 L	6:48pm	8.2 H		
16 Tu	12:16am	3.4 L	6:13am	6.7 H	12:06pm	1.4 L	7:07pm	8.1 H
17 W	12:55am	2.8 L	7:05am	6.5 H	12:43pm	2.3 L	7:29pm	8.1 H
18 Th	1:35am	2.2 L	8:01am	6.3 H	1:20pm	3.3 L	7:53pm	8 H
19 F	2:18am	1.8 L	9:04am	6.1 H	2:00pm	4.2 L	8:21pm	7.8 H
20 Sa	3:04am	1.4 L	10:23am	6 H	2:44pm	5.1 L	8:51pm	7.7 H
21 Su	3:55am	1.1 L	12:40pm	6.2 H	3:42pm	5.9 L	9:25pm	7.5 H
22 M	4:51am	0.8 L	2:26pm	6.7 H	5:06pm	6.4 L	10:06pm	7.3 H
23 Tu	5:50am	0.5 L	3:15pm	7.1 H	6:34pm	6.6 L	10:57pm	7.2 H
24 W	6:47am	0 L	3:47pm	7.5 H	7:38pm	6.5 L		
25 Th	12:01am	7.2 H	7:39am	-0.4 L	4:12pm	7.7 H	8:23pm	6.1 L
26 F	1:10am	7.3 H	8:26am	-0.7 L	4:33pm	7.9 H	9:01pm	5.5 L
27 Sa	2:16am	7.5 H	9:10am	-0.9 L	4:54pm	8.1 H	9:40pm	4.6 L
28 Su	3:19am	7.6 H	9:52am	-0.7 L	5:17pm	8.3 H	10:22pm	3.6 L
29 M	4:21am	7.7 H	10:33am	-0.2 L	5:43pm	8.4 H	11:05pm	2.5 L
30 Tu	5:23am	7.7 H	11:15am	0.6 L	6:11pm	8.6 H	11:52pm	1.4 L
31 W	6:26am	7.6 H	11:58am	1.7 L	6:41pm	8.7 H		
September								
1 Th	12:40am	0.5 L	7:32am	7.4 H	12:43pm	2.9 L	7:15pm	8.7 H
2 F	1:32am	-0.2 L	8:44am	7.2 H	1:32pm	4.1 L	7:51pm	8.6 H

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
3 Sa	2:27am	-0.5 L	10:07am	7.1 H	2:28pm	5.1 L	8:31pm	8.4 H
4 Su	3:28am	-0.6 L	11:44am	7.2 H	3:40pm	5.9 L	9:18pm	8 H
5 M	4:33am	-0.5 L	1:16pm	7.5 H	5:16pm	6.3 L	10:16pm	7.5 H
6 Tu	5:43am	-0.3 L	2:22pm	7.8 H	7:04pm	6.1 L	11:28pm	7.1 H
7 W	6:50am	-0.1 L	3:11pm	8.1 H	8:19pm	5.6 L		
8 Th	12:50am	6.9 H	7:50am	0.1 L	3:50pm	8.2 H	9:06pm	5 L
9 F	2:07am	6.9 H	8:40am	0.4 L	4:22pm	8.2 H	9:40pm	4.3 L
10 Sa	3:11am	7 H	9:21am	0.8 L	4:48pm	8.1 H	10:09pm	3.7 L
11 Su	4:05am	7 H	9:58am	1.3 L	5:09pm	8 H	10:36pm	3 L
12 M	4:54am	7.1 H	10:33am	1.9 L	5:25pm	7.9 H	11:05pm	2.3 L
13 Tu	5:40am	7.2 H	11:07am	2.6 L	5:41pm	7.9 H	11:36pm	1.7 L
14 W	6:25am	7.2 H	11:43am	3.3 L	6:01pm	7.8 H		
15 Th	12:09am	1.2 L	7:12am	7.2 H	12:20pm	4.1 L	6:24pm	7.8 H
16 F	12:45am	0.8 L	8:03am	7.2 H	1:00pm	4.8 L	6:51pm	7.6 H
17 Sa	1:24am	0.6 L	8:58am	7.2 H	1:44pm	5.4 L	7:21pm	7.4 H
18 Su	2:07am	0.5 L	10:05am	7.1 H	2:37pm	6 L	7:53pm	7.2 H
19 M	2:56am	0.5 L	11:32am	7.1 H	3:47pm	6.4 L	8:29pm	7 H
20 Tu	3:52am	0.5 L	1:05pm	7.2 H	5:23pm	6.5 L	9:18pm	6.8 H
21 W	4:55am	0.5 L	2:00pm	7.5 H	6:48pm	6.2 L	10:28pm	6.6 H
22 Th	5:59am	0.5 L	2:35pm	7.6 H	7:31pm	5.7 L	11:51pm	6.6 H
23 F	6:57am	0.4 L	3:00pm	7.8 H	8:05pm	5 L		
24 Sa	1:12am	6.7 H	7:50am	0.5 L	3:24pm	8 H	8:40pm	3.9 L
25 Su	2:27am	7.1 H	8:38am	0.7 L	3:48pm	8.2 H	9:18pm	2.7 L
26 M	3:35am	7.5 H	9:23am	1.3 L	4:13pm	8.4 H	9:58pm	1.3 L
27 Tu	4:38am	7.9 H	10:07am	2.1 L	4:41pm	8.6 H	10:40pm	0.1 L
28 W	5:40am	8.2 H	10:52am	3 L	5:12pm	8.7 H	11:24pm	-0.8 L
29 Th	6:42am	8.3 H	11:39am	4 L	5:45pm	8.8 H		
30 F	12:11am	-1.4 L	7:45am	8.4 H	12:29pm	4.9 L	6:22pm	8.6 H
October								
1 Sa	1:00am	-1.6 L	8:52am	8.3 H	1:25pm	5.6 L	7:03pm	8.3 H
2 Su	1:53am	-1.4 L	10:05am	8.2 H	2:34pm	6.1 L	7:50pm	7.8 H
3 M	2:51am	-0.9 L	11:22am	8.2 H	4:09pm	6.3 L	8:46pm	7.3 H
4 Tu	3:55am	-0.2 L	12:35pm	8.2 H	6:12pm	5.9 L	9:58pm	6.7 H
5 W	5:04am	0.5 L	1:34pm	8.2 H	7:30pm	5.2 L	11:28pm	6.2 H
6 Th	6:14am	1.1 L	2:20pm	8.3 H	8:20pm	4.4 L		
7 F	1:08am	6.1 H	7:16am	1.6 L	2:56pm	8.2 H	8:55pm	3.6 L
8 Sa	2:32am	6.4 H	8:08am	2.2 L	3:24pm	8.1 H	9:22pm	2.9 L
9 Su	3:36am	6.7 H	8:53am	2.8 L	3:44pm	8 H	9:45pm	2.1 L
10 M	4:29am	7.1 H	9:32am	3.4 L	4:00pm	7.9 H	10:08pm	1.4 L
11 Tu	5:16am	7.4 H	10:09am	4 L	4:15pm	7.9 H	10:33pm	0.8 L
12 W	5:58am	7.7 H	10:45am	4.6 L	4:33pm	7.9 H	11:01pm	0.2 L
13 Th	6:39am	8 H	11:24am	5.2 L	4:56pm	7.8 H	11:32pm	-0.1 L
14 F	7:21am	8.1 H	12:04pm	5.7 L	5:22pm	7.7 H		
15 Sa	12:06am	-0.4 L	8:05am	8.2 H	12:48pm	6.1 L	5:50pm	7.5 H
16 Su	12:44am	-0.4 L	8:54am	8.2 H	1:38pm	6.4 L	6:19pm	7.3 H
17 M	1:26am	-0.3 L	9:48am	8.1 H	2:39pm	6.6 L	6:47pm	7 H
18 Tu	2:13am	-0.1 L	10:47am	8 H	4:07pm	6.6 L	7:21pm	6.7 H
19 W	3:06am	0.2 L	11:45am	8 H	6:34pm	6.2 L	8:36pm	6.3 H
20 Th	4:05am	0.5 L	12:33pm	8.1 H	6:48pm	5.6 L	10:12pm	6 H
21 F	5:08am	1 L	1:11pm	8.1 H	7:12pm	4.7 L	11:50pm	5.9 H
22 Sa	6:10am	1.5 L	1:42pm	8.3 H	7:43pm	3.5 L		
23 Su	1:24am	6.2 H	7:08am	2.1 L	2:12pm	8.4 H	8:18pm	2.1 L
24 M	2:48am	6.8 H	8:02am	2.8 L	2:41pm	8.6 H	8:56pm	0.6 L
25 Tu	3:58am	7.5 H	8:53am	3.6 L	3:11pm	8.8 H	9:35pm	-0.7 L
26 W	5:00am	8.2 H	9:42am	4.5 L	3:42pm	9 H	10:17pm	-1.8 L
27 Th	5:58am	8.8 H	10:32am	5.2 L	4:17pm	9 H	11:01pm	-2.4 L
28 F	6:54am	9.1 H	11:24am	5.8 L	4:55pm	8.9 H	11:46pm	-2.6 L
29 Sa	7:51am	9.2 H	12:20pm	6.3 L	5:36pm	8.6 H		
30 Su	12:34am	-2.4 L	8:49am	9.2 H	1:24pm	6.5 L	6:23pm	8.1 H
31 M	1:25am	-1.8 L	9:48am	9.1 H	2:46pm	6.5 L	7:17pm	7.4 H
November								
1 Tu	2:18am	-0.9 L	10:47am	8.9 H	4:45pm	6 L	8:21pm	6.6 H
2 W	3:16am	0.1 L	11:43am	8.8 H	6:18pm	5.2 L	9:42pm	5.9 H
3 Th	4:18am	1.2 L	12:33pm	8.6 H	7:15pm	4.3 L	11:25pm	5.5 H
4 F	5:22am	2.2 L	1:14pm	8.5 H	7:56pm	3.4 L		

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
5 Sa	1:26am	5.6 H	6:25am	3.1 L	1:45pm	8.4 H	8:28pm	2.5 L
6 Su**	1:55am	6.2 H	6:23am	4 L	1:09pm	8.2 H	7:53pm	1.7 L
7 M	2:58am	6.8 H	7:16am	4.7 L	1:27pm	8.1 H	8:15pm	0.9 L
8 Tu	3:49am	7.5 H	8:03am	5.4 L	1:45pm	8.1 H	8:38pm	0.2 L
9 W	4:32am	8 H	8:46am	5.9 L	2:06pm	8.1 H	9:03pm	-0.3 L
10 Th	5:11am	8.4 H	9:28am	6.3 L	2:31pm	8 H	9:32pm	-0.8 L
11 F	5:48am	8.7 H	10:09am	6.6 L	2:58pm	8 H	10:04pm	-1.1 L
12 Sa	6:24am	8.8 H	10:52am	6.8 L	3:27pm	7.8 H	10:39pm	-1.2 L
13 Su	7:02am	8.9 H	11:37am	6.9 L	3:55pm	7.6 H	11:17pm	-1.2 L
14 M	7:42am	8.9 H	12:30pm	7 L	4:23pm	7.3 H	11:58pm	-1 L
15 Tu	8:24am	8.9 H	1:35pm	6.8 L	4:51pm	7 H		
16 W	12:42am	-0.6 L	9:05am	8.9 H	3:00pm	6.4 L	5:55pm	6.5 H
17 Th	1:30am	-0.1 L	9:46am	8.8 H	4:21pm	5.7 L	7:32pm	5.9 H
18 F	2:21am	0.7 L	10:23am	8.8 H	5:00pm	4.7 L	9:11pm	5.4 H
19 Sa	3:18am	1.7 L	10:59am	8.8 H	5:37pm	3.4 L	10:59pm	5.4 H
20 Su	4:20am	2.8 L	11:32am	8.9 H	6:14pm	2 L		
21 M	12:51am	5.9 H	5:23am	3.9 L	12:05pm	9 H	6:53pm	0.5 L
22 Tu	2:18am	6.9 H	6:26am	4.9 L	12:39pm	9.2 H	7:34pm	-0.9 L
23 W	3:24am	7.9 H	7:25am	5.7 L	1:15pm	9.3 H	8:15pm	-2 L
24 Th	4:19am	8.7 H	8:21am	6.3 L	1:53pm	9.3 H	8:58pm	-2.8 L
25 F	5:10am	9.3 H	9:17am	6.7 L	2:34pm	9.2 H	9:42pm	-3.1 L
26 Sa	5:58am	9.6 H	10:13am	6.9 L	3:18pm	8.9 H	10:27pm	-2.9 L
27 Su	6:46am	9.7 H	11:12am	6.9 L	4:06pm	8.5 H	11:14pm	-2.4 L
28 M	7:32am	9.7 H	12:20pm	6.7 L	4:59pm	7.8 H		
29 Tu	12:01am	-1.6 L	8:18am	9.5 H	1:42pm	6.2 L	5:57pm	7.1 H
30 W	12:48am	-0.6 L	9:02am	9.3 H	3:21pm	5.5 L	7:04pm	6.2 H
December								
1 Th	1:37am	0.6 L	9:43am	9.1 H	4:37pm	4.6 L	8:25pm	5.5 H
2 F	2:28am	1.9 L	10:20am	8.9 H	5:31pm	3.6 L	10:15pm	5.1 H
3 Sa	3:23am	3.2 L	10:51am	8.7 H	6:13pm	2.7 L		
4 Su	12:40am	5.4 H	4:24am	4.4 L	11:18am	8.6 H	6:46pm	1.8 L
5 M	2:11am	6.3 H	5:29am	5.4 L	11:43am	8.4 H	7:14pm	1 L
6 Tu	3:12am	7.2 H	6:35am	6.2 L	12:09pm	8.4 H	7:40pm	0.3 L
7 W	3:58am	7.9 H	7:35am	6.8 L	12:37pm	8.3 H	8:07pm	-0.3 L
8 Th	4:37am	8.5 H	8:28am	7.1 L	1:08pm	8.3 H	8:37pm	-0.8 L
9 F	5:12am	8.9 H	9:13am	7.3 L	1:41pm	8.2 H	9:09pm	-1.2 L
10 Sa	5:44am	9.1 H	9:55am	7.3 L	2:16pm	8.2 H	9:43pm	-1.5 L
11 Su	6:14am	9.2 H	10:35am	7.3 L	2:53pm	8 H	10:19pm	-1.6 L
12 M	6:45am	9.3 H	11:19am	7.1 L	3:33pm	7.8 H	10:57pm	-1.6 L
13 Tu	7:16am	9.3 H	12:08pm	6.9 L	4:18pm	7.4 H	11:37pm	-1.3 L
14 W	7:48am	9.4 H	1:03pm	6.4 L	5:15pm	6.9 H		
15 Th	12:18am	-0.7 L	8:20am	9.4 H	2:04pm	5.6 L	6:24pm	6.3 H
16 F	1:01am	0.2 L	8:53am	9.4 H	3:05pm	4.7 L	7:46pm	5.7 H
17 Sa	1:46am	1.4 L	9:25am	9.4 H	4:02pm	3.4 L	9:21pm	5.3 H
18 Su	2:36am	2.8 L	9:58am	9.4 H	4:53pm	2.1 L	11:22pm	5.4 H
19 M	3:34am	4.2 L	10:32am	9.4 H	5:41pm	0.7 L		
20 Tu	1:28am	6.3 H	4:43am	5.5 L	11:09am	9.4 H	6:28pm	-0.6 L
21 W	2:46am	7.4 H	5:57am	6.5 L	11:48am	9.4 H	7:14pm	-1.6 L
22 Th	3:40am	8.4 H	7:06am	7 L	12:33pm	9.4 H	7:59pm	-2.3 L
23 F	4:26am	9.1 H	8:10am	7.3 L	1:21pm	9.3 H	8:44pm	-2.7 L
24 Sa	5:08am	9.5 H	9:09am	7.2 L	2:12pm	9.1 H	9:28pm	-2.8 L
25 Su	5:48am	9.7 H	10:06am	7 L	3:04pm	8.7 H	10:12pm	-2.4 L
26 M	6:26am	9.7 H	11:03am	6.6 L	3:58pm	8.2 H	10:55pm	-1.8 L
27 Tu	7:03am	9.7 H	12:03pm	6.1 L	4:53pm	7.6 H	11:38pm	-1 L
28 W	7:37am	9.5 H	1:07pm	5.5 L	5:51pm	6.9 H		
29 Th	12:20am	0.1 L	8:09am	9.4 H	2:14pm	4.8 L	6:55pm	6.1 H
30 F	1:01am	1.4 L	8:38am	9.2 H	3:18pm	4 L	8:10pm	5.5 H
31 Sa	1:43am	2.7 L	9:04am	9 H	4:14pm	3.1 L	9:55pm	5.2 H

