

# *National Tidal and Sea Level Facility*

*Annual Report for 2004 for the  
UK National Tide Gauge Network  
and Related Sea Level Science*

*Edited by Elizabeth Bradshaw*



**Proudman  
Oceanographic Laboratory**  
NATURAL ENVIRONMENT RESEARCH COUNCIL



**British Oceanographic  
Data Centre**  
NATURAL ENVIRONMENT RESEARCH COUNCIL



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## National Tidal and Sea Level Facility

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[Tide gauge instrument information, data processing procedures and gauge location](#)

[Report for 2004 on Data Quality and visits to sites](#)

[Report on 'Monitoring Vertical Land Movements at Tide Gauges' in 2004](#)

[Report on gauges in the South Atlantic](#)

#### Contributors to the Annual Report:

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Dave Smith, POL	- Maps and site information
Peter Foden, POL	- South Atlantic Network Management
Simon Holgate, POL	- South Atlantic Network Management
Steve Loch, BODC	- Calculating statistics in Edteva
Richard Bingley, Univ. Of Nottingham	- Monitoring Vertical Land Movements at Tide Gauges

Editor of the Annual report: Elizabeth Bradshaw, BODC

#### NTSLF Coordination Committee Members and Main Interests:

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Juan Brown, BODC	- Director BODC
David Blackman, POL	- Tide Gauge Data Products
Libby Macleod, BODC	- Tide Gauge Data Sets
Richard Downer, BODC	- Web Development and Management
Kevin Horsburgh, POL	- Operational Tide-Surge Models and Chair of NTSFL
Peter Foden, POL	- South Atlantic Network Management
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Dave Smith, POL	- Leader Tide Gauge Inspectorate
Simon Williams, POL	- GPS and Absolute Gravity Networks
Philip Woodworth, POL	- Director of the Permanent Service for Mean Sea Level

Thanks also to all those involved in the maintenance of the network, the data retrieval, processing, quality control and delivery.

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## Foreword

The UK National Tidal & Sea Level Facility (NTSLF) was established in 2002 to reflect the importance of sea level monitoring to the public, the government and the academic community. It brings together much sea level expertise within the Proudman Oceanographic Laboratory (POL) and the British Oceanographic Data Centre (BODC) in collaboration with other groups that have scientific interest in sea level and geodesy (in particular, the University of Nottingham). The launch of the NTSLF was celebrated with a scientific conference at the Royal Society on 16-17 February 2003.

The NTSLF satisfies an important strategic need for the UK where tidal processes, coastal water levels and mean sea level have implications for coastal protection, sustainable housing development, management of the coastal environment, marine industry and leisure. The NTSLF comprises the UK national Tide Gauge Network, geodetic networks for monitoring vertical land movements, and gauges in the British Overseas Territories. It is supported by the skills of BODC in data processing, quality control and dissemination. It is this unique skill base that qualifies the NTSLF to provide technical advice to a wide community. Practical and scientific applications of the data include tidal prediction, flood warning, navigation and climate change studies.

All data are readily accessible, free of charge, via our web pages. We ensure effective knowledge transfer in order to demonstrate value for public money channeled through the Natural Environment Research Council (NERC). This report contains a summary of NTSLF activity for the period January-December 2004. Quality checked tide gauge data for the UK are freely available for download via the BODC web site. This includes 15-minute data values for January 1993 onwards and hourly values prior to 1993. Tide gauge data from Gibraltar are now available, as well as real-time data from Ascension Island and Port Stanley. Information on technological developments, network status, numerical model forecasts and products for tidal analysis and prediction can be obtained from the NTSLF web site.

Presently, the tide-surge models used for coastal flood forecasting are being systematically upgraded. These models are run four times a day at the Met Office, producing predictions up to two days ahead. The 12 km resolution surge model has been extended to reach southwards as far as 45°N so that it can capture wind-generated surge originating in the Bay of Biscay. A further development is the introduction of a new, finer resolution (3.5 km) inner shelf model covering the Celtic Sea, the Irish Sea, the North Sea and the English Channel. Research is underway to implement the necessary data transfer protocols to allow the numerical models to assimilate real-time data from key tide gauges.

The UK national Tide Gauge Network and operational model developments are funded by the Environment Agency. We would also like to acknowledge the support of all those who contribute scientifically towards and make use of the NTSLF.

Dr Kevin Horsburgh  
Chair of NTSLF