

Baie De Saint-Brieuc, France

By

Hubert Chanson

*Department of Civil Engineering
The University of Queensland
Brisbane QLD 4072, Australia
h.chanson@uq.edu.au*



Figure 1. Le Val-André Beach, Baie de Saint-Brieuc, Côtes d'Armor, France at the 2.3 m low tide on 3 September 2000. High tide was 10.3 m and the tide "coefficient" was 81¹. Note the small fishing harbor of Port de Piegu visible at the base of the Piegu promontory. (Photo by Mrs. C.^oM. Chanson.)

Bay De Saint-Brieuc is located on the north coast of Brittany, France, along the English Channel (called La Manche in France). The Brittany and Normandy coast to the east, are known for their large semi-diurnal tidal amplitudes. In some circumstances, the tidal range may reach several meters when the boundary shape favors the enhancement of the tide, and there is a resonance of the basin with the tide. Large, macro-tides

occur in the Bay of Fundy, Canada, and in the Baie du Mont-Saint-Michel in Normandy. A lesser known site is the Baie de Saint-Brieuc, 80 km west of Mont Saint-Michel and about 40 km from the Rance tidal power plant. In the Baie de Saint-Brieuc, the tidal range may exceed 11 m. The coastline consists predominantly of sandy beaches separated by headlands. Figures 1 to 5 illustrate typical features of the coastline.

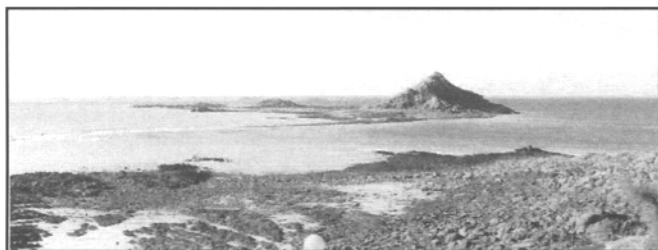


Figure 3. Le Verdelet Island off the Val-André Beach, Baie de Saint-Brieuc, Côtes d'Armor, France on 3 September 2000, at low tide (Low tide: 2.3 m, high tide: 10.3 m, coefficient: 81). Verdelet Island is accessible at very low tides on foot via a causeway (La Passe) made of sand and rocks accumulated by currents. There is a legend that a monastery once existed on the rock. La Passe is clearly visible linking the island to the Piegu promontory.

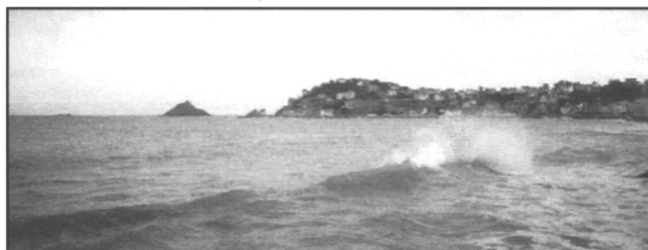


Figure 2. High tide of 11.6 m and strong waves and wave reflection on 30 September 2000. Low tide was 0.93 m, with a coefficient of 101. High waves and wave reflection were observed. (Photo by Mrs. C.^oM. Chanson.)

¹ "Coefficient" refers to a parameter defined by the Hydrographic Service of France to characterize the amplitude of the tide and is referenced to the tide amplitude at Brest. A value exceeding 100 denotes a very large tidal range. See http://www.shom.fr/ann_marees.