Aberdeen 2011 Water Level Predictions

All times listed are in local time, and all heights are in feet referenced to Mean Lower Low Water (MLLW).

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.	
January									
1	Sa	3:52am	3.8 L	10:10am	11.2 H	4:55pm	-0.4 L	11:47pm	8.7 H
2	Su	4:50am	3.8 L	11:03am	11.2 H	5:44pm	-0.8 L		
3	M	12:41am	9.1 H	5:43am	3.7 L	11:53am	11.2 H	6:30pm	-0.9 L
4	Tu	1:27am	9.4 H	6:33am	3.6 L	12:39pm	11 H	7:12pm	-0.8 L
5	W	2:07am	9.6 H	7:19am	3.4 L	1:23pm	10.7 H	7:51pm	-0.6 L
6	Th	2:44am	9.7 H	8:02am	3.3 L	2:03pm	10.3 H	8:28pm	-0.3 L
7	F	3:17am	9.7 H	8:44am	3.2 L	2:42pm	9.8 H	9:04pm	0.2 L
8	Sa	3:48am	9.6 H	9:26am	3.1 L	3:21pm	9.3 H	9:39pm	0.7 L
9	Su	4:18am	9.6 H	10:09am	3 L	4:02pm	8.8 H	10:14pm	1.4 L
10	M	4:50am	9.6 H	10:56am	3 L	4:49pm	8.2 H	10:50pm	2.2 L
11	Tu	5:25am	9.6 H	11:49am	2.9 L	5:44pm	7.6 H	11:31pm	2.9 L
12	W	6:06am	9.6 H	12:47pm	2.7 L	6:48pm	7.2 H		
13	Th	12:22am	3.7 L	6:54am	9.7 H	1:49pm	2.4 L	8:02pm	7.1 H
14	F	1:26am	4.3 L	7:48am	9.9 H	2:51pm	1.8 L	9:17pm	7.3 H
15	Sa	2:33am	4.6 L	8:46am	10.2 H	3:48pm	1.1 L	10:26pm	7.7 H
16	Su	3:36am	4.6 L	9:43am	10.6 H	4:41pm	0.4 L	11:25pm	8.3 H
17	M	4:34am	4.3 L	10:38am	11 H	5:29pm	-0.4 L		
18	Tu	12:17am	8.9 H	5:27am	3.9 L	11:30am	11.3 H	6:15pm	-1 L
19	W	1:04am	9.5 H	6:18am	3.3 L	12:20pm	11.6 H	6:58pm	-1.4 L
20	Th	1:46am	10 H	7:06am	2.7 L	1:09pm	11.7 H	7:40pm	-1.5 L
21	F	2:26am	10.4 H	7:54am	2.1 L	1:57pm	11.5 H	8:22pm	-1.4 L
22	Sa	3:05am	10.7 H	8:41am	1.6 L	2:46pm	11.1 H	9:03pm	-0.9 L
23	Su	3:43am	11 H	9:31am	1.2 L	3:37pm	10.4 H	9:46pm	-0.2 L
24	M	4:22am	11.1 H	10:23am	1.1 L	4:30pm	9.6 H	10:30pm	0.8 L
25	Tu	5:03am	11 H	11:20am	1 L	5:30pm	8.7 H	11:19pm	1.9 L
26	W	5:50am	10.9 H	12:22pm	1.1 L	6:37pm	7.9 H		
27	Th	12:16am	2.9 L	6:43am	10.6 H	1:28pm	1 L	7:55pm	7.5 H
28	F	1:20am	3.7 L	7:45am	10.4 H	2:36pm	0.8 L	9:19pm	7.5 H
29	Sa	2:28am	4.1 L	8:50am	10.3 H	3:40pm	0.5 L	10:36pm	7.9 H
30	Su	3:34am	4.2 L	9:54am	10.3 H	4:37pm	0.2 L	11:38pm	8.5 H
31	M	4:35am	3.9 L	10:51am	10.4 H	5:26pm	-0.1 L		
February									
1	Tu	12:25am	8.9 H	5:29am	3.5 L	11:42am	10.5 H	6:10pm	-0.3 L
2	W	1:04am	9.3 H	6:17am	3.1 L	12:27pm	10.4 H	6:49pm	-0.3 L
3	Th	1:38am	9.6 H	7:00am	2.7 L	1:08pm	10.3 H	7:25pm	-0.1 L
4	F	2:10am	9.7 H	7:41am	2.4 L	1:47pm	10.1 H	8:00pm	0.1 L
5	Sa	2:38am	9.8 H	8:20am	2.2 L	2:24pm	9.8 H	8:33pm	0.5 L
6	Su	3:06am	9.9 H	8:59am	2 L	3:01pm	9.4 H	9:06pm	1.1 L
7	M	3:33am	9.9 H	9:38am	2 L	3:40pm	8.9 H	9:37pm	1.7 L
8	Tu	4:00am	9.9 H	10:19am	2 L	4:22pm	8.4 H	10:09pm	2.4 L
9	W	4:31am	9.9 H	11:06am	2.1 L	5:11pm	7.8 H	10:42pm	3.1 L
10	Th	5:07am	9.8 H	12:00pm	2.2 L	6:11pm	7.3 H	11:26pm	3.9 L
11	F	5:54am	9.6 H	1:03pm	2.1 L	7:23pm	7 H		
12	Sa	12:36am	4.5 L	6:55am	9.6 H	2:09pm	1.8 L	8:43pm	7 H
13	Su	1:55am	4.7 L	8:04am	9.7 H	3:12pm	1.2 L	9:56pm	7.5 H
14	M	3:07am	4.5 L	9:13am	10 H	4:10pm	0.5 L	10:56pm	8.2 H
15	Tu	4:10am	4 L	10:16am	10.5 H	5:01pm	-0.2 L	11:47pm	8.9 H
16	W	5:07am	3.2 L	11:13am	11 H	5:48pm	-0.8 L		
17	Th	12:31am	9.7 H	5:59am	2.2 L	12:07pm	11.3 H	6:33pm	-1.1 L
18	F	1:13am	10.3 H	6:48am	1.3 L	12:59pm	11.4 H	7:15pm	-1.2 L
19	Sa	1:52am	10.9 H	7:36am	0.6 L	1:49pm	11.3 H	7:57pm	-0.9 L
20	Su	2:30am	11.3 H	8:24am	0 L	2:39pm	10.9 H	8:39pm	-0.4 L
21	M	3:08am	11.5 H	9:13am	-0.3 L	3:30pm	10.3 H	9:22pm	0.5 L
22	Tu	3:48am	11.5 H	10:03am	-0.2 L	4:22pm	9.5 H	10:06pm	1.4 L
23	W	4:30am	11.2 H	10:57am	0.1 L	5:19pm	8.6 H	10:56pm	2.5 L
24	Th	5:17am	10.7 H	11:56am	0.5 L	6:24pm	7.9 H	11:52pm	3.4 L
25	F	6:12am	10.1 H	1:00pm	0.9 L	7:39pm	7.4 H		
26	Sa	12:59am	4 L	7:18am	9.6 H	2:08pm	1.1 L	9:01pm	7.4 H

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.	
27	Su	2:11am	4.2 L	8:30am	9.3 H	3:15pm	1 L	10:15pm	7.8 H
28	M	3:20am	4 L	9:38am	9.4 H	4:12pm	0.8 L	11:11pm	8.4 H
March									
1	Tu	4:22am	3.5 L	10:37am	9.5 H	5:01pm	0.6 L	11:52pm	8.8 H
2	W	5:13am	2.9 L	11:27am	9.7 H	5:42pm	0.4 L		
3	Th	12:26am	9.2 H	5:58am	2.3 L	12:11pm	9.8 H	6:20pm	0.4 L
4	F	12:58am	9.6 H	6:39am	1.8 L	12:51pm	9.8 H	6:55pm	0.6 L
5	Sa	1:27am	9.8 H	7:18am	1.4 L	1:30pm	9.7 H	7:29pm	0.8 L
6	Su	1:55am	10 H	7:55am	1 L	2:08pm	9.6 H	8:03pm	1.2 L
7	M	2:22am	10.1 H	8:32am	0.9 L	2:45pm	9.3 H	8:35pm	1.7 L
8	Tu	2:48am	10.1 H	9:09am	0.8 L	3:24pm	8.9 H	9:07pm	2.2 L
9	W	3:14am	10.1 H	9:48am	0.9 L	4:04pm	8.4 H	9:38pm	2.8 L
10	Th	3:43am	9.9 H	10:31am	1.2 L	4:50pm	7.9 H	10:11pm	3.4 L
11	F	4:17am	9.7 H	11:22am	1.4 L	5:46pm	7.4 H	10:55pm	4 L
12	Sa	5:03am	9.5 H	12:22pm	1.6 L	6:54pm	7.1 H		
13	Su*	12:06am	4.4 L	7:10am	9.2 H	2:29pm	1.5 L	9:10pm	7.1 H
14	M	2:29am	4.5 L	8:29am	9.2 H	3:34pm	1.1 L	10:20pm	7.6 H
15	Tu	3:44am	4 L	9:47am	9.4 H	4:34pm	0.6 L	11:19pm	8.3 H
16	W	4:49am	3.2 L	10:55am	9.9 H	5:28pm	0.1 L		
17	Th	12:08am	9.2 H	5:46am	2.1 L	11:57am	10.4 H	6:17pm	-0.3 L
18	F	12:52am	10 H	6:40am	0.9 L	12:53pm	10.7 H	7:03pm	-0.4 L
19	Sa	1:33am	10.8 H	7:30am	-0.1 L	1:47pm	10.9 H	7:48pm	-0.3 L
20	Su	2:13am	11.3 H	8:18am	-0.9 L	2:40pm	10.8 H	8:32pm	0 L
21	M	2:53am	11.7 H	9:06am	-1.4 L	3:31pm	10.5 H	9:15pm	0.6 L
22	Tu	3:34am	11.7 H	9:53am	-1.5 L	4:23pm	10 H	9:59pm	1.3 L
23	W	4:15am	11.4 H	10:42am	-1.1 L	5:15pm	9.3 H	10:45pm	2.2 L
24	Th	4:59am	10.9 H	11:33am	-0.6 L	6:09pm	8.6 H	11:36pm	3 L
25	F	5:48am	10.2 H	12:29pm	0.2 L	7:10pm	8 H		
26	Sa	12:34am	3.6 L	6:45am	9.4 H	1:30pm	0.8 L	8:17pm	7.6 H
27	Su	1:41am	4 L	7:53am	8.7 H	2:35pm	1.2 L	9:29pm	7.6 H
28	M	2:53am	4 L	9:06am	8.4 H	3:38pm	1.4 L	10:34pm	7.9 H
29	Tu	4:03am	3.5 L	10:15am	8.4 H	4:35pm	1.3 L	11:24pm	8.4 H
30	W	5:02am	2.8 L	11:14am	8.6 H	5:24pm	1.2 L		
31	Th	12:04am	8.9 H	5:51am	2.1 L	12:04pm	8.8 H	6:06pm	1.2 L
April									
1	F	12:38am	9.3 H	6:35am	1.4 L	12:50pm	9.1 H	6:45pm	1.3 L
2	Sa	1:10am	9.7 H	7:14am	0.8 L	1:32pm	9.2 H	7:22pm	1.5 L
3	Su	1:41am	10 H	7:53am	0.4 L	2:13pm	9.3 H	7:58pm	1.7 L
4	M	2:11am	10.1 H	8:30am	0 L	2:53pm	9.3 H	8:33pm	2.1 L
5	Tu	2:40am	10.2 H	9:07am	-0.1 L	3:33pm	9.1 H	9:08pm	2.5 L
6	W	3:08am	10.2 H	9:45am	-0.1 L	4:13pm	8.8 H	9:42pm	2.9 L
7	Th	3:36am	10.1 H	10:23am	0 L	4:54pm	8.4 H	10:17pm	3.2 L
8	F	4:06am	9.9 H	11:05am	0.3 L	5:40pm	8 H	10:55pm	3.6 L
9	Sa	4:42am	9.6 H	11:53am	0.6 L	6:32pm	7.6 H	11:45pm	4 L
10	Su	5:32am	9.3 H	12:49pm	0.8 L	7:33pm	7.4 H		
11	M	12:54am	4.1 L	6:42am	8.9 H	1:52pm	1 L	8:38pm	7.6 H
12	Tu	2:11am	3.9 L	8:03am	8.7 H	2:55pm	0.9 L	9:41pm	8.1 H
13	W	3:23am	3.2 L	9:23am	8.8 H	3:56pm	0.8 L	10:36pm	8.8 H
14	Th	4:28am	2.2 L	10:35am	9.1 H	4:52pm	0.6 L	11:24pm	9.7 H
15	F	5:26am	0.9 L	11:40am	9.5 H	5:43pm	0.5 L		
16	Sa	12:09am	10.5 H	6:20am	-0.3 L	12:40pm	9.9 H	6:33pm	0.6 L
17	Su	12:53am	11.2 H	7:10am	-1.3 L	1:37pm	10.1 H	7:20pm	0.8 L
18	M	1:36am	11.6 H	7:59am	-1.9 L	2:31pm	10.1 H	8:07pm	1.2 L
19	Tu	2:19am	11.7 H	8:47am	-2.2 L	3:24pm	10 H	8:53pm	1.6 L
20	W	3:03am	11.6 H	9:34am	-2.1 L	4:15pm	9.6 H	9:39pm	2.2 L
21	Th	3:48am	11.1 H	10:21am	-1.6 L	5:06pm	9.2 H	10:27pm	2.7 L
22	F	4:34am	10.4 H	11:10am	-0.9 L	5:58pm	8.7 H	11:19pm	3.2 L
23	Sa	5:24am	9.6 H	12:01pm	-0.1 L	6:51pm	8.2 H		
24	Su	12:16am	3.6 L	6:20am	8.7 H	12:56pm	0.7 L	7:48pm	8 H
25	M	1:20am	3.8 L	7:23am	8 H	1:54pm	1.2 L	8:46pm	7.9 H
26	Tu	2:29am	3.6 L	8:31am	7.6 H	2:52pm	1.6 L	9:41pm	8.2 H
27	W	3:36am	3 L	9:39am	7.5 H	3:47pm	1.8 L	10:28pm	8.6 H
28	Th	4:34am	2.3 L	10:41am	7.7 H	4:37pm	2 L	11:09pm	9 H
29	F	5:23am	1.5 L	11:36am	8 H	5:23pm	2.1 L	11:47pm	9.5 H
30	Sa	6:06am	0.8 L	12:25pm	8.4 H	6:06pm	2.2 L		

