



FLEMING OWNERS' SITE



Fleming Owner's Site
Tide Predictions Feature

Table of Contents

The Tides Function	1
Interpreting The Tides Graph	1
List of Tide Stations	1
A Brief Primer on Reading A Tidal Graph.	2
Tidal Range	2
Slack Water or Slack Tide	2
Spring Tides and Neap Tides.	2
Ebb and Flood.	2
Printing A Tide Table.	4
Setting Your Local Time Zone.	4

Copyright © Fleming Owner's Site, September, 2010

Cover photo: Fleming 55 *Alfie* (55-100) sunset at River Dunes, NC, USA.

Photo by: Ed Potter

The Tide Predictions Feature

The Tides Function

Tide predictions are important information for boaters—especially in the U.S. Northwest cruising area, and other areas of the world where very large tide swings create strong currents and have significant impact on where and how we cruise and anchor.

The Tides function of the Fleming Owner's site provides predictions for over 3,000 tide stations, enabling a convenient source of tide predictions that can be customized to each user's location¹

This facility is available to everyone—owners and guests, and even to un-registered visitors. However, registered users who log in will be able to establish a default station so that tides for their specified location are displayed automatically upon entry:

To access the Tides function, click the “Tides” tab in the main site navigation bar. The screen may take a few seconds to load as it calculates today's tides for your location and loads the tide stations in the drop-down list.

Interpreting The Tides Graph - The example tide graph (shown in Figure 1) graphically illustrates the tidal range for September 25-26th at Juneau, Alaska - indicated by the title in the dark blue band at the top.

The daylight hours are indicated by the lighter blue color on the chart and the hours of darkness by the darker blue. Flood tides (rising tides) are indicated by blue line segments on the graph and ebb tides (falling tides) are indicated by the green segments. Moonrise and Moonset times are also indicated along the lower axis of the graph.

² The tide functionality is based on open-source software called XTide, written by David Flater and available at: <http://www.flaterco.com>. The full documentation for XTide can be found on the product's website, at <http://www.flaterco.com/xtide>.

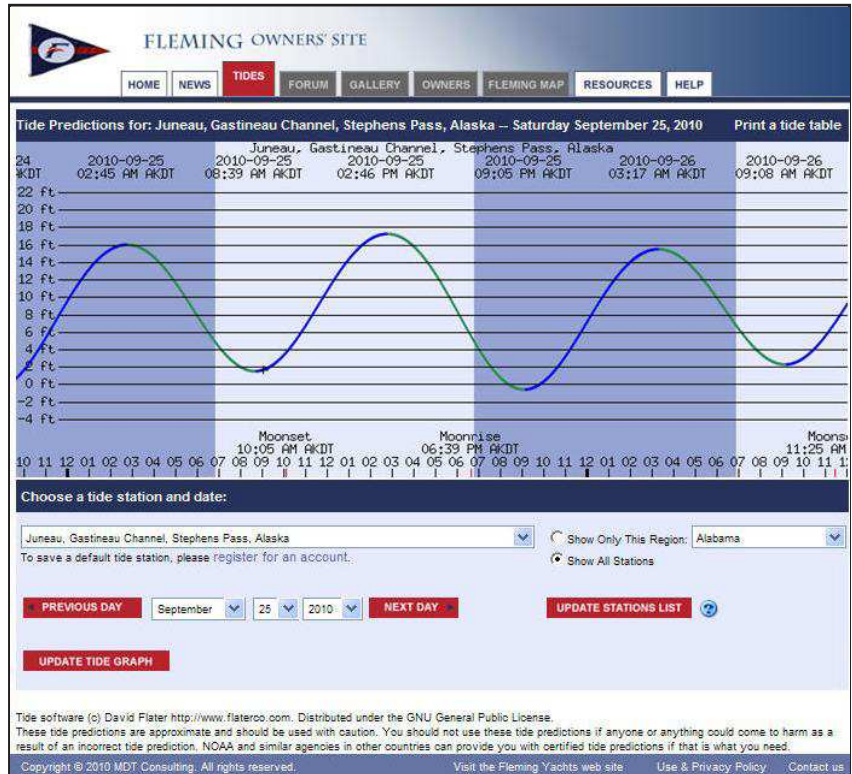


Figure 1 The Tides Function Graph

On this particular day, daylight hours will be from just before 7AM (Alaska Time Zone, daylight savings time in each) until just before 7PM. Immediately below the dates shown above the graph, are listed the exact (predicted) times for the two high and two low tides throughout this 48-hour period.