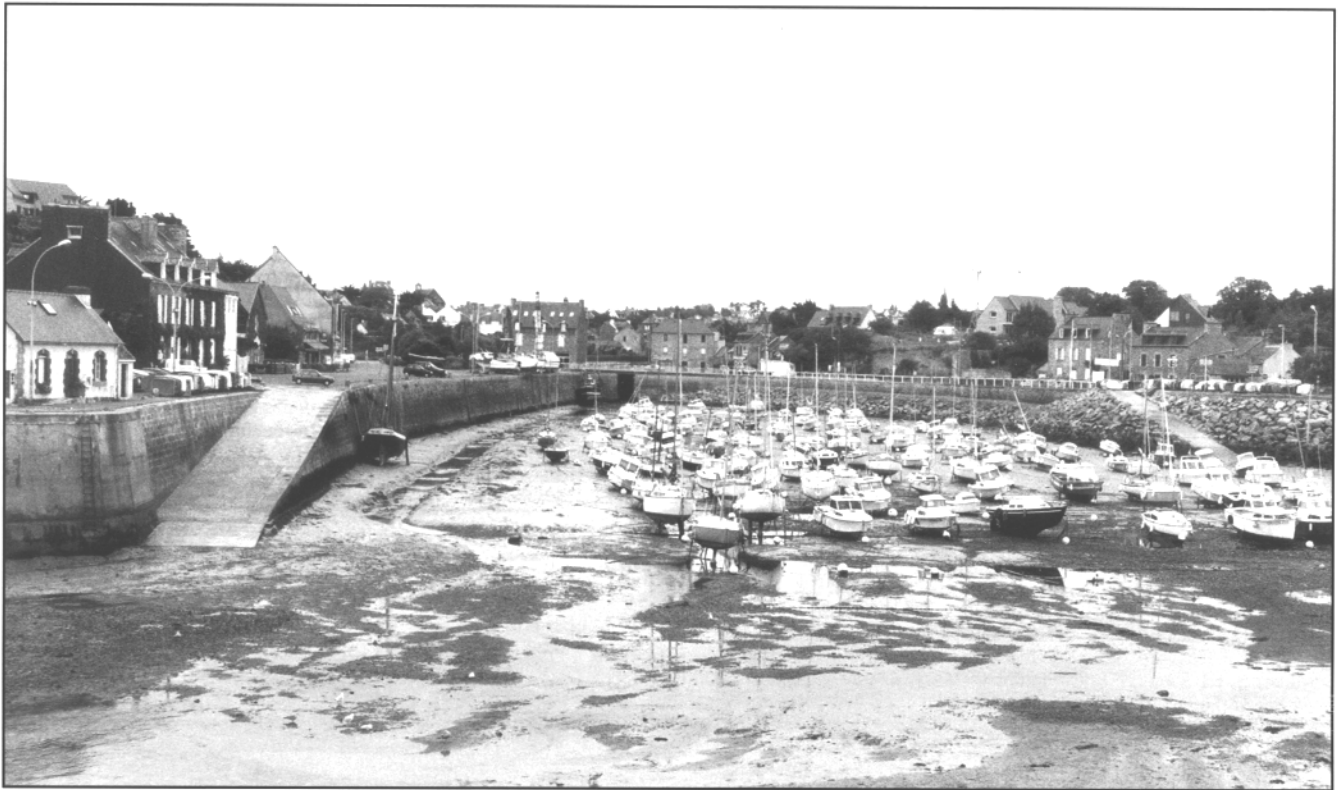


Figure 4. Dahouët fishing harbor, Baie de Saint-Brieuc, Côtes d'Armor, France at low tide on 8 September 2000. Low tide: 5.16° m, high tide: 8.37 m, coefficient: 31. The harbor is located in an inlet just west of Le Val-André Beach. The harbor is dry twice a day at low tides. At the end of the basin, the old tidal mill building is seen in the center of the photograph. The moulin à marées (tidal mill) connected the harbor basin to a freshwater lake (Etang de la Flora). Dahouët has had a long history. It was used by Vikings and later became active in trade with Ireland and England. Dahouët fishermen were fishing Newfoundland's Grand Banks as early the 1500's, and some were still fishing in Newfoundland and Iceland up to the early 1900's.

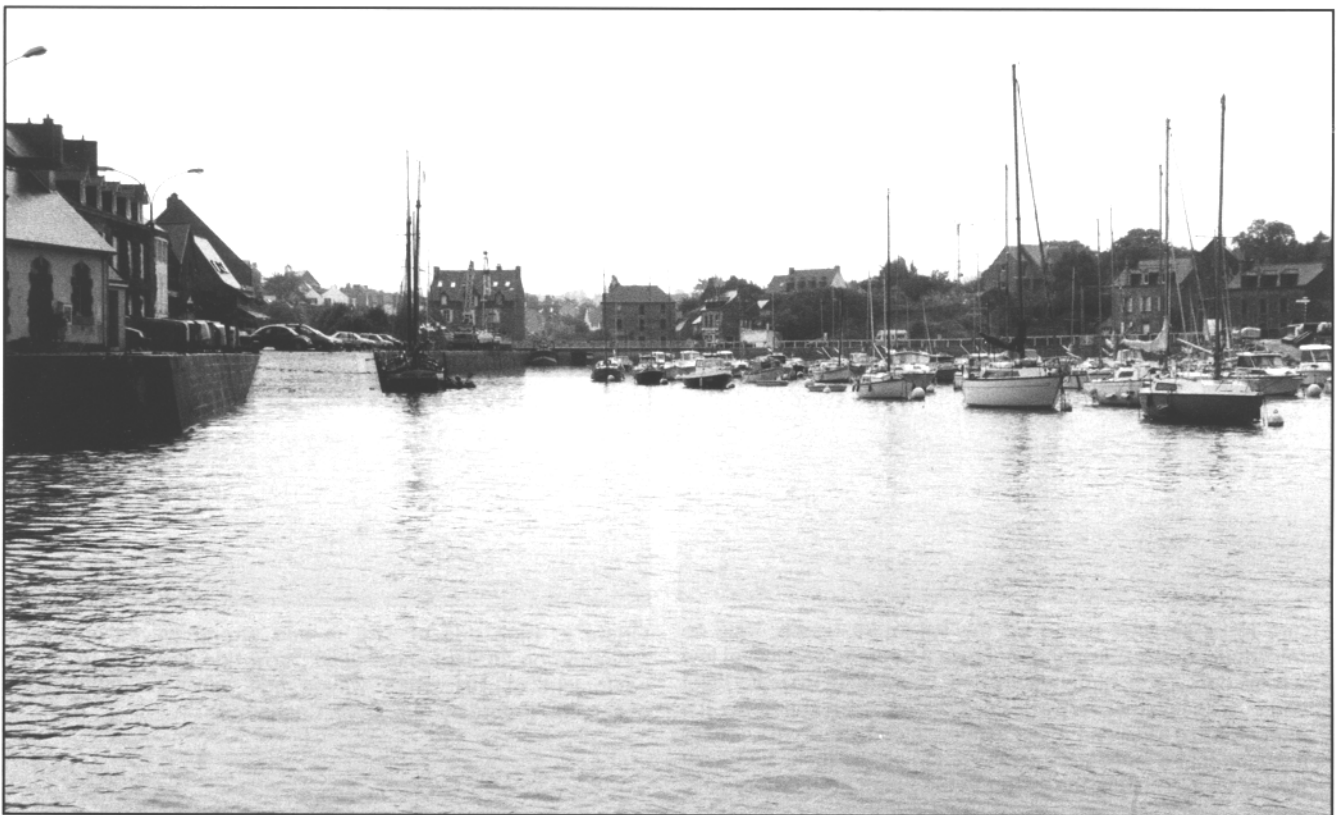


Figure 5. Le Port de Dahouët at high tide on 3 November 2000. Low tide: 11.40 m, high tide: 1.81 m, coefficient: 81.