Day		Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
May									
1	Su	12:22am	9.9 H	6:47am	0.1 L	1:11pm	8.7 H	6:47pm	2.4 L
2	M	12:57am	10.2 H	7:27am	-0.3 L	1:56pm	8.9 H	7:27pm	2.7 L
3	Tu	1:30am	10.3 H	8:06am	-0.6 L	2:40pm	9 H	8:06pm	2.9 L
4	W	2:04am	10.3 H	8:45am	-0.8 L	3:23pm	8.9 H	8:44pm	3.1 L
5	Th	2:36am	10.3 H	9:23am	-0.8 L	4:05pm	8.7 H	9:23pm	3.3 L
6	F	3:09am	10.1 H	10:03am	-0.7 L	4:48pm	8.5 H	10:02pm	3.5 L
7	Sa	3:45am	9.9 H	10:45am	-0.5 L	5:32pm	8.3 H	10:47pm	3.6 L
8	Su	4:27am	9.6 H	11:30am	-0.2 L	6:19pm	8.1 H	11:40pm	3.7 L
9	M	5:20am	9.1 H	12:21pm	0.1 L	7:10pm	8.1 H		
10	Tu	12:44am	3.5 L	6:27am	8.6 H	1:18pm	0.5 L	8:05pm	8.4 H
11	W	1:54am	3.1 L	7:44am	8.2 H	2:17pm	0.8 L	9:00pm	8.9 H
12	Th	3:02am	2.3 L	9:02am	8.1 H	3:17pm	1.1 L	9:52pm	9.5 H
13	F	4:07am	1.2 L	10:17am	8.3 H	4:15pm	1.3 L	10:42pm	10.3 H
14	Sa	5:06am	0 L	11:26am	8.6 H	5:10pm	1.5 L	11:30pm	10.9 H
15	Su	6:00am	-1 L	12:29pm	9 H	6:03pm	1.7 L		
16	M	12:17am	11.4 H	6:52am	-1.8 L	1:28pm	9.3 H	6:54pm	2 L
17	Tu	1:04am	11.6 H	7:41am	-2.3 L	2:24pm	9.5 H	7:44pm	2.2 L
18	W	1:51am	11.5 H	8:28am	-2.4 L	3:17pm	9.5 H	8:33pm	2.4 L
19	Th	2:38am	11.2 H	9:15am	-2.2 L	4:06pm	9.4 H	9:21pm	2.7 L
20	F	3:26am	10.7 H	10:00am	-1.7 L	4:54pm	9.1 H	10:10pm	3 L
21	Sa	4:13am	10 H	10:46am	-1 L	5:39pm	8.8 H	11:00pm	3.2 L
22	Su	5:01am	9.2 H	11:31am	-0.2 L	6:24pm	8.6 H	11:54pm	3.4 L
23	M	5:52am	8.4 H	12:19pm	0.5 L	7:10pm	8.4 H		
24	Tu	12:53am	3.4 L	6:48am	7.6 H	1:09pm	1.2 L	7:56pm	8.4 H
25	W	1:55am	3.1 L	7:50am	7.1 H	2:01pm	1.9 L	8:43pm	8.5 H
26	Th	2:58am	2.6 L	8:56am	6.9 H	2:54pm	2.3 L	9:29pm	8.8 H
27	F	3:56am	2 L	10:02am	7 H	3:47pm	2.7 L	10:13pm	9.2 H
28	Sa	4:48am	1.2 L	11:02am	7.4 H	4:38pm	2.9 L	10:56pm	9.6 H
29	Su	5:35am	0.5 L	11:58am	7.8 H	5:26pm	3.1 L	11:37pm	10 H
30	M	6:19am	-0.1 L	12:50pm	8.2 H	6:13pm	3.3 L		
31	Tu	12:17am	10.3 H	7:02am	-0.6 L	1:39pm	8.5 H	6:58pm	3.3 L
June									
1	W	12:57am	10.4 H	7:43am	-1 L	2:26pm	8.7 H	7:41pm	3.4 L
2	Th	1:36am	10.5 H	8:24am	-1.2 L	3:11pm	8.8 H	8:24pm	3.4 L
3	F	2:15am	10.4 H	9:04am	-1.3 L	3:54pm	8.8 H	9:06pm	3.3 L
4	Sa	2:55am	10.3 H	9:44am	-1.3 L	4:36pm	8.8 H	9:50pm	3.2 L
5	Su	3:36am	10 H	10:25am	-1.1 L	5:17pm	8.8 H	10:37pm	3.1 L
6	M	4:23am	9.6 H	11:08am	-0.8 L	5:58pm	8.9 H	11:30pm	2.9 L
7	Tu	5:16am	9.1 H	11:55am	-0.3 L	6:42pm	9 H		
8	W	12:29am	2.6 L	6:18am	8.5 H	12:46pm	0.3 L	7:29pm	9.3 H
9	Th	1:34am	2.1 L	7:29am	7.9 H	1:42pm	1 L	8:20pm	9.7 H
10	F	2:41am	1.4 L	8:45am	7.6 H	2:41pm	1.7 L	9:12pm	10.1 H
11	Sa	3:45am	0.5 L	10:02am	7.6 H	3:42pm	2.2 L	10:06pm	10.6 H
12	Su	4:46am	-0.4 L	11:14am	7.9 H	4:41pm	2.5 L	10:58pm	11 H
13	M	5:42am	-1.2 L	12:21pm	8.3 H	5:39pm	2.7 L	11:50pm	11.2 H
14	Tu	6:35am	-1.8 L	1:21pm	8.7 H	6:34pm	2.8 L		
15	W	12:42am	11.3 H	7:24am	-2.1 L	2:16pm	9 H	7:26pm	2.8 L
16	Th	1:32am	11.1 H	8:11am	-2.1 L	3:06pm	9.2 H	8:16pm	2.8 L
17	F	2:21am	10.8 H	8:55am	-1.9 L	3:51pm	9.2 H	9:04pm	2.8 L
18	Sa	3:08am	10.3 H	9:38am	-1.4 L	4:33pm	9.2 H	9:51pm	2.8 L
19	Su	3:53am	9.6 H	10:19am	-0.9 L	5:11pm	9 H	10:38pm	2.8 L
20	M	4:37am	8.9 H	10:59am	-0.2 L	5:48pm	8.9 H	11:26pm	2.9 L
21	Tu	5:22am	8.2 H	11:39am	0.6 L	6:24pm	8.8 H		
22	W	12:18am	2.8 L	6:12am	7.6 H	12:22pm	1.4 L	7:03pm	8.8 H
23	Th	1:14am	2.7 L	7:08am	7 H	1:08pm	2.1 L	7:45pm	8.8 H
24	F	2:13am	2.4 L	8:12am	6.7 H	2:00pm	2.8 L	8:30pm	9 H
25	Sa	3:13am	1.9 L	9:20am	6.7 H	2:56pm	3.3 L	9:19pm	9.3 H
26	Su	4:09am	1.2 L	10:28am	6.9 H	3:53pm	3.6 L	10:09pm	9.6 H
27	M	5:02am	0.6 L	11:31am	7.3 H	4:49pm	3.8 L	10:58pm	9.9 H
28	Tu	5:51am	-0.1 L	12:28pm	7.8 H	5:42pm	3.7 L	11:45pm	10.2 H
29	W	6:36am	-0.6 L	1:20pm	8.3 H	6:31pm	3.6 L		
30	Th	12:31am	10.5 H	7:20am	-1.1 L	2:08pm	8.6 H	7:19pm	3.4 L
July									
1	F	1:16am	10.6 H	8:02am	-1.4 L	2:52pm	8.9 H	8:04pm	3.1 L

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
2 Sa	2:01am	10.7 H	8:43am	-1.6 L	3:34pm	9.2 H	8:50pm	2.7 L
3 Su	2:45am	10.5 H	9:23am	-1.6 L	4:13pm	9.4 H	9:35pm	2.4 L
4 M	3:31am	10.3 H	10:04am	-1.4 L	4:51pm	9.5 H	10:23pm	2.1 L
5 Tu	4:18am	9.8 H	10:45am	-0.9 L	5:29pm	9.7 H	11:15pm	1.8 L
6 W	5:11am	9.1 H	11:29am	-0.2 L	6:09pm	9.9 H		
7 Th	12:11am	1.5 L	6:09am	8.4 H	12:16pm	0.6 L	6:53pm	10 H
8 F	1:13am	1.2 L	7:16am	7.7 H	1:10pm	1.6 L	7:43pm	10.2 H
9 Sa	2:18am	0.8 L	8:31am	7.3 H	2:11pm	2.4 L	8:38pm	10.3 H
10 Su	3:24am	0.2 L	9:51am	7.2 H	3:15pm	2.9 L	9:37pm	10.5 H
11 M	4:27am	-0.4 L	11:07am	7.5 H	4:20pm	3.2 L	10:37pm	10.6 H
12 Tu	5:25am	-0.9 L	12:14pm	8 H	5:21pm	3.2 L	11:35pm	10.7 H
13 W	6:19am	-1.3 L	1:12pm	8.5 H	6:18pm	3 L		
14 Th	12:29am	10.7 H	7:07am	-1.5 L	2:02pm	8.9 H	7:10pm	2.8 L
15 F	1:20am	10.6 H	7:52am	-1.5 L	2:46pm	9.1 H	7:59pm	2.5 L
16 Sa	2:07am	10.3 H	8:33am	-1.3 L	3:25pm	9.2 H	8:45pm	2.3 L
17 Su	2:51am	9.9 H	9:12am	-1 L	4:01pm	9.3 H	9:28pm	2.2 L
18 M	3:32am	9.5 H	9:49am	-0.5 L	4:33pm	9.2 H	10:11pm	2.2 L
19 Tu	4:12am	8.9 H	10:24am	0.2 L	5:03pm	9.2 H	10:55pm	2.1 L
20 W	4:53am	8.3 H	11:00am	0.9 L	5:34pm	9.1 H	11:40pm	2.1 L
21 Th	5:38am	7.7 H	11:36am	1.7 L	6:07pm	9.1 H		
22 F	12:30am	2.1 L	6:30am	7.2 H	12:16pm	2.5 L	6:46pm	9 H
23 Sa	1:26am	2.1 L	7:31am	6.7 H	1:05pm	3.2 L	7:32pm	9 H
24 Su	2:27am	1.8 L	8:41am	6.6 H	2:06pm	3.8 L	8:27pm	9.1 H
25 M	3:28am	1.4 L	9:54am	6.7 H	3:12pm	4.1 L	9:26pm	9.3 H
26 Tu	4:27am	0.9 L	11:03am	7.1 H	4:16pm	4.1 L	10:24pm	9.7 H
27 W	5:20am	0.2 L	12:03pm	7.7 H	5:14pm	3.8 L	11:19pm	10.1 H
28 Th	6:09am	-0.4 L	12:54pm	8.2 H	6:08pm	3.4 L		
29 F	12:11am	10.4 H	6:54am	-1 L	1:40pm	8.8 H	6:58pm	2.8 L
30 Sa	1:00am	10.7 H	7:37am	-1.4 L	2:23pm	9.3 H	7:45pm	2.2 L
31 Su	1:48am	10.8 H	8:18am	-1.6 L	3:02pm	9.7 H	8:32pm	1.6 L
August								
1 M	2:35am	10.7 H	8:59am	-1.5 L	3:40pm	10 H	9:18pm	1.1 L
2 Tu	3:23am	10.4 H	9:39am	-1.2 L	4:16pm	10.3 H	10:06pm	0.7 L
3 W	4:12am	9.9 H	10:20am	-0.5 L	4:53pm	10.5 H	10:56pm	0.4 L
4 Th	5:04am	9.2 H	11:03am	0.3 L	5:33pm	10.5 H	11:50pm	0.4 L
5 F	6:01am	8.4 H	11:50am	1.3 L	6:18pm	10.4 H		
6 Sa	12:50am	0.4 L	7:06am	7.7 H	12:45pm	2.3 L	7:10pm	10.2 H
7 Su	1:54am	0.4 L	8:21am	7.2 H	1:48pm	3.1 L	8:11pm	10 H
8 M	3:02am	0.3 L	9:41am	7.2 H	2:57pm	3.5 L	9:18pm	9.9 H
9 Tu	4:08am	0 L	10:59am	7.5 H	4:05pm	3.5 L	10:25pm	10 H
10 W	5:08am	-0.3 L	12:04pm	8 H	5:09pm	3.2 L	11:26pm	10.1 H
11 Th	6:00am	-0.6 L	12:55pm	8.5 H	6:06pm	2.8 L		
12 F	12:20am	10.1 H	6:47am	-0.8 L	1:38pm	8.9 H	6:56pm	2.3 L
13 Sa	1:09am	10.1 H	7:28am	-0.7 L	2:15pm	9.2 H	7:41pm	1.9 L
14 Su	1:52am	9.9 H	8:06am	-0.6 L	2:48pm	9.4 H	8:24pm	1.6 L
15 M	2:33am	9.7 H	8:42am	-0.2 L	3:19pm	9.5 H	9:04pm	1.4 L
16 Tu	3:12am	9.4 H	9:17am	0.3 L	3:47pm	9.5 H	9:43pm	1.3 L
17 W	3:50am	9 H	9:50am	0.9 L	4:14pm	9.5 H	10:22pm	1.3 L
18 Th	4:29am	8.5 H	10:23am	1.6 L	4:41pm	9.4 H	11:03pm	1.4 L
19 F	5:11am	8 H	10:55am	2.3 L	5:12pm	9.3 H	11:48pm	1.5 L
20 Sa	5:59am	7.4 H	11:30am	3 L	5:48pm	9.2 H		
21 Su	12:40am	1.7 L	6:57am	7 H	12:14pm	3.6 L	6:35pm	9 H
22 M	1:41am	1.8 L	8:06am	6.7 H	1:21pm	4.2 L	7:36pm	8.9 H
23 Tu	2:46am	1.6 L	9:22am	6.7 H	2:38pm	4.4 L	8:46pm	9 H
24 W	3:49am	1.1 L	10:32am	7.2 H	3:48pm	4.2 L	9:55pm	9.3 H
25 Th	4:47am	0.5 L	11:31am	7.8 H	4:50pm	3.6 L	10:57pm	9.8 H
26 F	5:38am	-0.1 L	12:21pm	8.5 H	5:46pm	2.8 L	11:52pm	10.3 H
27 Sa	6:24am	-0.7 L	1:04pm	9.2 H	6:37pm	1.9 L		
28 Su	12:44am	10.6 H	7:08am	-1 L	1:44pm	9.8 H	7:25pm	1 L
29 M	1:34am	10.8 H	7:50am	-1.1 L	2:23pm	10.4 H	8:12pm	0.2 L
30 Tu	2:24am	10.8 H	8:32am	-0.9 L	3:00pm	10.8 H	8:59pm	-0.4 L
31 W	3:14am	10.5 H	9:13am	-0.4 L	3:38pm	11.1 H	9:46pm	-0.7 L
September								
1 Th	4:04am	10 H	9:56am	0.3 L	4:17pm	11.1 H	10:36pm	-0.7 L
2 F	4:57am	9.3 H	10:40am	1.2 L	4:59pm	10.9 H	11:28pm	-0.5 L

