

Double High Waters and High Water Stands

What?

EasyTide shows two ‘paired’ High Water (HW) events at some locations, which means the HW and Low Water (LW) tables of data will look like the below image. Therefore up to two HW’s in the morning and two in the afternoon are displayed.

Any Date					
LW	HW	HW	LW	HW	HW
01:02	07:33	08:58	13:38	20:03	21:53
1.5 m	4.3 m	4.2 m	1.4 m	4.1 m	4.0 m

Why?

At some locations the tidal curve (tidal regime) shows certain characteristics and complexities which mean that the identification of these ‘extra’ HW events can be beneficial in the interpretation of the predictions.

In September 2015, anomalies came to light in the predictions for **Portsmouth** where confusion was caused over the progression in time of HW, specifically over the 10 – 12 September 2015. Instead of the usual ‘approximately one hour’ advancement in the time of HW from day-to-day, the automatic identification of the time of HW was affected by the **HW stand** (i.e. the prolonged period of little or no change in the tidal rise or fall over the HW portion of the tide curve). So the seemingly odd progression in time of HW was affected by where the peak of the tide was identified along the flat portion of the curve.

In the current version of EasyTide, following the assessment of extensive customer feedback on this subject, Portsmouth shows **two** distinct sets of predictions. One is the ‘traditional’ singular highest point over the high water portion of the curve (simply called ‘PORTSMOUTH’) and the other as illustrated in the table above (i.e. two ‘paired’ HW’s designed to convey the beginning and end of any ‘HW stand’, called ‘PORTSMOUTH (HIGH WATER STAND)’).

For additional detail on the background to the ‘paired HW’ approach see ‘Display of ‘Paired’ High Water Events’ below.

Where?

The locations where the two ‘paired’ HW’s are currently shown on EasyTide are as follows:-

<i>Cowes</i>
<i>Calshot Castle</i>
<i>Southampton</i>
<i>Redbridge</i>
<i>Warsash</i>
<i>Bursledon</i>
<i>Portsmouth (High Water Stand)</i>



What about tidal streams?

Tidal streams are referred to the 'traditional' singular HW time at Portsmouth and not the 'High Water Stand' output.

Display of 'Paired' High Water Events

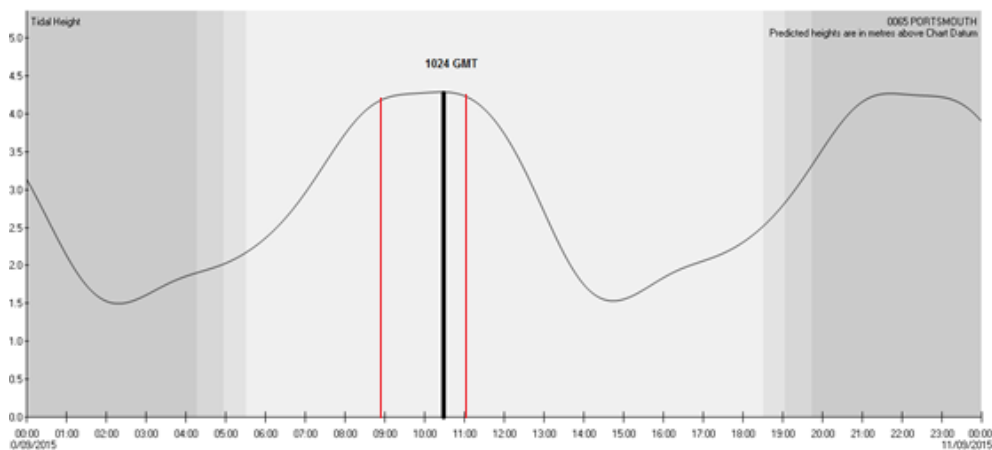
The decision to show the two 'paired' HW's also relates to requirements from some port authorities and harbour masters. Some of them require output of the two 'paired' High Waters in their predictions for operational reasons, which then rippled onto other customers who also expressed interest in knowing similar detail concerning the shape of the HW portion of the predicted curve (with regards the beginning and end of any HW 'stand'). For example, we were contacted by a swimmer who experienced difficulties with the tidal streams during the period 10 - 12 September 2015 prediction, which as previously described, showed High Water times progressing oddly from day-to-day. The beginning of the fall of the tide in this instance caught him unawares as he expected a longer duration before the ebb flow took hold. Knowledge of the beginning and end of the stand would help prevent this issue.