List of Tide Stations - The list of tide stations is available in a drop-down menu just below the tide graph. Since there is a large list of tide stations, you can select a specific region, such as a state or region, and “filter” the list of tide stations to only stations that are within that state or region.² After making your selection, click on the box that says “Show Only This Region”, then click on the “Update Stations List” link.

Note that the current date for the tide graph is affected by your specific time zone for your account, which can be set in your user profile. See the description of how to set your time zone in the section titled “Setting Your Local Time Zone”.

A Brief Primer In Reading A Tide Graph

Reading a Tide Graph is fairly simple, but it does have some details that warrant additional study if your background in tidal situations is rusty or non-existent.

Tidal Range - this is the difference in height between a high tide and its following low tide.

In the tide graph for Juneau, the morning tide range is approximately 14' (high tide at 2:45AM is 16' and the next low tide at 8:39AM is just under 2', so a difference of 14'). The afternoon/evening tide range for that same day is around 17'.)

According to an article in Wikipedia (http://en.wikipedia.org/wiki/Tidal_range), "the world's largest tidal differential occurs in the Bay of Fundy in Eastern Canada, where the sea level changes by up to 16 meters (53 feet) during a tidal cycle (source NOAA)."

Slack Water or Slack Tide - is the time period, generally ranging from 5 minutes to ½ hour - during which no appreciable tidal current flows. Slack water normally happens near high tide and low tide, and occurs when the direction of the

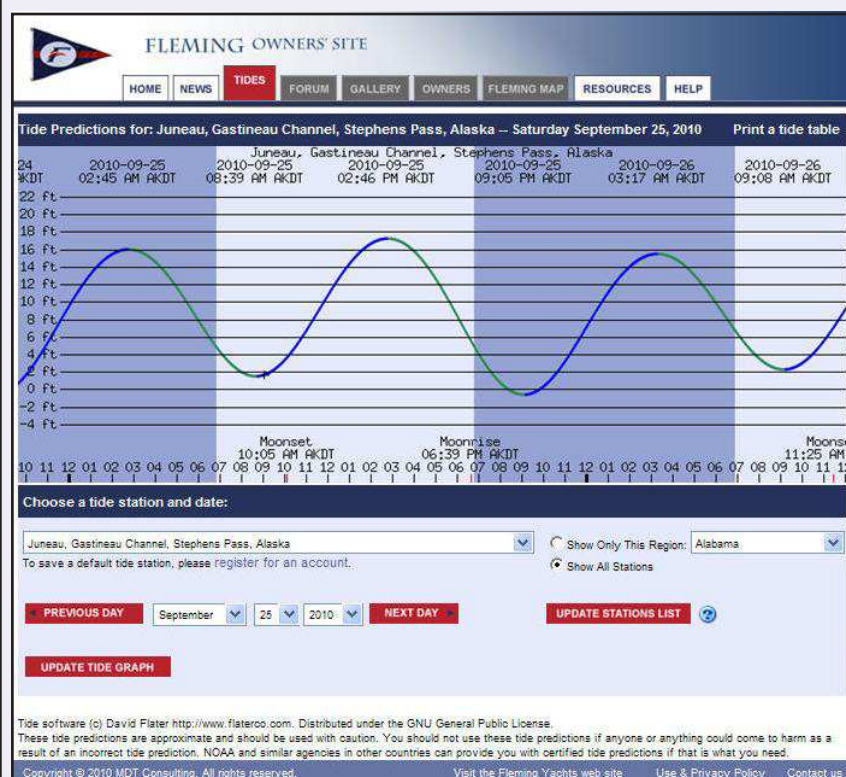


Figure 2 The Tides Graph For Juneau, Alaska for September 25-26, 2010

The tide chart shown above in Figure 1 represents the tidal pattern for a 48-hour period in Juneau, AK. Time appears along the X-axis (the horizontal axis) and the height of the tide appears along the Y-axis (the vertical axis). The hills and valleys shown on the chart represent the height of the tide at a given time.