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
3 Sa	5:54am	8.5 H	11:29am	2.2 L	5:46pm	10.5 H		
4 Su	12:26am	-0.1 L	6:58am	7.9 H	12:25pm	3 L	6:42pm	10 H
5 M	1:29am	0.3 L	8:10am	7.4 H	1:31pm	3.6 L	7:49pm	9.5 H
6 Tu	2:37am	0.6 L	9:29am	7.4 H	2:44pm	3.8 L	9:03pm	9.2 H
7 W	3:44am	0.6 L	10:42am	7.8 H	3:55pm	3.5 L	10:14pm	9.2 H
8 Th	4:44am	0.4 L	11:39am	8.3 H	4:58pm	2.9 L	11:15pm	9.3 H
9 F	5:35am	0.2 L	12:24pm	8.8 H	5:52pm	2.3 L		
10 Sa	12:08am	9.5 H	6:19am	0.2 L	1:01pm	9.2 H	6:39pm	1.7 L
11 Su	12:53am	9.6 H	6:59am	0.3 L	1:34pm	9.5 H	7:21pm	1.2 L
12 M	1:35am	9.6 H	7:35am	0.5 L	2:04pm	9.7 H	8:00pm	0.8 L
13 Tu	2:15am	9.5 H	8:11am	0.9 L	2:32pm	9.9 H	8:38pm	0.6 L
14 W	2:53am	9.3 H	8:45am	1.3 L	2:59pm	9.9 H	9:15pm	0.5 L
15 Th	3:31am	9 H	9:18am	1.8 L	3:26pm	9.9 H	9:52pm	0.5 L
16 F	4:10am	8.7 H	9:51am	2.4 L	3:52pm	9.7 H	10:31pm	0.7 L
17 Sa	4:51am	8.2 H	10:23am	3 L	4:21pm	9.6 H	11:13pm	0.9 L
18 Su	5:38am	7.7 H	10:57am	3.5 L	4:56pm	9.3 H		
19 M	12:01am	1.3 L	6:32am	7.3 H	11:41am	4.1 L	5:42pm	9 H
20 Tu	12:59am	1.5 L	7:38am	7 H	12:50pm	4.4 L	6:50pm	8.7 H
21 W	2:04am	1.5 L	8:50am	7.1 H	2:10pm	4.5 L	8:09pm	8.6 H
22 Th	3:09am	1.3 L	9:57am	7.6 H	3:23pm	4 L	9:26pm	8.9 H
23 F	4:09am	0.8 L	10:53am	8.3 H	4:27pm	3.1 L	10:33pm	9.3 H
24 Sa	5:02am	0.4 L	11:40am	9.1 H	5:24pm	2.1 L	11:33pm	9.9 H
25 Su	5:51am	0 L	12:22pm	9.9 H	6:16pm	0.9 L		
26 M	12:28am	10.3 H	6:37am	-0.1 L	1:02pm	10.6 H	7:05pm	-0.2 L
27 Tu	1:21am	10.5 H	7:21am	0 L	1:42pm	11.2 H	7:53pm	-1 L
28 W	2:13am	10.6 H	8:05am	0.3 L	2:21pm	11.6 H	8:40pm	-1.6 L
29 Th	3:05am	10.4 H	8:48am	0.8 L	3:02pm	11.7 H	9:27pm	-1.7 L
30 F	3:57am	10 H	9:33am	1.4 L	3:44pm	11.5 H	10:16pm	-1.5 L
October								
1 Sa	4:51am	9.4 H	10:20am	2.2 L	4:30pm	11.1 H	11:07pm	-1 L
2 Su	5:47am	8.8 H	11:11am	2.9 L	5:20pm	10.4 H		
3 M	12:02am	-0.3 L	6:47am	8.3 H	12:09pm	3.5 L	6:20pm	9.6 H
4 Tu	1:02am	0.4 L	7:54am	7.9 H	1:16pm	3.9 L	7:28pm	8.9 H
5 W	2:07am	0.9 L	9:04am	8 H	2:30pm	3.8 L	8:43pm	8.5 H
6 Th	3:11am	1.1 L	10:08am	8.3 H	3:41pm	3.3 L	9:54pm	8.4 H
7 F	4:10am	1.2 L	11:00am	8.7 H	4:43pm	2.6 L	10:56pm	8.6 H
8 Sa	5:00am	1.2 L	11:41am	9.2 H	5:34pm	1.8 L	11:48pm	8.8 H
9 Su	5:44am	1.3 L	12:16pm	9.6 H	6:17pm	1.1 L		
10 M	12:34am	9 H	6:24am	1.5 L	12:48pm	10 H	6:57pm	0.6 L
11 Tu	1:16am	9.2 H	7:02am	1.7 L	1:18pm	10.2 H	7:36pm	0.2 L
12 W	1:57am	9.3 H	7:39am	2.1 L	1:48pm	10.3 H	8:13pm	-0.1 L
13 Th	2:37am	9.2 H	8:15am	2.5 L	2:17pm	10.3 H	8:50pm	-0.2 L
14 F	3:17am	9.1 H	8:50am	2.9 L	2:45pm	10.3 H	9:27pm	-0.1 L
15 Sa	3:58am	8.9 H	9:25am	3.3 L	3:14pm	10.1 H	10:05pm	0.1 L
16 Su	4:40am	8.5 H	10:00am	3.7 L	3:44pm	9.9 H	10:46pm	0.4 L
17 M	5:25am	8.1 H	10:39am	4 L	4:19pm	9.5 H	11:31pm	0.7 L
18 Tu	6:16am	7.8 H	11:27am	4.3 L	5:07pm	9.1 H		
19 W	12:24am	1.1 L	7:13am	7.7 H	12:32pm	4.5 L	6:15pm	8.7 H
20 Th	1:24am	1.3 L	8:15am	7.8 H	1:47pm	4.3 L	7:37pm	8.5 H
21 F	2:26am	1.3 L	9:15am	8.3 H	2:59pm	3.6 L	8:57pm	8.5 H
22 Sa	3:27am	1.2 L	10:09am	9 H	4:04pm	2.6 L	10:09pm	8.9 H
23 Su	4:23am	1.1 L	10:56am	9.9 H	5:01pm	1.3 L	11:13pm	9.3 H
24 M	5:15am	1.1 L	11:39am	10.7 H	5:55pm	0.1 L		
25 Tu	12:13am	9.8 H	6:04am	1.1 L	12:22pm	11.4 H	6:45pm	-1 L
26 W	1:09am	10.1 H	6:52am	1.3 L	1:04pm	11.9 H	7:34pm	-1.8 L
27 Th	2:04am	10.2 H	7:39am	1.6 L	1:47pm	12.2 H	8:21pm	-2.2 L
28 F	2:58am	10.2 H	8:26am	2 L	2:32pm	12.1 H	9:09pm	-2.2 L
29 Sa	3:51am	10 H	9:14am	2.4 L	3:19pm	11.7 H	9:57pm	-1.8 L
30 Su	4:43am	9.6 H	10:03am	2.9 L	4:08pm	11.1 H	10:46pm	-1.2 L
31 M	5:36am	9.2 H	10:55am	3.4 L	5:00pm	10.2 H	11:37pm	-0.3 L
November								
1 Tu	6:31am	8.8 H	11:53am	3.7 L	5:58pm	9.3 H		
2 W	12:32am	0.5 L	7:28am	8.6 H	12:58pm	3.9 L	7:02pm	8.5 H
3 Th	1:29am	1.2 L	8:25am	8.6 H	2:07pm	3.7 L	8:11pm	8 H
4 F	2:28am	1.7 L	9:20am	8.8 H	3:16pm	3.2 L	9:21pm	7.8 H

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
5 Sa	3:24am	2.1 L	10:09am	9.1 H	4:17pm	2.4 L	10:25pm	7.9 H
6 Su**	3:16am	2.3 L	9:50am	9.5 H	4:07pm	1.7 L	10:21pm	8.2 H
7 M	4:03am	2.5 L	10:27am	10 H	4:51pm	0.9 L	11:11pm	8.5 H
8 Tu	4:46am	2.8 L	11:02am	10.3 H	5:32pm	0.3 L	11:57pm	8.8 H
9 W	5:28am	3 L	11:37am	10.6 H	6:11pm	-0.1 L		
10 Th	12:41am	9.1 H	6:09am	3.2 L	12:10pm	10.7 H	6:50pm	-0.4 L
11 F	1:24am	9.2 H	6:48am	3.4 L	12:44pm	10.7 H	7:28pm	-0.5 L
12 Sa	2:07am	9.2 H	7:27am	3.7 L	1:17pm	10.6 H	8:06pm	-0.5 L
13 Su	2:49am	9.1 H	8:06am	3.8 L	1:50pm	10.4 H	8:45pm	-0.3 L
14 M	3:31am	8.9 H	8:45am	4 L	2:25pm	10.2 H	9:25pm	-0.1 L
15 Tu	4:14am	8.7 H	9:28am	4.1 L	3:04pm	9.8 H	10:07pm	0.2 L
16 W	4:58am	8.6 H	10:17am	4.2 L	3:53pm	9.4 H	10:54pm	0.6 L
17 Th	5:46am	8.6 H	11:17am	4.1 L	4:55pm	8.8 H	11:46pm	1 L
18 F	6:37am	8.8 H	12:25pm	3.7 L	6:10pm	8.4 H		
19 Sa	12:44am	1.4 L	7:30am	9.2 H	1:34pm	3 L	7:29pm	8.2 H
20 Su	1:44am	1.7 L	8:21am	9.9 H	2:39pm	2 L	8:45pm	8.3 H
21 M	2:43am	2 L	9:11am	10.6 H	3:39pm	0.8 L	9:56pm	8.7 H
22 Tu	3:40am	2.2 L	9:59am	11.3 H	4:34pm	-0.4 L	11:00pm	9.1 H
23 W	4:34am	2.4 L	10:47am	11.9 H	5:26pm	-1.3 L		
24 Th	12:01am	9.5 H	5:27am	2.6 L	11:35am	12.2 H	6:16pm	-1.9 L
25 F	12:58am	9.8 H	6:18am	2.7 L	12:23pm	12.3 H	7:05pm	-2.2 L
26 Sa	1:52am	10 H	7:08am	2.8 L	1:12pm	12.1 H	7:52pm	-2.1 L
27 Su	2:43am	10 H	7:58am	3 L	2:02pm	11.6 H	8:38pm	-1.7 L
28 M	3:32am	9.9 H	8:47am	3.2 L	2:51pm	10.9 H	9:24pm	-1.1 L
29 Tu	4:19am	9.7 H	9:39am	3.4 L	3:41pm	10.1 H	10:10pm	-0.3 L
30 W	5:05am	9.4 H	10:33am	3.5 L	4:33pm	9.2 H	10:57pm	0.6 L
December								
1 Th	5:50am	9.2 H	11:31am	3.6 L	5:29pm	8.4 H	11:46pm	1.4 L
2 F	6:36am	9.1 H	12:34pm	3.5 L	6:30pm	7.7 H		
3 Sa	12:38am	2.2 L	7:23am	9.2 H	1:38pm	3.1 L	7:37pm	7.3 H
4 Su	1:31am	2.9 L	8:09am	9.4 H	2:38pm	2.5 L	8:44pm	7.3 H
5 M	2:25am	3.3 L	8:54am	9.7 H	3:32pm	1.8 L	9:48pm	7.6 H
6 Tu	3:18am	3.7 L	9:38am	10.1 H	4:21pm	1.1 L	10:45pm	8 H
7 W	4:08am	3.9 L	10:20am	10.4 H	5:05pm	0.5 L	11:37pm	8.5 H
8 Th	4:56am	4 L	11:01am	10.7 H	5:47pm	0 L		
9 F	12:25am	8.9 H	5:41am	4 L	11:41am	10.9 H	6:28pm	-0.4 L
10 Sa	1:11am	9.1 H	6:25am	4 L	12:21pm	10.9 H	7:08pm	-0.6 L
11 Su	1:55am	9.3 H	7:08am	4 L	1:00pm	10.9 H	7:47pm	-0.7 L
12 M	2:37am	9.4 H	7:49am	3.9 L	1:39pm	10.8 H	8:26pm	-0.7 L
13 Tu	3:17am	9.4 H	8:32am	3.8 L	2:18pm	10.5 H	9:05pm	-0.6 L
14 W	3:56am	9.4 H	9:16am	3.6 L	3:00pm	10.1 H	9:44pm	-0.3 L
15 Th	4:34am	9.4 H	10:04am	3.5 L	3:48pm	9.6 H	10:27pm	0.2 L
16 F	5:13am	9.6 H	10:59am	3.2 L	4:44pm	9 H	11:13pm	0.9 L
17 Sa	5:56am	9.8 H	12:01pm	2.9 L	5:50pm	8.4 H		
18 Su	12:05am	1.6 L	6:44am	10.1 H	1:07pm	2.3 L	7:05pm	8 H
19 M	1:04am	2.3 L	7:36am	10.5 H	2:13pm	1.4 L	8:25pm	7.9 H
20 Tu	2:06am	2.9 L	8:31am	11 H	3:16pm	0.5 L	9:41pm	8.1 H
21 W	3:09am	3.3 L	9:26am	11.5 H	4:15pm	-0.4 L	10:52pm	8.6 H
22 Th	4:09am	3.4 L	10:21am	11.8 H	5:10pm	-1.1 L	11:55pm	9.1 H
23 F	5:07am	3.4 L	11:16am	12 H	6:01pm	-1.6 L		
24 Sa	12:51am	9.5 H	6:02am	3.3 L	12:09pm	12 H	6:49pm	-1.8 L
25 Su	1:43am	9.9 H	6:53am	3.1 L	1:00pm	11.8 H	7:35pm	-1.7 L
26 M	2:30am	10 H	7:43am	3 L	1:50pm	11.3 H	8:18pm	-1.4 L
27 Tu	3:12am	10.1 H	8:31am	2.9 L	2:37pm	10.7 H	9:00pm	-0.8 L
28 W	3:52am	10 H	9:19am	2.9 L	3:22pm	10 H	9:40pm	-0.1 L
29 Th	4:29am	9.8 H	10:07am	3 L	4:07pm	9.2 H	10:21pm	0.8 L
30 F	5:05am	9.7 H	10:58am	3 L	4:54pm	8.4 H	11:02pm	1.7 L
31 Sa	5:42am	9.6 H	11:52am	3 L	5:48pm	7.7 H	11:46pm	2.6 L

