National Tidal and Sea Level Facility

Annual Report for 2003 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
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ENVIRONMENT AGENCY

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Contributors to the Annual Report:

Les Bradley, POL	- Instrument documentation and site information
Dave Smith, POL	- Maps and site information
Peter Foden, 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:

Trevor Baker, POL	- GPS and Absolute Gravity Networks
Colin Bell, POL Applications	- Tide Gauge Data Products
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 NTSLF
Peter Foden, POL	- South Atlantic Network Management
Andrew Wilmott, POL	- Director POL
Simon Holgate, PSMSL	- Permanent Service for Mean Sea Level Aspects
Philip Knight, POL	- Web Management
Lesley Rickards, BODC	- Tide Gauge Data Sets
Dave Smith, POL	- Leader Tide Gauge Inspectorate
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.

Foreword

The UK National Tidal & Sea Level Facility (NTSLF) was established in 2002 to reflect the importance of national sea level monitoring to the public and to government, as well as to the academic community. It brings together various sea level activities within the Proudman Oceanographic Laboratory (POL) and the British Oceanographic Data Centre (BODC) in collaboration with other groups having 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 and the papers presented there will be published in a special volume of Philosophical Transactions Series A during 2005.

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 littoral 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 Dependent Territories of the South Atlantic and Gibraltar; it is supported by the skills of BODC in data processing, quality control and dissemination. It is this unique skills base that qualifies the NTSLF to provide technical expertise to a wide community, and supply data with a range of practical and scientific applications. These include tidal prediction, flood warning, navigation, the determination of extreme sea levels for coastal engineering design, and climate change studies.

All data are readily accessible, free of charge, via our web pages. We are keen to promote maximum knowledge transfer in order to demonstrate value for public money channelled through the Natural Environment Research Council (NERC). This report contains a summary of the activities of NTSLF for the period January-December 2003.

Quality checked tide gauge data from January 1980 onwards are now freely available for download via the NTSLF web site. Work to make available data prior to 1980 will be complete by the summer of 2005. Data requests to BODC have increased almost four-fold (800 requests in 2003) since the creation of NTSLF and the web interface. The volume of data requested has also increased. The same web site provides up-to-date information on the status of key networks, recent technological developments and scientific contributions, products for tidal analysis and prediction, and real-time numerical model forecasts and tide gauge data.

Over the next two years, the tide-surge models that are used to forecast storm surges for the Environment Agency will be considerably enhanced. These models are run in real-time as part of the suite of models at the Met Office, producing four forecasts per day up to two days ahead. Developments include a high-resolution (3.5 km) model of the Celtic Sea, Irish Sea, North Sea and English Channel with improved surge boundary conditions, and data assimilation from strategic tide gauges.

We would like to acknowledge the support of all those who contribute scientifically towards, make use of, and fund the NTSLF. The Department for Environment, Food and Rural Affairs (Defra) has for many years funded the UK National Tide Gauge network: as of 1 January 2005 funding for the network will come from the Environment Agency to reflect the critical importance of real-time monitoring to operational flood warning.

Dr Kevin Horsburgh
Chair of NTSLF