# *A wee bit of maritime history... 30*

## Mapping the Narrows

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**Seafaring has been a constant through human history, driven as many things are, by trade and warfare.** There is evidence that navigation, the means of figuring out position, course, and distance travelled, has been used since around 2000BC at the start of the Pacific migration from New Guinea, ultimately leading to the discovery of Hawaii in around 400AD. It is thought that these seafarers used astronavigation, and knowledge of the particular qualities and characteristics of winds from different directions, to navigate from island to island. The Tower of the Winds in Athens, an octagonal clock tower with relief depictions of the 8 classical wind directions, built around 50BC, was described as a 'public compass', and, incidentally, inspired the design of the Temple of the Winds at Mount Stewart by archaeologist and architect James 'Athenian' Stuart in the late 18th century.

With the advent of the magnetic compass in the 13th century, more accurate charting became possible, and the early portolan charts are works of art, as are subsequent charts, such as this depiction of the east coast of Ulster, complete with Sir John de Courcy, and a merman, made around1595.

Sea depths in later charts (including early Admiralty charts) were determined by soundings using weighted lines. Today, with the use of satellite imagery, LiDAR scanning, and sonar technology (remote sensing techniques) large areas of coastline and seafloor can be mapped highly accurately and with relative speed. However, globally, the ocean floor remains less completely mapped than the surface of the moon.

Most mapping of the seafloor (bathymetry) is carried out by government or commercial agencies. But sonar technology is available at a 'consumer' level, largely driven by the recreational fishing market in the form of fishfinders for use in small pleasure craft, and 'crowd sourced' seafloor data is increasingly available. Downscan and multibeam sidescan recordings can be used to obtain 2D and 3D imagery of the seafloor. An advantage of sonar use on small vessels is that shallow areas not accessible to larger survey vessels can be easily scanned.

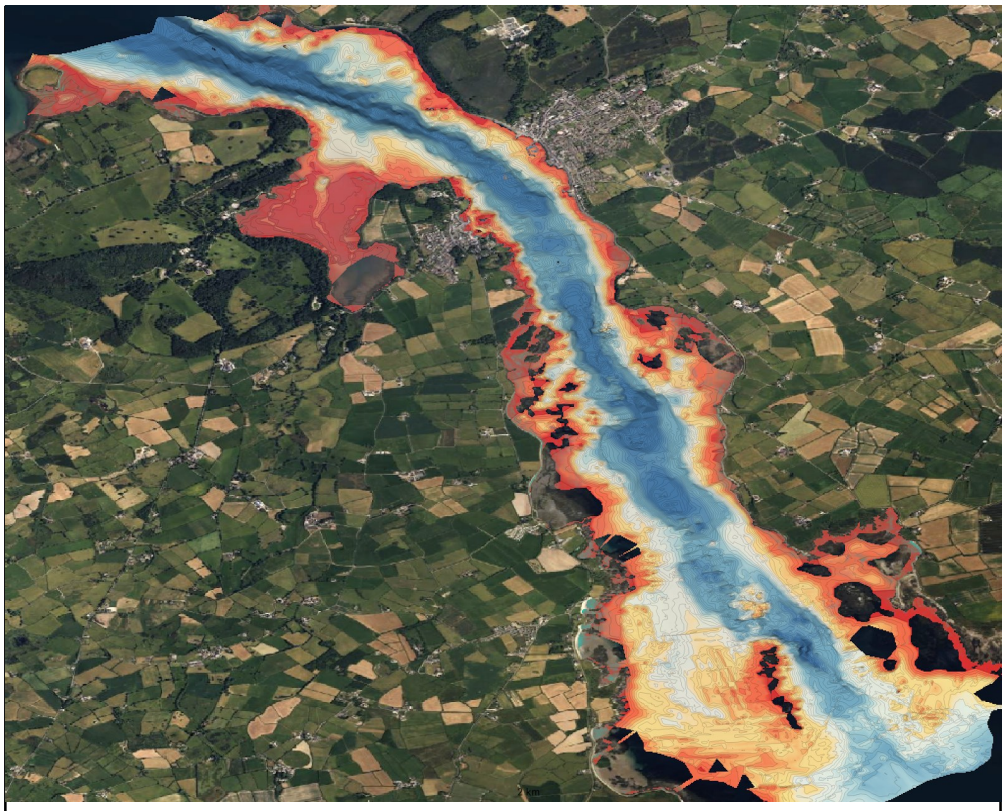
**Strangford Narrows was** scanned in 2013 by the Agrifoods and Biosciences Institute using sonar equipment on the government Fisheries Protection vessel to create a habitat map. This vessel is too large to allow it to scan shallow parts of the Narrows, and as a result the seafloor map produced by the project does not extend to those areas.

Consequently, a bathymetric survey was carried out during the summers of 2017-19 using sonar equipment attached to a small boat which was able to access shallow waters. This involved the systematic scanning of the sea area bounded by a line between Ballyhenry Point and Chapel Island to the north, and between Ballyquinton Point and Killard Point to the south. The bathymetric data can be processed by geographical information system (GIS) software to create 2D seafloor maps, and 3D images.