Astoria 2011 Water Level Predictions

All times listed are in local time, and all heights are in feet referenced to Mean Lower Low Water (MLLW).

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.	
January									
1	Sa	4:15am	3.2 L	10:21am	9.7 H	5:37pm	-0.5 L	11:59pm	7.5 H
2	Su	5:14am	3.3 L	11:11am	9.7 H	6:26pm	-0.7 L		
3	M	12:49am	7.9 H	6:07am	3.2 L	11:59am	9.7 H	7:10pm	-0.8 L
4	Tu	1:35am	8.1 H	6:56am	3.2 L	12:44pm	9.6 H	7:49pm	-0.7 L
5	W	2:16am	8.3 H	7:42am	3.1 L	1:26pm	9.4 H	8:26pm	-0.4 L
6	Th	2:54am	8.3 H	8:25am	3 L	2:07pm	9 H	8:59pm	-0.1 L
7	F	3:30am	8.3 H	9:07am	2.8 L	2:47pm	8.6 H	9:29pm	0.2 L
8	Sa	4:02am	8.3 H	9:49am	2.7 L	3:27pm	8.1 H	9:58pm	0.6 L
9	Su	4:34am	8.3 H	10:32am	2.6 L	4:10pm	7.5 H	10:28pm	1.1 L
10	M	5:05am	8.3 H	11:19am	2.5 L	5:00pm	6.9 H	11:01pm	1.7 L
11	Tu	5:38am	8.2 H	12:12pm	2.4 L	6:02pm	6.3 H	11:40pm	2.3 L
12	W	6:17am	8.2 H	1:15pm	2.2 L	7:19pm	5.9 H		
13	Th	12:30am	3 L	7:03am	8.3 H	2:23pm	1.8 L	8:40pm	5.8 H
14	F	1:33am	3.5 L	7:57am	8.4 H	3:28pm	1.3 L	9:54pm	6.1 H
15	Sa	2:42am	3.8 L	8:53am	8.7 H	4:26pm	0.7 L	10:55pm	6.6 H
16	Su	3:49am	3.9 L	9:49am	9 H	5:17pm	0.1 L	11:47pm	7.1 H
17	M	4:49am	3.7 L	10:42am	9.4 H	6:03pm	-0.4 L		
18	Tu	12:33am	7.6 H	5:43am	3.5 L	11:32am	9.8 H	6:47pm	-0.8 L
19	W	1:15am	8 H	6:34am	3.1 L	12:22pm	10 H	7:28pm	-1 L
20	Th	1:55am	8.4 H	7:23am	2.6 L	1:11pm	10.1 H	8:08pm	-1.1 L
21	F	2:33am	8.8 H	8:12am	2.1 L	2:01pm	10 H	8:47pm	-0.9 L
22	Sa	3:10am	9.1 H	9:02am	1.7 L	2:51pm	9.6 H	9:26pm	-0.5 L
23	Su	3:48am	9.4 H	9:53am	1.4 L	3:44pm	8.9 H	10:05pm	0.1 L
24	M	4:28am	9.5 H	10:47am	1.2 L	4:41pm	8.1 H	10:47pm	0.9 L
25	Tu	5:11am	9.5 H	11:47am	1.1 L	5:47pm	7.3 H	11:35pm	1.7 L
26	W	6:00am	9.4 H	12:55pm	1 L	7:04pm	6.6 H		
27	Th	12:31am	2.5 L	6:56am	9.2 H	2:10pm	0.9 L	8:26pm	6.4 H
28	F	1:39am	3.2 L	7:59am	9.1 H	3:24pm	0.6 L	9:45pm	6.6 H
29	Sa	2:53am	3.5 L	9:04am	9 H	4:30pm	0.2 L	10:51pm	7 H
30	Su	4:03am	3.5 L	10:05am	9.1 H	5:24pm	-0.1 L	11:45pm	7.5 H
31	M	5:04am	3.3 L	11:00am	9.2 H	6:11pm	-0.3 L		
February									
1	Sa	4:15am	3.2 L	10:21am	9.7 H	5:37pm	-0.5 L	11:59pm	7.5 H
2	Su	5:14am	3.3 L	11:11am	9.7 H	6:26pm	-0.7 L		
3	M	12:49am	7.9 H	6:07am	3.2 L	11:59am	9.7 H	7:10pm	-0.8 L
4	Tu	1:35am	8.1 H	6:56am	3.2 L	12:44pm	9.6 H	7:49pm	-0.7 L
5	W	2:16am	8.3 H	7:42am	3.1 L	1:26pm	9.4 H	8:26pm	-0.4 L
6	Th	2:54am	8.3 H	8:25am	3 L	2:07pm	9 H	8:59pm	-0.1 L
7	F	3:30am	8.3 H	9:07am	2.8 L	2:47pm	8.6 H	9:29pm	0.2 L
8	Sa	4:02am	8.3 H	9:49am	2.7 L	3:27pm	8.1 H	9:58pm	0.6 L
9	Su	4:34am	8.3 H	10:32am	2.6 L	4:10pm	7.5 H	10:28pm	1.1 L
10	M	5:05am	8.3 H	11:19am	2.5 L	5:00pm	6.9 H	11:01pm	1.7 L
11	Tu	5:38am	8.2 H	12:12pm	2.4 L	6:02pm	6.3 H	11:40pm	2.3 L
12	W	6:17am	8.2 H	1:15pm	2.2 L	7:19pm	5.9 H		
13	Th	12:30am	3 L	7:03am	8.3 H	2:23pm	1.8 L	8:40pm	5.8 H
14	F	1:33am	3.5 L	7:57am	8.4 H	3:28pm	1.3 L	9:54pm	6.1 H
15	Sa	2:42am	3.8 L	8:53am	8.7 H	4:26pm	0.7 L	10:55pm	6.6 H
16	Su	3:49am	3.9 L	9:49am	9 H	5:17pm	0.1 L	11:47pm	7.1 H
17	M	4:49am	3.7 L	10:42am	9.4 H	6:03pm	-0.4 L		
18	Tu	12:33am	7.6 H	5:43am	3.5 L	11:32am	9.8 H	6:47pm	-0.8 L
19	W	1:15am	8 H	6:34am	3.1 L	12:22pm	10 H	7:28pm	-1 L
20	Th	1:55am	8.4 H	7:23am	2.6 L	1:11pm	10.1 H	8:08pm	-1.1 L
21	F	2:33am	8.8 H	8:12am	2.1 L	2:01pm	10 H	8:47pm	-0.9 L
22	Sa	3:10am	9.1 H	9:02am	1.7 L	2:51pm	9.6 H	9:26pm	-0.5 L
23	Su	3:48am	9.4 H	9:53am	1.4 L	3:44pm	8.9 H	10:05pm	0.1 L
24	M	4:28am	9.5 H	10:47am	1.2 L	4:41pm	8.1 H	10:47pm	0.9 L
25	Tu	5:11am	9.5 H	11:47am	1.1 L	5:47pm	7.3 H	11:35pm	1.7 L
26	W	6:00am	9.4 H	12:55pm	1 L	7:04pm	6.6 H		

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.	
27	Th	12:31am	2.5 L	6:56am	9.2 H	2:10pm	0.9 L	8:26pm	6.4 H
28	F	1:39am	3.2 L	7:59am	9.1 H	3:24pm	0.6 L	9:45pm	6.6 H
29	Sa	2:53am	3.5 L	9:04am	9 H	4:30pm	0.2 L	10:51pm	7 H
30	Su	4:03am	3.5 L	10:05am	9.1 H	5:24pm	-0.1 L	11:45pm	7.5 H
31	M	5:04am	3.3 L	11:00am	9.2 H	6:11pm	-0.3 L		
March									
1	Tu	4:53am	2.8 L	10:48am	8.5 H	5:44pm	0.2 L		
2	W	12:02am	8 H	5:43am	2.4 L	11:38am	8.6 H	6:22pm	0.3 L
3	Th	12:38am	8.3 H	6:27am	2 L	12:22pm	8.7 H	6:55pm	0.4 L
4	F	1:11am	8.6 H	7:08am	1.7 L	1:03pm	8.6 H	7:25pm	0.7 L
5	Sa	1:40am	8.7 H	7:45am	1.4 L	1:42pm	8.5 H	7:53pm	1.1 L
6	Su	2:06am	8.8 H	8:20am	1.3 L	2:20pm	8.3 H	8:21pm	1.4 L
7	M	2:30am	8.9 H	8:54am	1.1 L	2:58pm	8 H	8:48pm	1.8 L
8	Tu	2:52am	9 H	9:28am	1 L	3:36pm	7.7 H	9:16pm	2.2 L
9	W	3:16am	9 H	10:02am	1 L	4:18pm	7.2 H	9:47pm	2.6 L
10	Th	3:44am	8.9 H	10:42am	1.1 L	5:08pm	6.7 H	10:24pm	3 L
11	F	4:21am	8.8 H	11:32am	1.2 L	6:11pm	6.3 H	11:11pm	3.4 L
12	Sa	5:08am	8.5 H	12:36pm	1.2 L	7:28pm	6.1 H		
13	Su*	12:16am	3.7 L	7:11am	8.2 H	2:53pm	1.2 L	9:43pm	6.2 H
14	M	2:39am	3.8 L	8:32am	8 H	4:06pm	0.8 L	10:46pm	6.7 H
15	Tu	4:01am	3.4 L	9:54am	8.2 H	5:07pm	0.4 L	11:37pm	7.3 H
16	W	5:09am	2.8 L	11:04am	8.6 H	5:59pm	0.1 L		
17	Th	12:21am	8 H	6:08am	1.9 L	12:06pm	9 H	6:45pm	0 L
18	F	1:02am	8.7 H	7:02am	1.1 L	1:03pm	9.3 H	7:29pm	0 L
19	Sa	1:40am	9.3 H	7:53am	0.4 L	1:56pm	9.4 H	8:11pm	0.3 L
20	Su	2:19am	9.9 H	8:42am	-0.2 L	2:49pm	9.3 H	8:52pm	0.7 L
21	M	2:57am	10.2 H	9:31am	-0.5 L	3:41pm	9 H	9:34pm	1.2 L
22	Tu	3:37am	10.3 H	10:19am	-0.6 L	4:34pm	8.5 H	10:17pm	1.7 L
23	W	4:18am	10.1 H	11:10am	-0.4 L	5:30pm	8 H	11:03pm	2.3 L
24	Th	5:02am	9.7 H	12:04pm	0 L	6:30pm	7.4 H	11:54pm	2.8 L
25	F	5:52am	9 H	1:04pm	0.4 L	7:37pm	7 H		
26	Sa	12:56am	3.3 L	6:52am	8.3 H	2:12pm	0.8 L	8:49pm	6.8 H
27	Su	2:09am	3.5 L	8:04am	7.7 H	3:24pm	0.9 L	9:57pm	6.9 H
28	M	3:26am	3.3 L	9:21am	7.5 H	4:28pm	0.9 L	10:55pm	7.3 H
29	Tu	4:37am	2.8 L	10:31am	7.5 H	5:21pm	0.8 L	11:42pm	7.7 H
30	W	5:35am	2.2 L	11:30am	7.7 H	6:05pm	0.8 L		
31	Th	12:21am	8.1 H	6:23am	1.6 L	12:20pm	7.8 H	6:42pm	1 L
April									
1	F	12:56am	8.4 H	7:06am	1.2 L	1:06pm	8 H	7:16pm	1.2 L
2	Sa	1:27am	8.7 H	7:45am	0.8 L	1:48pm	8 H	7:47pm	1.5 L
3	Su	1:55am	8.8 H	8:22am	0.6 L	2:29pm	8 H	8:18pm	1.9 L
4	M	2:21am	8.9 H	8:57am	0.4 L	3:09pm	7.9 H	8:48pm	2.2 L
5	Tu	2:45am	9 H	9:30am	0.3 L	3:48pm	7.8 H	9:19pm	2.5 L
6	W	3:09am	9.1 H	10:03am	0.2 L	4:28pm	7.5 H	9:51pm	2.8 L
7	Th	3:37am	9.1 H	10:38am	0.2 L	5:10pm	7.2 H	10:26pm	3 L
8	F	4:10am	9 H	11:17am	0.3 L	5:57pm	6.8 H	11:07pm	3.2 L
9	Sa	4:50am	8.7 H	12:04pm	0.4 L	6:54pm	6.5 H	11:58pm	3.4 L
10	Su	5:41am	8.3 H	1:02pm	0.6 L	7:58pm	6.4 H		
11	M	1:05am	3.5 L	6:46am	7.9 H	2:11pm	0.7 L	9:04pm	6.6 H
12	Tu	2:25am	3.3 L	8:09am	7.6 H	3:21pm	0.6 L	10:02pm	7.1 H
13	W	3:44am	2.7 L	9:34am	7.6 H	4:23pm	0.6 L	10:53pm	7.7 H
14	Th	4:52am	1.8 L	10:49am	7.8 H	5:17pm	0.5 L	11:38pm	8.4 H
15	F	5:52am	0.9 L	11:54am	8.2 H	6:07pm	0.6 L		
16	Sa	12:20am	9.1 H	6:46am	0 L	12:53pm	8.4 H	6:54pm	0.9 L
17	Su	1:01am	9.7 H	7:37am	-0.7 L	1:49pm	8.6 H	7:39pm	1.2 L
18	M	1:42am	10.1 H	8:26am	-1.1 L	2:43pm	8.6 H	8:25pm	1.6 L
19	Tu	2:23am	10.3 H	9:15am	-1.3 L	3:36pm	8.4 H	9:11pm	2 L
20	W	3:05am	10.1 H	10:03am	-1.2 L	4:28pm	8.2 H	9:58pm	2.4 L
21	Th	3:49am	9.8 H	10:52am	-0.9 L	5:22pm	7.8 H	10:47pm	2.7 L
22	F	4:35am	9.2 H	11:42am	-0.4 L	6:17pm	7.5 H	11:41pm	3 L
23	Sa	5:26am	8.5 H	12:36pm	0.1 L	7:16pm	7.2 H		
24	Su	12:41am	3.1 L	6:24am	7.7 H	1:34pm	0.5 L	8:17pm	7.1 H
25	M	1:50am	3.1 L	7:34am	7.1 H	2:35pm	0.9 L	9:16pm	7.1 H
26	Tu	3:03am	2.8 L	8:50am	6.7 H	3:34pm	1.1 L	10:08pm	7.4 H
27	W	4:10am	2.3 L	10:01am	6.6 H	4:27pm	1.3 L	10:54pm	7.7 H