This chart shows us there are two "hills" or high tides and two "valleys" or low tides for each 24-hour period. Starting at the left for September 25th, we have the "low high" at 2:45AM, the "high low" at 8:39AM, the "high high" at 2:46PM and the "low low" at 9:05PM (these specific time values are given along the top of the chart). AKDT stands for Alaska Daylight Time.

The tide height is computed from a standard called the zero tide height. The zero tide height is the average height of all the low tides or lowest tides in a given period of time for a given location (this isn't shown, but it's height from which all the other tide heights can be calculated).

tidal current reverses. On our graph, the time of high and low slack is indicated by the apex of each low and high tide.

Spring Tides and Neap Tides - Spring tides occur during the full moon and new moon period, resulting in high tides that are very high, and low tides that are very low (and have nothing to do with the season of the year). Neap tides occur during quarter moons, and result in lower differences between high and low tides.

Ebb and Flood - This graph doesn't show ebb and flood tide direction (but tide booklets that you should have will identify it). The rising and falling line between each slack period is either an ebb (when the tide is flowing towards the sea) or flood (when the tide is flowing from the sea). This is also called "the current", and in narrow passages can have a significant effect on your speed through the water, versus your speed over the ground.

If you are a registered user on the Fleming Owners site (i.e., either a guest or verified Fleming owner), your selected region and tide station will remain in effect; otherwise, it will revert to the default station when you next return to the site.

Buttons are also provided on this screen for changing the date of the tide display. The default graph starts at midnight on the current date and goes forward roughly 48 hours. You can select a different date by clicking the “Previous Day” or “Next Day” buttons, or by choosing a Month, Day, and Year from the drop down lists. Once you’ve chosen a tide station and a date, click the “Update Tide Graph” to show the graph for that station on the selected date.

On the graph, the daylight hours are indicated by the lighter blue color and the hours of darkness by the darker blue. Flood tides (rising tides) are indicated by blue line segments on the graph and ebb tides (falling tides) are indicated by the green

² Unfortunately, the list of regions available at this time doesn’t cover the entire world, so you’ll need to check the regions available before spending time on this function. There is a good discussion of this - including some thoughts on how to add your region - at <http://www.flaterco.com/xtide/harmonics.html>.

Juneau, Gastineau Channel, Stephens Pass, Alaska
58.2983° N, 134.4117° W

September 2010

Day	High	Low	High	Low	High	Sunrise	Sunset	Moonrise	Moonset
Sat 25	02:45 15.98 ft	08:39 1.49 ft	14:46 17.22 ft	21:05 -0.62 ft		06:49	18:47	18:19	10:05
Sun 26	03:17 15.47 ft	09:08 2.26 ft	15:13 17.05 ft	21:37 -0.34 ft		06:51	18:45	18:56	11:25
Mon 27	03:50 14.72 ft	09:38 3.19 ft	15:43 16.65 ft	22:13 0.21 ft		06:53	18:42	19:20	12:44
Tue 28	04:27 13.78 ft	10:32 4.25 ft	16:17 16.03 ft	22:56 0.97 ft		06:55	18:39	19:58	13:56
Wed 29	05:13 12.73 ft	10:53 5.31 ft	17:01 15.21 ft	23:49 1.81 ft		06:57	18:36	20:53	14:56
Thu 30	06:16 11.79 ft	11:52 6.30 ft	18:01 14.30 ft			07:00	18:33	22:00	15:40

