

# ***National Tidal and Sea Level Facility***

***Annual Report for 2008 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 2008 on Data Quality and visits to sites](#)

[Report on 'Monitoring Vertical Land Movements at Tide Gauges' in 2008](#)

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

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Les Bradley, POL	- Instrument documentation and site information
Dave Smith, POL	- Maps and site information
Steve Loch, BODC	- Calculating statistics in Edteva
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Peter Foden, POL	- South Atlantic Network Management
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David Blackman, POL	- Tide Gauge Data Products
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Richard Downer, BODC	- Web Development and Management
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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

Rising sea levels and climate change have profound implications for coastal protection and marine management. Managing the risk and developing effective forecasting systems demands the best understanding of the science behind sea level rise, storm surges and coastal flooding. Based at the Proudman Oceanographic Laboratory, with research partners in top universities and at the Met Office, The National Tidal and Sea Level Facility (NTSLF) is the UK centre of excellence for sea level monitoring, coastal flood forecasting and the analysis of sea level extremes. Our work is of strategic importance to government, local authorities, the public and the scientific community. The NTSLF also provides annual input to the UK Marine Climate Change Impacts Partnership. This report contains a summary of NTSLF activity for the period January-December 2008.

NTSLF scientists and engineers are responsible for:

- Sea level monitoring around the UK and at key sites in the South Atlantic Ocean and the British Overseas Territories.
- Storm surge forecasting computer models.
- The calculation of extreme sea levels needed to design coastal defence options.
- Projections of extreme sea levels in future climate scenarios.
- Analysis of the tsunami risk to the UK.

The NTSLF manages precision tide gauges at 44 sites around the UK. Sophisticated telemetry systems make these data available in real time for operational coastal flood warning. We are also responsible for monitoring sea level at sites in the south Atlantic as part of our contribution towards international climate change research. Major projects this year included the development of a new site in the Bristol Channel and the addition of mid-tide sensors at several locations to improve data quality control and the accuracy of long-term sea level measurements. Real-time data from all locations can be seen on our web pages (<http://www.pol.ac.uk/ntslf>). Quality-controlled tide gauge data are available free of charge from the British Oceanographic Data Centre (BODC).

Storm surges are the effect of low atmospheric pressure and strong winds on the sea surface. Around the UK, surges can raise sea level by 2–3 m on top of some of the world's largest tidal ranges. NTSLF scientists continuously improve the accuracy of computer models used for coastal flood warning. This year, along with colleagues at the Met Office, we have developed an operational ensemble prediction system, where multiple simulations help to quantify the forecast uncertainty.

The UK National Tide Gauge network is owned and funded by the Environment Agency. We would like to thank all those who contribute scientifically towards, and make use of, the NTSLF.

Dr Kevin Horsburgh  
Head of NTSLF