

Tide prediction instructions for use

Reference level

The water heights in this directory are given in relation to chart datum (3.159 m below IGN 69), which by definition corresponds to the level of the lowest astronomical low water.

Time and height forecasts

This page (referred to as Table 1) gives, for the 5 sites of Saint-Nazaire, Donges, Cordemais, Le Pellerin and Nantes, the times and heights of high and low tides, in periods of low water, i.e. low water in the Loire, when atmospheric pressure is normal and there is no wind.

The following corrections may need to be made to these 'raw' predictions:

FLOW CORRECTIONS (TABLE 2)

It is customary to assess the size of the river flow in the lower reaches of the Loire by the height observed on a water level scale located at Montjean, 64 km upstream of Nantes-Chantenay. A discharge value is associated with each height on the scale, based on a rating curve drawn up by the Direction Départementale des Territoires et de la Mer, Service Transport, Subdivision Sécurité Fluviale, Loire, VNF based in Nantes.

- A flow rate of around 200 m³/s corresponds to a low-water situation in the river.
- A flow of 2000 m³/s corresponds to an average flood.
- Flows in excess of 5,500 m³/s correspond to exceptional floods.

The influence of river flow on the tide is considered to be negligible downstream of Cordemais.

The correction values are therefore given, for each of the three sites of Cordemais, Le Pellerin and Nantes, for flow values observed at Montjean (from 500 to 5200 m³/s):

- 72 hours before predicted slack water for Cordemais,
- 24 hours before predicted slack water for Le Pellerin,
- 14 hours before predicted slack water for Nantes Usine Brulée,

For intermediate flow values, interpolated values between those given in the table are adopted.

For height corrections, the values are given for standard coefficients. For intermediate coefficients, interpolated values between those given in the table are adopted.

The height observed at Montjean is generally published in the local press and on the <http://www.vigicrues.ecologie.gouv.fr/> website.

ATMOSPHERIC PRESSURE CORRECTIONS (TABLE 3) Table 3 gives the corrections to be made to the heights predicted using tables 1 and 2, when the atmospheric pressure differs from 1 013 hectopascals or millibars.

WIND CORRECTIONS (TABLE 4)

Table 4 gives the approximate corrections to be made to the times and heights obtained using tables 1 to 3, when the wind is not zero and according to its strength and direction.

Important note

The tide predictions presented in this document are calculated by SHOM.

For Montoir, Cordemais, Le Pellerin and Nantes UB, the slack water heights (low and high tides) are calculated by Nantes Saint-Nazaire Port according to the tidal coefficients provided by the SHOM and represent the minimum heights that can be reached.

It is important to note that the height of water measured may be higher depending on the flow of the Loire.

The times of slack water provided in this directory correspond to the time of maximum water height (for high tides) or minimum water height (for low tides) predicted by the SHOM model, for low water conditions (low water in the Loire).

For high tides, during periods of low water (coefficients below 50), with the phenomenon of full tide holding (duration of slack water at high tide from 1 to 3 hours, with a variation in water level of less than 20 cm), the hours of slack water may not always follow one another from downstream to upstream. In this case, it is possible for a port upstream of St Nazaire to have an earlier predicted slack water hour than another port further downstream. This is not an error, but a physically measurable phenomenon.