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.	
28	Th	5:08am	1.6 L	11:04am	6.8 H	5:13pm	1.5 L	11:33pm	8.1 H
29	F	5:57am	1 L	11:58am	7 H	5:53pm	1.7 L		
30	Sa	12:08am	8.4 H	6:41am	0.5 L	12:47pm	7.2 H	6:31pm	2 L
May									
1	Su	12:40am	8.6 H	7:21am	0.1 L	1:33pm	7.4 H	7:08pm	2.3 L
2	M	1:09am	8.8 H	7:59am	-0.1 L	2:16pm	7.5 H	7:44pm	2.6 L
3	Tu	1:38am	8.9 H	8:35am	-0.3 L	2:58pm	7.5 H	8:19pm	2.8 L
4	W	2:06am	9 H	9:10am	-0.4 L	3:39pm	7.5 H	8:56pm	3 L
5	Th	2:36am	9.1 H	9:45am	-0.5 L	4:20pm	7.4 H	9:33pm	3.1 L
6	F	3:10am	9 H	10:22am	-0.5 L	5:02pm	7.2 H	10:13pm	3.1 L
7	Sa	3:49am	8.9 H	11:02am	-0.5 L	5:47pm	7 H	10:59pm	3.1 L
8	Su	4:34am	8.6 H	11:46am	-0.3 L	6:35pm	6.9 H	11:53pm	3 L
9	M	5:27am	8.1 H	12:37pm	-0.1 L	7:28pm	7 H		
10	Tu	12:58am	2.9 L	6:33am	7.5 H	1:35pm	0.2 L	8:24pm	7.2 H
11	W	2:13am	2.5 L	7:54am	7 H	2:36pm	0.5 L	9:18pm	7.6 H
12	Th	3:27am	1.8 L	9:18am	6.9 H	3:37pm	0.8 L	10:08pm	8.2 H
13	F	4:35am	0.9 L	10:35am	7 H	4:35pm	1.1 L	10:56pm	8.9 H
14	Sa	5:36am	0 L	11:43am	7.2 H	5:29pm	1.4 L	11:41pm	9.4 H
15	Su	6:31am	-0.8 L	12:44pm	7.5 H	6:21pm	1.7 L		
16	M	12:26am	9.8 H	7:23am	-1.3 L	1:42pm	7.8 H	7:12pm	2 L
17	Tu	1:11am	10 H	8:13am	-1.6 L	2:36pm	7.9 H	8:02pm	2.3 L
18	W	1:55am	10 H	9:01am	-1.6 L	3:28pm	7.9 H	8:52pm	2.5 L
19	Th	2:41am	9.7 H	9:49am	-1.5 L	4:19pm	7.9 H	9:42pm	2.7 L
20	F	3:27am	9.3 H	10:34am	-1.1 L	5:08pm	7.7 H	10:32pm	2.7 L
21	Sa	4:14am	8.7 H	11:19am	-0.7 L	5:57pm	7.5 H	11:25pm	2.8 L
22	Su	5:03am	8 H	12:04pm	-0.3 L	6:46pm	7.4 H		
23	M	12:21am	2.8 L	5:57am	7.3 H	12:50pm	0.3 L	7:35pm	7.3 H
24	Tu	1:22am	2.6 L	7:00am	6.6 H	1:39pm	0.8 L	8:25pm	7.3 H
25	W	2:28am	2.3 L	8:11am	6.1 H	2:30pm	1.2 L	9:13pm	7.4 H
26	Th	3:34am	1.8 L	9:24am	5.9 H	3:22pm	1.6 L	9:58pm	7.7 H
27	F	4:33am	1.2 L	10:32am	5.9 H	4:12pm	2 L	10:39pm	8 H
28	Sa	5:26am	0.6 L	11:32am	6.2 H	5:00pm	2.3 L	11:17pm	8.2 H
29	Su	6:12am	0.1 L	12:26pm	6.5 H	5:46pm	2.6 L	11:52pm	8.5 H
30	M	6:55am	-0.3 L	1:15pm	6.8 H	6:30pm	2.8 L		
31	Tu	12:27am	8.7 H	7:35am	-0.6 L	2:01pm	7 H	7:13pm	3 L
June									
1	W	1:01am	8.8 H	8:14am	-0.8 L	2:45pm	7.2 H	7:55pm	3.1 L
2	Th	1:37am	9 H	8:53am	-1 L	3:27pm	7.3 H	8:37pm	3.1 L
3	F	2:15am	9 H	9:30am	-1.1 L	4:08pm	7.3 H	9:20pm	3 L
4	Sa	2:55am	9 H	10:08am	-1.1 L	4:47pm	7.3 H	10:04pm	2.8 L
5	Su	3:39am	8.8 H	10:47am	-1.1 L	5:27pm	7.4 H	10:53pm	2.6 L
6	M	4:27am	8.4 H	11:28am	-0.9 L	6:09pm	7.4 H	11:47pm	2.3 L
7	Tu	5:22am	7.8 H	12:12pm	-0.5 L	6:54pm	7.6 H		
8	W	12:48am	2 L	6:26am	7.2 H	1:02pm	0 L	7:43pm	7.8 H
9	Th	1:57am	1.5 L	7:43am	6.5 H	1:57pm	0.6 L	8:34pm	8.2 H
10	F	3:09am	0.9 L	9:05am	6.2 H	2:56pm	1.1 L	9:27pm	8.6 H
11	Sa	4:18am	0.2 L	10:24am	6.2 H	3:58pm	1.6 L	10:19pm	9 H
12	Su	5:21am	-0.5 L	11:35am	6.5 H	4:59pm	2 L	11:10pm	9.3 H
13	M	6:19am	-1.1 L	12:38pm	6.8 H	5:57pm	2.3 L		
14	Tu	12:00am	9.5 H	7:12am	-1.5 L	1:35pm	7.2 H	6:53pm	2.5 L
15	W	12:49am	9.6 H	8:02am	-1.7 L	2:27pm	7.4 H	7:46pm	2.5 L
16	Th	1:37am	9.5 H	8:48am	-1.7 L	3:16pm	7.6 H	8:37pm	2.5 L
17	F	2:24am	9.2 H	9:32am	-1.5 L	4:02pm	7.7 H	9:27pm	2.5 L
18	Sa	3:10am	8.8 H	10:13am	-1.2 L	4:45pm	7.7 H	10:15pm	2.4 L
19	Su	3:55am	8.3 H	10:51am	-0.8 L	5:26pm	7.6 H	11:03pm	2.3 L
20	M	4:41am	7.7 H	11:27am	-0.4 L	6:06pm	7.5 H	11:53pm	2.2 L
21	Tu	5:30am	7 H	12:04pm	0.2 L	6:45pm	7.4 H		
22	W	12:46am	2.1 L	6:25am	6.4 H	12:42pm	0.7 L	7:26pm	7.4 H
23	Th	1:44am	1.8 L	7:29am	5.8 H	1:25pm	1.3 L	8:09pm	7.4 H
24	F	2:47am	1.5 L	8:42am	5.4 H	2:14pm	1.9 L	8:53pm	7.5 H
25	Sa	3:50am	1.1 L	9:56am	5.4 H	3:10pm	2.4 L	9:39pm	7.7 H
26	Su	4:49am	0.5 L	11:03am	5.6 H	4:08pm	2.8 L	10:24pm	8 H
27	M	5:41am	0 L	12:03pm	6 H	5:04pm	3 L	11:08pm	8.2 H
28	Tu	6:28am	-0.4 L	12:55pm	6.4 H	5:57pm	3.1 L	11:52pm	8.5 H
29	W	7:12am	-0.8 L	1:42pm	6.7 H	6:47pm	3 L		

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
30 Th	12:34am	8.7 H	7:53am	-1.1 L	2:25pm	7 H	7:34pm	2.9 L
July								
1 F	1:18am	8.9 H	8:33am	-1.4 L	3:06pm	7.2 H	8:21pm	2.7 L
2 Sa	2:02am	9 H	9:12am	-1.5 L	3:44pm	7.4 H	9:06pm	2.4 L
3 Su	2:47am	9 H	9:49am	-1.5 L	4:21pm	7.7 H	9:53pm	2 L
4 M	3:34am	8.7 H	10:27am	-1.4 L	4:58pm	7.9 H	10:42pm	1.6 L
5 Tu	4:24am	8.3 H	11:05am	-1 L	5:36pm	8.1 H	11:35pm	1.3 L
6 W	5:18am	7.6 H	11:46am	-0.5 L	6:17pm	8.3 H		
7 Th	12:33am	1 L	6:21am	6.9 H	12:31pm	0.2 L	7:03pm	8.4 H
8 F	1:38am	0.7 L	7:35am	6.2 H	1:23pm	1 L	7:54pm	8.5 H
9 Sa	2:50am	0.3 L	8:56am	5.8 H	2:24pm	1.7 L	8:51pm	8.6 H
10 Su	4:02am	-0.2 L	10:16am	5.8 H	3:32pm	2.2 L	9:50pm	8.8 H
11 M	5:09am	-0.7 L	11:28am	6.1 H	4:40pm	2.5 L	10:48pm	8.9 H
12 Tu	6:08am	-1.1 L	12:30pm	6.5 H	5:43pm	2.5 L	11:44pm	9 H
13 W	7:01am	-1.4 L	1:24pm	7 H	6:41pm	2.4 L		
14 Th	12:36am	9 H	7:48am	-1.5 L	2:12pm	7.3 H	7:35pm	2.3 L
15 F	1:25am	8.9 H	8:31am	-1.5 L	2:56pm	7.5 H	8:24pm	2.1 L
16 Sa	2:12am	8.7 H	9:10am	-1.3 L	3:36pm	7.7 H	9:10pm	2 L
17 Su	2:56am	8.4 H	9:45am	-1 L	4:12pm	7.7 H	9:54pm	1.8 L
18 M	3:38am	8 H	10:18am	-0.6 L	4:46pm	7.7 H	10:37pm	1.6 L
19 Tu	4:21am	7.5 H	10:48am	-0.1 L	5:18pm	7.7 H	11:19pm	1.5 L
20 W	5:04am	6.9 H	11:18am	0.4 L	5:49pm	7.6 H		
21 Th	12:04am	1.4 L	5:53am	6.3 H	11:50am	1 L	6:21pm	7.6 H
22 F	12:55am	1.4 L	6:50am	5.7 H	12:28pm	1.6 L	6:57pm	7.5 H
23 Sa	1:53am	1.3 L	8:01am	5.3 H	1:14pm	2.2 L	7:42pm	7.4 H
24 Su	2:59am	1 L	9:19am	5.1 H	2:13pm	2.7 L	8:34pm	7.5 H
25 M	4:06am	0.7 L	10:33am	5.3 H	3:22pm	3.1 L	9:33pm	7.6 H
26 Tu	5:06am	0.2 L	11:36am	5.7 H	4:30pm	3.1 L	10:30pm	7.9 H
27 W	5:59am	-0.4 L	12:29pm	6.2 H	5:31pm	3 L	11:24pm	8.2 H
28 Th	6:45am	-0.8 L	1:14pm	6.6 H	6:25pm	2.7 L		
29 F	12:15am	8.6 H	7:28am	-1.2 L	1:55pm	7 H	7:15pm	2.3 L
30 Sa	1:04am	8.8 H	8:08am	-1.4 L	2:33pm	7.5 H	8:03pm	1.8 L
31 Su	1:52am	9 H	8:46am	-1.5 L	3:10pm	7.8 H	8:51pm	1.3 L
August								
1 M	2:40am	8.9 H	9:24am	-1.4 L	3:45pm	8.2 H	9:38pm	0.9 L
2 Tu	3:29am	8.7 H	10:01am	-1.1 L	4:21pm	8.5 H	10:27pm	0.5 L
3 W	4:20am	8.2 H	10:39am	-0.6 L	4:58pm	8.8 H	11:18pm	0.2 L
4 Th	5:15am	7.5 H	11:20am	0.1 L	5:39pm	8.8 H		
5 F	12:14am	0.1 L	6:16am	6.7 H	12:05pm	0.8 L	6:25pm	8.7 H
6 Sa	1:18am	0.1 L	7:28am	6.1 H	12:58pm	1.6 L	7:18pm	8.5 H
7 Su	2:30am	0 L	8:49am	5.7 H	2:04pm	2.2 L	8:21pm	8.3 H
8 M	3:46am	-0.2 L	10:09am	5.8 H	3:18pm	2.6 L	9:30pm	8.2 H
9 Tu	4:56am	-0.5 L	11:19am	6.2 H	4:32pm	2.6 L	10:36pm	8.3 H
10 W	5:55am	-0.8 L	12:16pm	6.6 H	5:37pm	2.3 L	11:35pm	8.4 H
11 Th	6:45am	-1.1 L	1:05pm	7.1 H	6:33pm	2 L		
12 F	12:28am	8.5 H	7:28am	-1.1 L	1:47pm	7.4 H	7:23pm	1.7 L
13 Sa	1:16am	8.5 H	8:07am	-1 L	2:25pm	7.7 H	8:08pm	1.4 L
14 Su	2:00am	8.3 H	8:41am	-0.7 L	3:00pm	7.8 H	8:50pm	1.2 L
15 M	2:42am	8.1 H	9:12am	-0.3 L	3:31pm	7.9 H	9:30pm	1 L
16 Tu	3:22am	7.8 H	9:41am	0.1 L	3:59pm	8 H	10:07pm	0.9 L
17 W	4:02am	7.4 H	10:08am	0.5 L	4:25pm	8 H	10:44pm	0.9 L
18 Th	4:43am	7 H	10:36am	1 L	4:50pm	7.9 H	11:23pm	0.8 L
19 F	5:27am	6.4 H	11:07am	1.5 L	5:17pm	7.8 H		
20 Sa	12:06am	0.9 L	6:19am	5.9 H	11:42am	2.1 L	5:50pm	7.7 H
21 Su	12:58am	1 L	7:25am	5.4 H	12:28pm	2.6 L	6:34pm	7.5 H
22 M	2:03am	1 L	8:43am	5.2 H	1:29pm	3 L	7:32pm	7.3 H
23 Tu	3:17am	0.8 L	10:00am	5.4 H	2:47pm	3.3 L	8:45pm	7.3 H
24 W	4:26am	0.4 L	11:03am	5.8 H	4:04pm	3.1 L	9:58pm	7.5 H
25 Th	5:23am	-0.2 L	11:55am	6.3 H	5:09pm	2.7 L	11:02pm	7.9 H
26 F	6:12am	-0.6 L	12:38pm	6.9 H	6:06pm	2.1 L	11:59pm	8.4 H
27 Sa	6:55am	-0.9 L	1:17pm	7.4 H	6:57pm	1.4 L		
28 Su	12:52am	8.7 H	7:36am	-1 L	1:54pm	8 H	7:45pm	0.8 L
29 M	1:42am	8.9 H	8:15am	-1 L	2:30pm	8.5 H	8:33pm	0.2 L
30 Tu	2:32am	8.8 H	8:54am	-0.7 L	3:05pm	9 H	9:21pm	-0.3 L
31 W	3:23am	8.6 H	9:33am	-0.2 L	3:42pm	9.3 H	10:09pm	-0.6 L