October 2010

Day	High	Low	High	Low	High	Sunrise	Sunset	Moonrise	Moonset
Fri 01		00:59 2.45 ft	07:50 11.45 ft	13:19 6.78 ft	19:27 13.70 ft	07:02	18:30	23:32	16:10
Sat 02		02:22 2.47 ft	09:25 12.20 ft	14:59 6.10 ft	21:02 13.97 ft	07:04	18:27		16:31
Sun 03		03:41 1.76 ft	10:27 13.68 ft	16:17 4.33 ft	22:19 14.98 ft	07:06	18:25	01:06	16:46
Mon 04		04:43 0.70 ft	11:15 15.41 ft	17:15 2.09 ft	23:21 16.22 ft	07:09	18:22	02:42	16:58
Tue 05		05:35 -0.28 ft	11:57 17.13 ft	18:05 -0.15 ft		07:11	18:19	04:19	17:08
Wed 06	06:15 17.32 ft	06:21 -0.95 ft	12:37 18.61 ft	18:51 -2.05 ft		07:13	18:16	05:56	17:19
Thu 07	01:04 18.05 ft	07:05 -1.16 ft	13:16 19.67 ft	19:34 -3.37 ft		07:15	18:13	07:35	17:31
Fri 08	01:52 18.29 ft	07:46 -0.88 ft	13:55 20.19 ft	20:17 -3.94 ft		07:17	18:11	09:13	17:47
Sat 09	02:38 18.01 ft	08:28 -0.14 ft	14:34 20.09 ft	21:00 -3.73 ft		07:20	18:08	10:49	18:08
Sun 10	03:23 17.25 ft	09:30 1.00 ft	15:13 19.40 ft	21:43 -2.82 ft		07:22	18:05	12:08	18:39
Mon 11	04:10 16.10 ft	09:53 2.41 ft	15:55 18.21 ft	22:28 -1.39 ft		07:24	18:02	13:32	19:25
Tue 12	05:00 14.73 ft	10:40 3.93 ft	16:39 16.67 ft	23:17 0.31 ft		07:26	18:00	14:26	20:26
Wed 13	05:57 13.38 ft	11:35 5.36 ft	17:30 15.01 ft			07:29	17:57	15:02	21:38
Thu 14		06:16 1.94 ft	07:11 12.38 ft	12:46 6.40 ft	18:16 13.52 ft	07:31	17:54	15:26	22:56
Fri 15		01:27 3.15 ft	08:36 12.14 ft	14:14 6.62 ft	20:01 12.63 ft	07:33	17:51	15:42	
Sat 16		02:48 3.65 ft	09:50 12.62 ft	15:36 5.91 ft	21:25 12.59 ft	07:36	17:49	15:54	00:14
Sun 17		03:58 3.49 ft	10:41 13.44 ft	16:37 4.66 ft	22:31 13.11 ft	07:38	17:46	16:04	01:31
Mon 18		04:50 3.09 ft	11:19 14.35 ft	17:23 3.27 ft	23:23 13.81 ft	07:40	17:43	16:11	02:47
Tue 19		05:31 2.68 ft	11:51 15.25 ft	18:02 1.93 ft		07:42	17:41	16:19	04:01
Wed 20	06:05 14.51 ft	06:07 2.37 ft	12:20 16.08 ft	18:35 0.74 ft		07:45	17:38	16:27	05:16
Thu 21	06:43 15.09 ft	06:40 2.22 ft	12:47 16.78 ft	19:07 -0.23 ft		07:47	17:35	16:36	06:33
Fri 22	01:39 15.50 ft	07:11 2.24 ft	13:15 17.32 ft	19:39 -0.93 ft		07:49	17:33	16:48	07:51
Sat 23	01:54 15.69 ft	07:42 2.43 ft	13:44 17.64 ft	20:10 -1.34 ft		07:52	17:30	17:04	09:11
Sun 24	02:29 15.63 ft	08:13 2.80 ft	14:14 17.74 ft	20:43 -1.44 ft		07:54	17:28	17:26	10:31

Tide software (c) David Flater <http://www.flaterco.com>. Distributed under the GNU General Public License. These tide predictions are approximate and should be used with caution. You should not use these tide predictions if anyone or anything come to harm as a result of an incorrect tide prediction. NOAA and similar agencies in other countries can provide you with certified tide predictions if that is what you need.

Figure 3 Print of a 30-day Tide Table



Figure 4. A graphic example of a large tidal difference, this particular one at Juneau, Alaska. The photo at left is at high tide, and the water is high enough that the sailboat at the far end is buoyant. During this high tide, a blue-hulled fishing boat requiring maintenance work steered onto the tidal grid. As the tide went out, the fishing boat was left high and dry, enabling bottom work to be done during low tide (photo at right). Every village and town in SE Alaska has one of these tidal grids, reducing the necessity of boat haul-outs. Both photos were taken from the same spot on the floating dock. This should also illustrate the importance of paying attention to tidal charts, as running aground can be very expensive..

segments. Moonrise and Moonset times are also indicated along the lower axis of the graph.