The below illustrated curves show the published times of HW in **black**. The **red lines** identify the **start** and **end** of the stand period, which is how we have now decided to output the predictions in our digital predictions software 'TotalTide' and the on-line prediction site 'EasyTide'.

So the red lines in the following images illustrate how this new approach *would* have looked for those days in 2015.

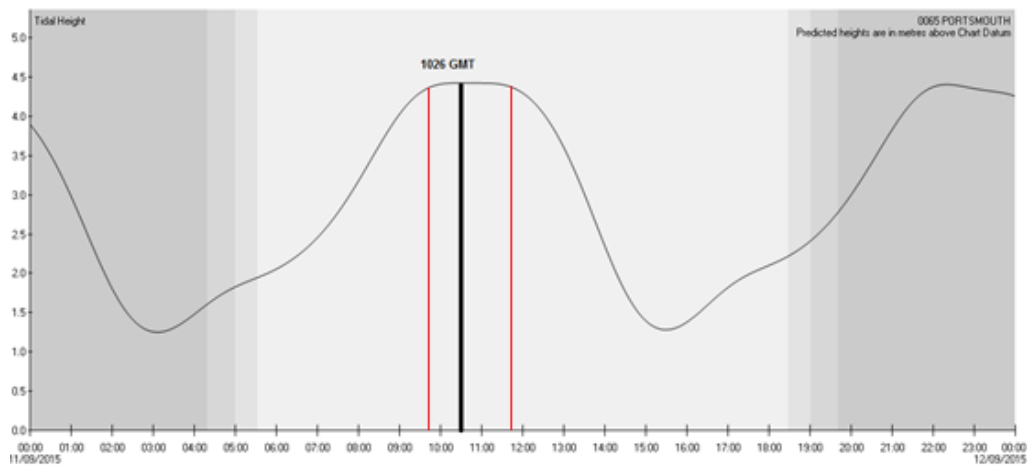


10/09/15



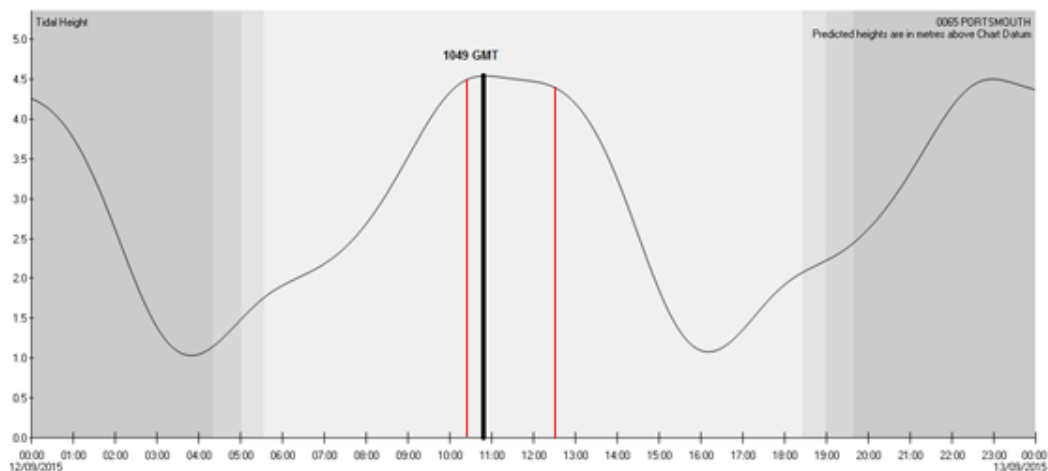
- Published HW at **1024 GMT (black)**
- Beginning and end of Stand: **08:56 & 11:01 GMT (red)**

11/09/15



- Published HW at **1026 GMT (black)**
- Beginning and end of Stand: **09:45 & 11:45 GMT (red)**

12/09/15



- Published HW at **1049 GMT (black)**
- Beginning and end of Stand: **10:26 & 12:26 GMT (red)**