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
September								
1	Th	4:15am	8.1 H	10:13am	0.3 L	4:21pm	9.4 H	11:00pm -0.7 L
2	F	5:10am	7.5 H	10:56am	1 L	5:03pm	9.2 H	11:55pm -0.5 L
3	Sa	6:11am	6.8 H	11:44am	1.7 L	5:50pm	8.8 H	
4	Su	12:57am	-0.2 L	7:21am	6.3 H	12:42pm	2.3 L	6:48pm 8.3 H
5	M	2:08am	0 L	8:39am	6 H	1:53pm	2.7 L	7:58pm 7.8 H
6	Tu	3:24am	0 L	9:55am	6.1 H	3:12pm	2.8 L	9:14pm 7.6 H
7	W	4:34am	-0.1 L	11:00am	6.5 H	4:27pm	2.5 L	10:26pm 7.6 H
8	Th	5:32am	-0.3 L	11:52am	7 H	5:30pm	2 L	11:26pm 7.8 H
9	F	6:19am	-0.4 L	12:36pm	7.5 H	6:22pm	1.4 L	
10	Sa	12:19am	7.9 H	6:59am	-0.4 L	1:14pm	7.8 H	7:08pm 1 L
11	Su	1:05am	8 H	7:34am	-0.2 L	1:47pm	8.1 H	7:50pm 0.7 L
12	M	1:48am	8 H	8:06am	0.2 L	2:18pm	8.2 H	8:28pm 0.5 L
13	Tu	2:28am	7.9 H	8:36am	0.6 L	2:45pm	8.3 H	9:05pm 0.3 L
14	W	3:08am	7.7 H	9:04am	1 L	3:10pm	8.3 H	9:39pm 0.3 L
15	Th	3:47am	7.4 H	9:32am	1.5 L	3:33pm	8.3 H	10:13pm 0.3 L
16	F	4:26am	7.1 H	10:01am	1.9 L	3:57pm	8.3 H	10:47pm 0.3 L
17	Sa	5:09am	6.6 H	10:33am	2.3 L	4:24pm	8.2 H	11:25pm 0.4 L
18	Su	5:57am	6.2 H	11:10am	2.7 L	4:59pm	8 H	
19	M	12:11am	0.6 L	6:58am	5.8 H	11:56am	3 L	5:44pm 7.6 H
20	Tu	1:12am	0.8 L	8:10am	5.6 H	1:01pm	3.3 L	6:45pm 7.3 H
21	W	2:26am	0.7 L	9:22am	5.7 H	2:23pm	3.3 L	8:06pm 7.1 H
22	Th	3:39am	0.5 L	10:24am	6.2 H	3:42pm	2.9 L	9:31pm 7.2 H
23	F	4:40am	0.2 L	11:13am	6.8 H	4:49pm	2.2 L	10:42pm 7.6 H
24	Sa	5:31am	-0.1 L	11:55am	7.4 H	5:47pm	1.4 L	11:43pm 8.1 H
25	Su	6:17am	-0.3 L	12:34pm	8.1 H	6:38pm	0.5 L	
26	M	12:39am	8.4 H	7:00am	-0.2 L	1:11pm	8.8 H	7:27pm -0.2 L
27	Tu	1:32am	8.6 H	7:42am	0 L	1:49pm	9.4 H	8:15pm -0.8 L
28	W	2:24am	8.6 H	8:23am	0.4 L	2:26pm	9.7 H	9:03pm -1.2 L
29	Th	3:17am	8.4 H	9:05am	0.9 L	3:06pm	9.9 H	9:52pm -1.3 L
30	F	4:10am	8.1 H	9:49am	1.4 L	3:47pm	9.8 H	10:42pm -1.2 L
October								
1	Sa	5:05am	7.6 H	10:36am	1.9 L	4:32pm	9.4 H	11:36pm -0.8 L
2	Su	6:05am	7.1 H	11:29am	2.4 L	5:22pm	8.8 H	
3	M	12:35am	-0.3 L	7:10am	6.7 H	12:30pm	2.8 L	6:22pm 8.1 H
4	Tu	1:42am	0.1 L	8:21am	6.6 H	1:44pm	3 L	7:36pm 7.4 H
5	W	2:53am	0.3 L	9:29am	6.7 H	3:03pm	2.8 L	8:56pm 7.1 H
6	Th	3:59am	0.4 L	10:28am	7.1 H	4:15pm	2.3 L	10:09pm 7.1 H
7	F	4:55am	0.4 L	11:17am	7.5 H	5:16pm	1.6 L	11:11pm 7.2 H
8	Sa	5:41am	0.4 L	11:58am	7.9 H	6:06pm	1 L	
9	Su	12:04am	7.4 H	6:20am	0.6 L	12:34pm	8.3 H	6:50pm 0.5 L
10	M	12:50am	7.6 H	6:55am	0.9 L	1:05pm	8.5 H	7:29pm 0.1 L
11	Tu	1:34am	7.7 H	7:28am	1.3 L	1:34pm	8.7 H	8:06pm -0.1 L
12	W	2:15am	7.7 H	8:00am	1.7 L	2:01pm	8.7 H	8:41pm -0.2 L
13	Th	2:56am	7.6 H	8:31am	2.1 L	2:25pm	8.8 H	9:15pm -0.2 L
14	F	3:35am	7.5 H	9:02am	2.5 L	2:50pm	8.8 H	9:47pm -0.1 L
15	Sa	4:15am	7.2 H	9:34am	2.7 L	3:16pm	8.7 H	10:21pm -0.1 L
16	Su	4:57am	6.9 H	10:09am	3 L	3:48pm	8.5 H	10:58pm 0.1 L
17	M	5:43am	6.6 H	10:49am	3.2 L	4:26pm	8.3 H	11:41pm 0.2 L
18	Tu	6:36am	6.4 H	11:39am	3.3 L	5:13pm	7.9 H	
19	W	12:35am	0.4 L	7:37am	6.2 H	12:44pm	3.4 L	6:15pm 7.4 H
20	Th	1:39am	0.6 L	8:40am	6.4 H	2:03pm	3.2 L	7:37pm 7 H
21	F	2:48am	0.6 L	9:37am	6.8 H	3:21pm	2.6 L	9:06pm 7 H
22	Sa	3:51am	0.6 L	10:26am	7.5 H	4:29pm	1.8 L	10:23pm 7.2 H
23	Su	4:46am	0.6 L	11:10am	8.2 H	5:27pm	0.8 L	11:29pm 7.6 H
24	M	5:36am	0.7 L	11:51am	9 H	6:21pm	-0.2 L	
25	Tu	12:28am	8 H	6:23am	0.9 L	12:31pm	9.6 H	7:11pm -0.9 L
26	W	1:23am	8.2 H	7:09am	1.2 L	1:12pm	10.1 H	8:00pm -1.4 L
27	Th	2:17am	8.3 H	7:55am	1.6 L	1:53pm	10.3 H	8:48pm -1.6 L
28	F	3:10am	8.3 H	8:42am	2 L	2:36pm	10.3 H	9:37pm -1.6 L
29	Sa	4:03am	8.1 H	9:30am	2.3 L	3:21pm	10 H	10:26pm -1.3 L
30	Su	4:57am	7.9 H	10:21am	2.6 L	4:08pm	9.5 H	11:17pm -0.9 L
31	M	5:53am	7.6 H	11:16am	2.9 L	5:00pm	8.7 H	
November								
1	Tu	12:11am	-0.3 L	6:51am	7.3 H	12:18pm	3 L	5:59pm 7.9 H

Day	Time	Ht.	Time	Ht.	Time	Ht.	Time	Ht.
2 W	1:08am	0.2 L	7:52am	7.2 H	1:28pm	3 L	7:09pm	7.2 H
3 Th	2:08am	0.6 L	8:51am	7.3 H	2:42pm	2.7 L	8:27pm	6.7 H
4 F	3:09am	1 L	9:45am	7.6 H	3:52pm	2.1 L	9:42pm	6.5 H
5 Sa	4:04am	1.2 L	10:33am	7.9 H	4:52pm	1.4 L	10:47pm	6.7 H
6 Su**	3:52am	1.5 L	10:13am	8.3 H	4:43pm	0.8 L	10:44pm	6.9 H
7 M	4:34am	1.8 L	10:49am	8.6 H	5:27pm	0.3 L	11:33pm	7.2 H
8 Tu	5:14am	2.1 L	11:22am	8.8 H	6:07pm	-0.1 L		
9 W	12:19am	7.4 H	5:51am	2.4 L	11:52am	9 H	6:44pm	-0.3 L
10 Th	1:03am	7.5 H	6:27am	2.8 L	12:21pm	9.1 H	7:20pm	-0.4 L
11 F	1:45am	7.6 H	7:03am	3 L	12:49pm	9.1 H	7:55pm	-0.4 L
12 Sa	2:25am	7.6 H	7:39am	3.2 L	1:19pm	9.1 H	8:29pm	-0.4 L
13 Su	3:05am	7.5 H	8:16am	3.4 L	1:51pm	9 H	9:04pm	-0.4 L
14 M	3:46am	7.3 H	8:55am	3.4 L	2:27pm	8.9 H	9:40pm	-0.3 L
15 Tu	4:27am	7.2 H	9:38am	3.4 L	3:08pm	8.6 H	10:20pm	-0.1 L
16 W	5:12am	7.1 H	10:29am	3.3 L	3:58pm	8.1 H	11:06pm	0.1 L
17 Th	6:01am	7.1 H	11:30am	3.2 L	4:59pm	7.5 H	11:59pm	0.4 L
18 F	6:53am	7.3 H	12:43pm	2.8 L	6:16pm	7 H		
19 Sa	12:59am	0.8 L	7:46am	7.7 H	1:58pm	2.2 L	7:44pm	6.7 H
20 Su	2:01am	1.1 L	8:37am	8.3 H	3:07pm	1.3 L	9:05pm	6.8 H
21 M	3:01am	1.5 L	9:25am	9 H	4:09pm	0.4 L	10:16pm	7.1 H
22 Tu	3:57am	1.8 L	10:12am	9.6 H	5:05pm	-0.5 L	11:19pm	7.5 H
23 W	4:51am	2.1 L	10:57am	10.1 H	5:57pm	-1.1 L		
24 Th	12:17am	7.9 H	5:43am	2.3 L	11:43am	10.4 H	6:48pm	-1.5 L
25 F	1:11am	8.1 H	6:34am	2.6 L	12:29pm	10.5 H	7:36pm	-1.6 L
26 Sa	2:03am	8.2 H	7:25am	2.7 L	1:15pm	10.4 H	8:24pm	-1.5 L
27 Su	2:54am	8.3 H	8:16am	2.8 L	2:03pm	10 H	9:11pm	-1.2 L
28 M	3:44am	8.2 H	9:08am	2.9 L	2:51pm	9.4 H	9:56pm	-0.8 L
29 Tu	4:32am	8.1 H	10:02am	2.9 L	3:41pm	8.7 H	10:42pm	-0.2 L
30 W	5:21am	7.9 H	10:59am	2.9 L	4:36pm	7.9 H	11:27pm	0.3 L
December								
1 Th	6:11am	7.8 H	12:01pm	2.9 L	5:38pm	7.1 H		
2 F	12:15am	1 L	7:01am	7.8 H	1:08pm	2.6 L	6:49pm	6.5 H
3 Sa	1:07am	1.5 L	7:51am	7.9 H	2:16pm	2.2 L	8:05pm	6.2 H
4 Su	2:00am	2.1 L	8:38am	8.1 H	3:19pm	1.6 L	9:16pm	6.2 H
5 M	2:53am	2.5 L	9:21am	8.4 H	4:13pm	1 L	10:19pm	6.5 H
6 Tu	3:44am	2.8 L	10:01am	8.7 H	5:01pm	0.4 L	11:14pm	6.8 H
7 W	4:32am	3.1 L	10:39am	8.9 H	5:44pm	0 L		
8 Th	12:04am	7.2 H	5:16am	3.3 L	11:14am	9.1 H	6:24pm	-0.2 L
9 F	12:49am	7.5 H	5:59am	3.5 L	11:49am	9.2 H	7:02pm	-0.4 L
10 Sa	1:31am	7.6 H	6:41am	3.6 L	12:24pm	9.3 H	7:38pm	-0.5 L
11 Su	2:12am	7.8 H	7:22am	3.6 L	1:00pm	9.4 H	8:14pm	-0.6 L
12 M	2:50am	7.8 H	8:03am	3.5 L	1:37pm	9.3 H	8:49pm	-0.6 L
13 Tu	3:27am	7.8 H	8:45am	3.3 L	2:18pm	9.2 H	9:24pm	-0.5 L
14 W	4:04am	7.9 H	9:29am	3.1 L	3:02pm	8.9 H	10:01pm	-0.4 L
15 Th	4:42am	8 H	10:19am	2.9 L	3:51pm	8.3 H	10:40pm	0 L
16 F	5:22am	8.1 H	11:15am	2.6 L	4:50pm	7.7 H	11:25pm	0.5 L
17 Sa	6:07am	8.3 H	12:21pm	2.2 L	6:02pm	7 H		
18 Su	12:16am	1.1 L	6:57am	8.6 H	1:33pm	1.7 L	7:26pm	6.5 H
19 M	1:15am	1.8 L	7:50am	9 H	2:45pm	1 L	8:51pm	6.5 H
20 Tu	2:20am	2.3 L	8:45am	9.4 H	3:52pm	0.2 L	10:06pm	6.8 H
21 W	3:25am	2.7 L	9:39am	9.8 H	4:52pm	-0.5 L	11:12pm	7.2 H
22 Th	4:27am	2.9 L	10:32am	10.2 H	5:47pm	-1 L		
23 F	12:10am	7.7 H	5:25am	3 L	11:23am	10.3 H	6:38pm	-1.3 L
24 Sa	1:03am	8 H	6:21am	3 L	12:14pm	10.4 H	7:25pm	-1.3 L
25 Su	1:52am	8.3 H	7:14am	2.9 L	1:03pm	10.2 H	8:10pm	-1.2 L
26 M	2:38am	8.4 H	8:05am	2.8 L	1:51pm	9.8 H	8:52pm	-0.9 L
27 Tu	3:22am	8.5 H	8:54am	2.7 L	2:37pm	9.3 H	9:31pm	-0.5 L
28 W	4:03am	8.5 H	9:43am	2.7 L	3:24pm	8.7 H	10:08pm	0 L
29 Th	4:43am	8.4 H	10:33am	2.6 L	4:13pm	8 H	10:44pm	0.6 L
30 F	5:22am	8.3 H	11:25am	2.5 L	5:06pm	7.2 H	11:21pm	1.3 L
31 Sa	6:02am	8.2 H	12:23pm	2.4 L	6:09pm	6.5 H		