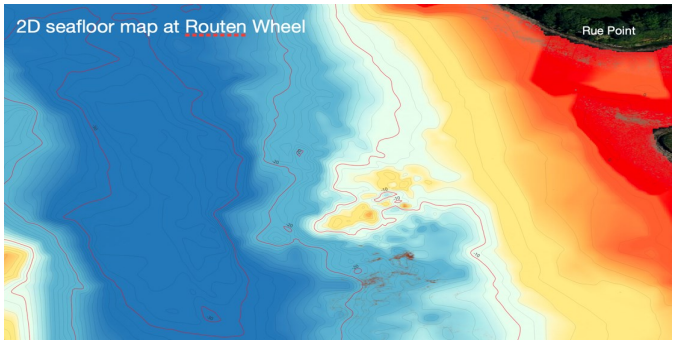
The seafloor map, shown opposite, shows the processed data for the complete survey area of the Narrows. It is interesting to note that the deepest point of the whole Lough is off Ballyhenry Island at 63m.

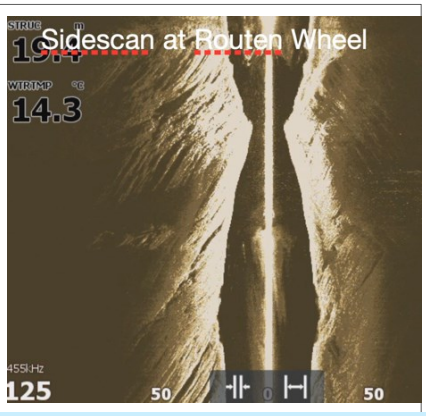
The shallower entrance to the Lough is clearly seen, with a minimum depth over the Bar Pladdy, which runs from Ballyquinton Point in a S/SW direction, of 1m at 'The Knob' and the main navigable channel to the west of Bar Pladdy has a minimum depth of 10m. This creates hazardous sea states in certain wind and tide conditions (a strong ebb tide during a south-easterly gale being particularly dangerous).

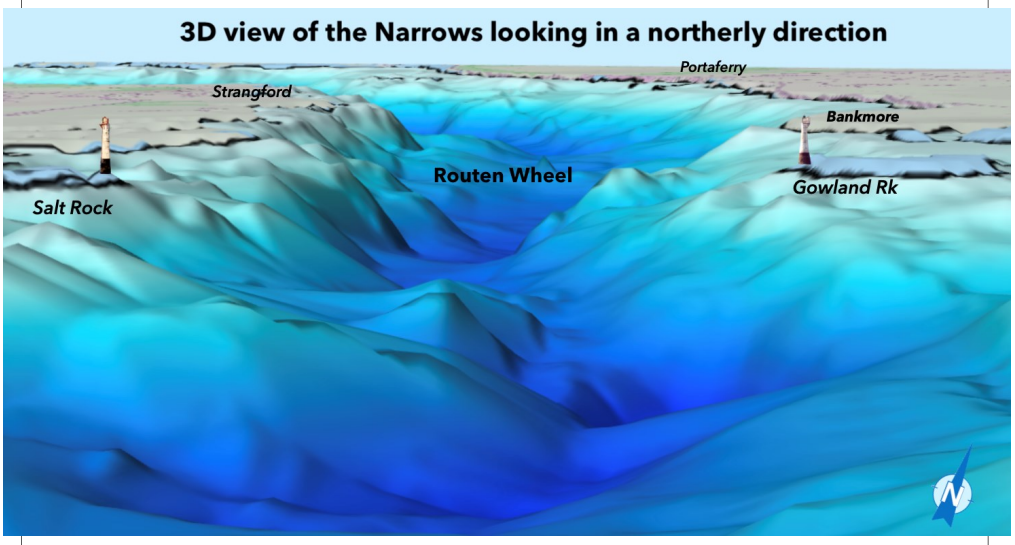
The strongest tides are usually in the middle of the Narrows, but the curve in its orientation, running ESE from Ballyhenry island, before curving in a SSE direction at Portaferry, means that there are strong tidal flows sweeping right up to the shoreline at the south end of Portaferry on the ebb, and at the north end of Portaferry on the flood tides. Note also the shallower area just north of Rock Angus, known as the Meadows, which creates an extensive area of swirling water when the tide is flowing, well known to passing boatmen.



Particular seafloor structures can be depicted with data from downscan imaging or sidescan imaging, or processed through GIS. For example, the seabed terrain that causes the whirlpool off Bankmore, the Routen Wheel, can be shown in various forms and these imaging modalities help to explain the Routen Wheel turbulence, which can be quite violent in certain conditions of wind and tide. It rises rapidly from a depth of 35m to 5m, and extends towards the centre of the narrowest part of the Narrows, where tidal velocity is at its greatest.

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