

# National Tide Gauge Network Report of Ireland

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## Introduction

Sea level recording has a relatively long history in Ireland with measurements in Dublin (for example) dating back to 1938. However, there has never been a coordinated network of gauges around the coastline similar to those operated in most other European countries. In August 2003 the Department of Communications, Marine and Natural Resources commissioned the Hydraulics and Maritime Research Centre (HMRC) and the Coastal and Marine Resources Centre (CMRC) both of University College Cork and Proudman Oceanographic Laboratory (POL) to investigate Ireland's requirements in terms of tide gauge measurements. The study catalogued all known tide gauge sites in Ireland and made recommendations for a new network of sea level stations to be established. The emphasis of the network would be to have a number of high quality stations, which would consist of 1cm standard tide gauges together with ancillary sensors to provide meteorological data. In addition it was recommended that sites set up for tracking long term trends in mean sea level would also contain Global Positioning System (GPS) receivers. The potential network sites were divided into three groupings to reflect different usages and if the recommendations of the study are fully implemented then the whole network will consist of 27 stations. The three groupings are described as follows,

**Group 1 GLOSS Stations:** The north (Malin Head) and south (Castletownbere) primary Irish Sea level stations that will comprise the main Irish contributions to GLOSS and ESEAS. These two sites should be equipped with high quality tide gauges and meteorological packages and CGPS and would provide data of 'climate change' quality.

**Group 2 Nationally Important Stations:** Gauges in this grouping are considered to be of significant strategic importance in terms of oceanographic studies and modelling, offshore surveying, engineering work and flood warning. The chosen sites are (or will be) located close to the open ocean and so are not appreciably affected by shallow water effects.

**Group 3 Locally Important Stations:** These are stations where gauges already exist and are considered important for navigation purposes and other harbour operations e.g. dredging. The chosen sites are located either in estuaries, inlets, harbours or bays and so water levels may not be representative of open ocean conditions. Many of the gauges are sited near large population centres and so are necessary for monitoring water levels particularly during flood events.

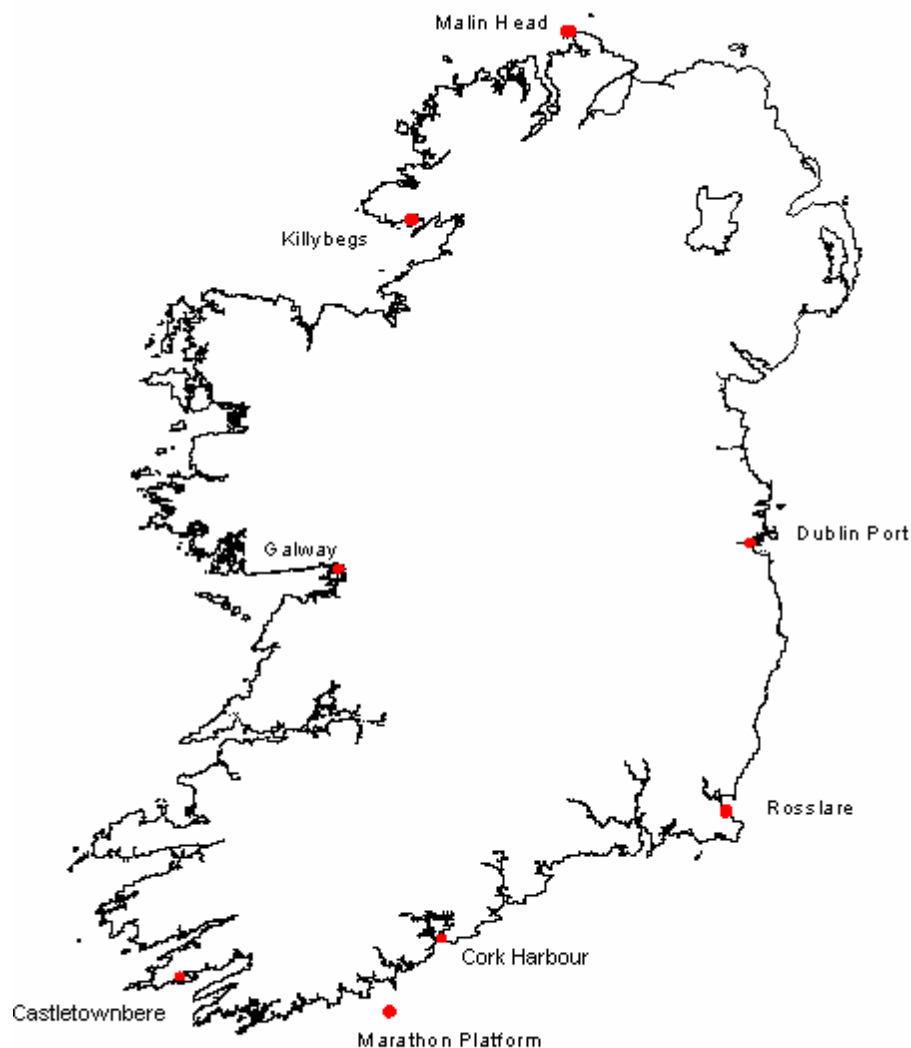
## Current Status

The implementation of the report recommendations is only now taking place so the Irish tide gauge network is not yet fully established. A number of new gauges have been installed and others have been upgraded. Every effort is being made to standardise technology at all sites and OTT Nimbus gauges are being used in four of the sites shown in the map below. The most significant new

installation has been a new GLOSS site in Castletownbere where in addition to the tide gauge a weather station and CGPS equipment have also been installed. The installation of a new gauge near the mouth of Cork Harbour is imminent and there are plans to upgrade the gauge at Rosslare. By 2007 it is envisaged that that up to 15 high quality gauge sites will be operating in Ireland and that a CGPS receiver will be installed at Malin Head. This information report will be updated annually until the network is fully established.

Methodologies for disseminating water level data from the Irish tide gauge network have not yet been established. At the moment data can generally be obtained by contacting the gauge operator directly. It is planned to formulise the approach to data quality control and analysis in 2005. It is likely that a suitable organisation will be given responsibility for all data generated by the network.

Further information on the Irish tide gauges can be obtained at the website [www.irishtides.com](http://www.irishtides.com) where real time data from the Galway gauge is displayed. In addition the report 'Scoping Study to assess the status of Irelands tide gauge infrastructure and outline current and future requirements' is available in pdf format from the first author above.



<b>Station</b>	<b>Operator/Owner</b>	<b>Gauge Type</b>	<b>Comment</b>
Malin Head	Ordnance Survey Ireland	OTT Nimbus	Recordings date back to 1958. Current gauge was installed in 2003. GLOSS gauge
Killybegs	Dep. Of Communications, Marine and Natural Resources	OTT Nimbus	Gauge installed in Nov. 2000, some data has been lost due to memory overflows in the logger
Galway	Galway Harbour Company	OTT Nimbus	Installed summer 2004, real-time data displayed on website
Marathon Platform	Marathon Oil	Saab WaveRadar	Installed in 1997 and data is transmitted to Met Eireann every hour
Castletownbere	Dep. Of Communications, Marine and Natural Resources	OTT Nimbus	Installed Dec 2004 along with weather station and GPS receiver
Cork	CMRC and HMRC	OTT Kalesto	To be installed in Spring 2005
Rosslare	Rosslare Port	Pressure Gauge (Observer Instruments)	Installed in 1996 but unreliable and inconsistent. New gauge to be installed in 2005
Dublin	Dublin Port Company	Druck Pressure Transducer	Long established gauge site in need of upgrading