Washington State Parks Moorage Permits

Moorage Permit Fees

- ◆ The following fees are charged year-round for mooring at docks, floats, and buoys from 1 p.m. to 8 a.m.
 - Dock and float moorage: daily fee of 50¢ per foot with a \$10 minimum
 - Mooring buoy: \$10 per night
 - Annual moorage permit fee: \$3.50 per foot with a minimum of \$50; annual permit is valid from January 1 through December 31
- ◆ Check-out time is 8 a.m.
- ◆ Temporary moorage is allowed for up to 30 minutes.
- ◆ For additional information on moorage facility locations or moorage permits, visit:

www.parks.wa.gov/boating/moorage



photo courtesy of Washington State Parks

How To Purchase a Mooring Permit

- ◆ Daily moorage permits are available for purchase at parks with docks, floats, or buoys. Annual moorage permits may be purchased online at www.parks.wa.gov/boating/moorage or at the following locations:
 - Northwest Region Headquarters
220 North Walnut St., Burlington, WA 98233
 - Washington State Parks Headquarters
P.O. Box 42650, 1111 Israel Road SW
Tumwater, WA 98504-2650
 - Marine parks when staff is available
- ◆ Annual moorage permits also may be purchased by sending a completed application to Washington State Parks Headquarters. Applications are available online.
- ◆ For more information, call the State Parks Information Center at **360-902-8844**.

More About Moorage Permits

- ◆ A vessel rafted to another vessel will be charged a moorage fee based on its own length.
- ◆ The annual moorage permit decal must be affixed to the vessel so that it is visible from outside the vessel. For vessels with windshields, placement should be in the lower left corner of the windshield. For vessels without windshields, placement should be on the left outside transom. For sailboats, placement should be on the forward part of the left cabin trunk.
- ◆ The annual moorage permit is for overnight mooring at a state park facility (dock or buoy) and is separate from the launch fee.

Rules and Regulations at Mooring Facilities

For the protection of all boaters and to ensure maximum use of the facilities, those using mooring facilities must follow these rules.

- ◆ Overnight boaters must self-register and pay the fees where posted.
- ◆ Facility use is first come, first served.
- ◆ Leaving a dinghy at a buoy or dock does not reserve a moorage space.
- ◆ Annual permits must be displayed as directed.
- ◆ Moorage at a facility is limited to three (3) consecutive nights.
- ◆ Rafting is permitted within posted limits. A vessel rafted to another vessel will be charged a moorage fee based on its own length.
- ◆ Open flames, live coals, and combustibles must be placed on a fireproof base, away from fuel tanks and vents.
- ◆ Commercial vessels are restricted to loading and unloading passengers transported for recreational purposes.
- ◆ Pets must be kept on leashes and under physical control at all times. Dispose of animal waste properly.

Remember when you caught your first fish?

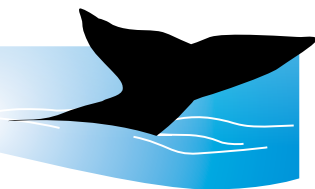
Our children will not experience that same thrill unless we keep this country's waterways pollution free. Using pump-out stations and properly disposing of our trash are things we can all do to protect our waters.

Help us keep Washington's waters clean!



ORCA WHALES

www.bewhalewise.org



Act Responsibly

Seeing killer whales and other marine wildlife in their natural environment can be a thrilling experience.

In our excitement, we sometimes forget that our presence has an effect on wildlife and their habitat. Just like us, marine animals need space to find food, choose mates, raise young, socialize, and rest.

When we get too close, approach too fast, or make too much noise, we may be disrupting these activities and causing the animals unnecessary stress. In some cases, we may be threatening their lives.

This information is intended to assist you in interacting properly with marine life. Set an example for others—assist law enforcement and help protect our spectacular marine resources by reporting violators.

Why do we need guidelines?

The diversity and complexity of marine life in the coastal waters off British Columbia and Washington are truly extraordinary.

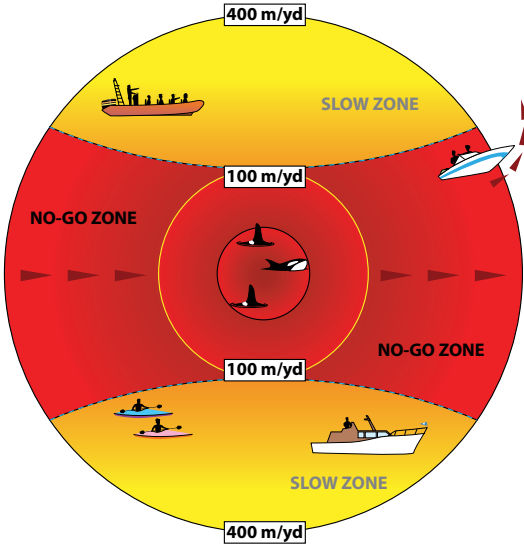
It is a fragile world. Pollution, global climate change, and other impacts are taking their toll at all levels of the coastal food web. Many species of marine wildlife, such as the endangered southern resident killer whales, are showing signs of vulnerability.

Meanwhile, vessel traffic in our waters is steadily increasing, placing added pressures on marine animals and their habitats.

We need to minimize our impact. These guidelines are designed to help you enjoy your wildlife encounter and reduce the risk of disturbing marine wildlife.

Killer Whale Viewing Guidelines

1. **BE CAUTIOUS and COURTEOUS.** Approach areas of known or suspected marine wildlife activity with extreme caution. Look in all directions before planning your approach or departure.
2. **SLOW DOWN.** Reduce speed to less than 7 knots when within 400 meters/yards of the nearest whale. Avoid abrupt course changes.
3. **KEEP CLEAR** of the whales' path. If whales are approaching you, cautiously move out of the way.



4. **DO NOT APPROACH** whales from the front or from behind. Always approach and leave whales from the side, moving in a direction parallel to the direction of the whales.
5. **DO NOT APPROACH** or position your vessel closer than 100 meters/yards to any whale.
6. If your vessel is not in compliance with the 100 meters/yards approach guideline (#5), place engine in neutral and **ALLOW WHALES TO PASS.**
7. **STAY ON THE OFFSHORE SIDE** of the whales when they are traveling close to shore.
8. **LIMIT YOUR VIEWING TIME** to a recommended maximum of 30 minutes. This will minimize the cumulative impact of many vessels and give consideration to other viewers.
9. **DO NOT** swim with, touch, or feed marine wildlife.

The Laws

Regulations of Canada, the U.S., and Washington State prohibit the harassment and disturbance of killer whales and other marine mammals. Many species are listed as threatened or endangered and therefore are subject to additional protections under the Endangered Species Act (U.S.) and the Species at Risk Act (Canada).

In Washington State, it is unlawful to:

- Approach within 100 yards of a killer whale while on board a vessel.
- Intercept a killer whale by allowing a vessel or other craft in the path and within 100 yards of a killer whale.
- Fail to disengage a vessel's transmission immediately when within 100 yards of a killer whale.
- Harass any marine mammal.

For more information, please visit:

- Washington Fish and Wildlife www.wdfw.wa.gov/viewing/wildview.htm
- NOAA Fisheries Office for Law Enforcement www.nmfs.noaa.gov/ole

What is a disturbance?

Disturbance is when we interfere with an animal's ability to hunt, feed, communicate, socialize, rest, breed, or care for its young. These are critical processes, necessary for healthy marine wildlife populations.

Report Violators

IN THE US: Call NOAA Fisheries Office for Law Enforcement, at **1-800-853-1964**

IN CANADA: Call Fisheries and Oceans Canada at **1-800-465-4336**

Online: <http://www.bewhalewise.org>

Enforcement

Local law enforcement, Washington Department of Fish and Wildlife, and NOAA Fisheries Office for Law Enforcement are dedicated to the enforcement of state and federal laws that protect and conserve our nation's living marine resources and their natural habitat.

Local law enforcement, Washington Fish and Wildlife officers, and NOAA Fisheries special agents have specified authority to enforce numerous treaties related to the conservation and protection of marine resources.



Information provided by NOAA Fisheries Office for Law Enforcement

Vessel Traffic Systems and Shipping Lanes

The U.S. Coast Guard operates the Puget Sound Vessel Traffic Service (VTS) to provide navigational assistance and a Traffic Separation Scheme (buoys and charted traffic lanes) to the maritime community of Puget Sound. VTS Puget Sound manages the commercial shipping lanes from Cape Flattery through the Strait of Juan de Fuca to Tacoma. The Columbia River has shipping lanes but no vessel traffic system.

- ◆ Avoid commercial shipping traffic lanes by as wide of a margin as possible. Commercial traffic has the right-of-way.
- ◆ At night, be extra vigilant and note navigation lights, especially sidelights. If both red and green lights are visible, a vessel is approaching you head-on. Be aware that there may be an unlit space of several hundred yards between bow and stern lights, such as when a tugboat is pushing a barge.
- ◆ Stay a long distance behind deep-draft traffic.
- ◆ Cross traffic lanes at 90 degrees to the prevailing traffic or as practical.
- ◆ Never cross in front of a tugboat or between a tugboat and its tow.
- ◆ Leave ample room when crossing or traveling behind a ship or tugboat.
- ◆ Never anchor in a shipping lane, and never tie up to a buoy or other navigational aid.
- ◆ Do not enter into the direct path of commercial vessels that are approaching bridges and locks. It is dangerous for ships to alter their courses in these situations.
- ◆ When necessary to communicate your position to a ship, contact commercial vessels by VHF-FM radio using the locally monitored frequency. Do not use a cell phone.
- ◆ For additional safety information, review “Sharing the Water With Commercial Ships” on page 18.

Recreational Boating Manual for Puget Sound

VTS Puget Sound has a Recreational Boating Manual to help boaters understand the Traffic Separation Scheme and related safety issues from sharing the waters of Puget Sound with commercial traffic. For more information, visit: www.uscg.mil/d13/psvts/.

Boaters' Reference

Washington State Parks and Recreation Commission

Boating Programs	www.parks.wa.gov/boating	360-902-8555
Clean Vessel Program		360-902-8659
Information Center		360-902-8844
Moorage Permits		360-902-8844
Washington State's Official Boating Portal	boat.wa.gov	

Vessel Registration and Titling

Washington Dept. of Licensing		360-902-3770
	www.dol.wa.gov/vehicleregistration/registerboat.html	

Vessel Trailing/Hauling Regulations

Washington Dept. of Transp.		360-704-6340
	www.wsdot.wa.gov/commercialvehicle	

Other Boating Contacts

Puget Soundkeeper Alliance	www.pugetsoundkeeper.org	206-297-7002
U.S. Coast Guard (USCG)		www.uscgboating.org
13th Coast Guard District	www.uscg.mil/d13/	206-220-7257
U.S. Coast Guard Auxiliary		www.cgaux.org
U.S. Power Squadrons	www.usps.org	1-888-367-8777
National Safe Boating Council		www.safeboatingcouncil.org
Recreational Boating Association of Washington		www.rbaw.org
Washington Boating Safety Officers Association		www.boatwashington.org
Oregon State Marine Board		www.boatoregon.com
Northwest Marine Trade Association		www.nmta.net

Other Environmental Organizations

Help Protect Marine Mammals:		
Washington		1-800-562-8832
British Columbia		250-756-7253
Ocean Conservancy	202-429-5609 or toll-free	1-800-519-1541
USCG National Response Center		1-800-424-8802
Department of Ecology:		
Hazardous Waste Hotline		1-800-633-7585
Recycling Hotline		1-800-RECYCLE (732-9253)
Emergencies, Oiled Birds, Etc.		360-407-6300
National Marine Fisheries Service:		
Marine Mammal Strandings		1-800-853-1964
Whale Hotline		1-800-562-8832
The Recreation and Conservation Office		www.rco.wa.gov
National Oceanic and Atmospheric Administration		www.noaa.gov
National Weather Service		www.nws.noaa.gov
Washington State Department of Emergency Management		1-800-258-5990
Washington Department of Fish and Wildlife		www.wdfw.wa.gov
Washington State Dept. of Natural Resources		www.dnr.wa.gov

Shellfish Advisory

Paralytic Shellfish Poisoning (Red Tide) Hotline		1-800-562-5632
Department of Health		360-236-3330