Printing A Tide Table - You can also view and print a tide table with tides, sunrise, sunset, moonrise and moonset information for the selected tide station over the 30 days, starting with the current date. Click the "Print a Tide Table" link in the upper right corner of the screen to view and print the tide table. Figure 2 is a print of the 30-day tide table that corresponds with the tide chart in Figure 1 for Juneau, Alaska.

zone where you're located, and it will show you the GMT-x value for that time zone.

Note: Greenwich Mean Time is the same all year around - there is no Summer Time/Daylight Savings Time, so you must manually change your profile twice each year when/if your local time switches to/from Summer Time/Daylight Savings Time.

Setting Your Local Time Zone

The Tides function (as well as the Fleming Map function depends on an accurate indication of the local time. There's a setting in the user profile page to allow you to set your time zone relative to GMT. To edit your profile, go to the home page and click "Edit my Profile" directly under the "Log Out" button. On the right side of the profile screen you'll find a Time Zone setting box.

Using the pull-down menu, select the GMT-relative time zone that you're currently located at.

Here are some examples of GMT-relative times:

- London GMT
- New York GMT-5 (standard time)
GMT-4 (Daylight Savings time)
- Chicago GMT-6 (standard time)
GMT-5 (Daylight Savings Time)
- Seattle GMT-8 (standard time)
GMT-7 (Daylight Savings time)
- New Zealand GMT+12 (standard time)
GMT+13 (Daylight Savings Time)
- Sydney, Aus. GMT+10 (standard time)
GMT+11 (Daylight Savings Time)

For more information about GMT, go to www.greenwichmeantime.com. On their home page, use the "Select a City to see Current Time" in the time

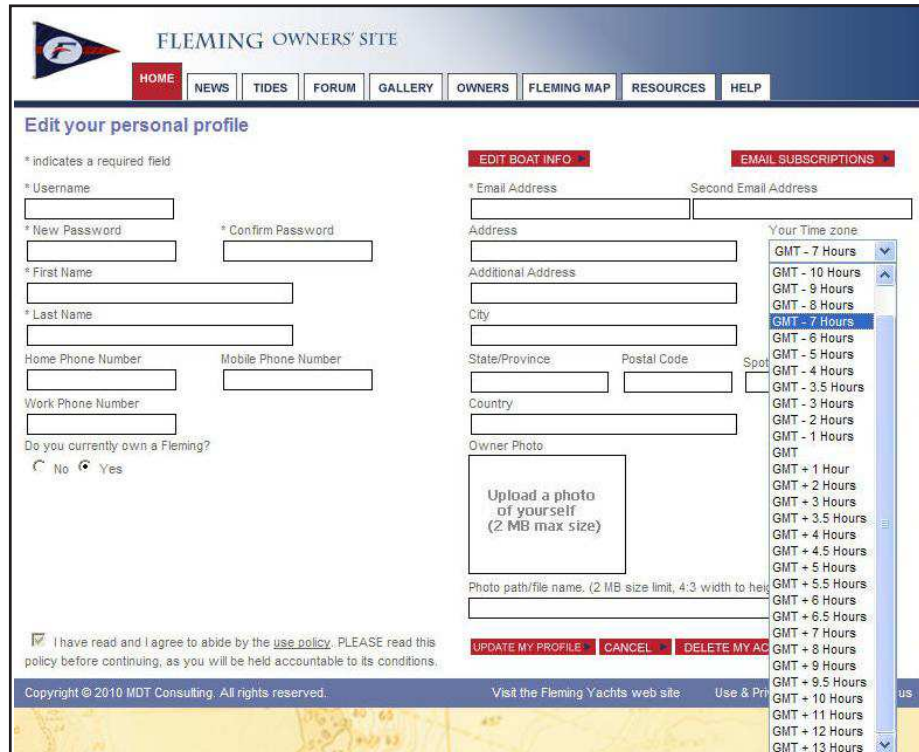


Figure 4 Profile screen - setting local time menu at right