



The Permanent Service for Mean Sea Level (PSMSL): 85 years of providing sea level measurements

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The Permanent Service for Mean Sea Level (PSMSL) was established as a “Permanent Service” of the International Council for Science (ICSU) in 1958, but in practice was a continuation of the Mean Sea Level Committee which had been set up at the Lisbon International Union of Geodesy and Geophysics (IUGG) conference in 1933. 85 years on, the PSMSL continues to be the internationally recognised databank for long term sea level change information from tide gauge records. The PSMSL operates under the auspices of ICSU, is a regular member of the ICSU World Data System and is associated with the International Association for the Physical Sciences of the Oceans (IAPSO) and the International Association of Geodesy (IAG). The PSMSL continues to work closely with other members of the sea level community through the Intergovernmental Oceanographic Commission’s Global Sea Level Observing System (GLOSS), and is based in Liverpool at the UK’s National Oceanography Centre (NOC). Here, we present a review of the past, present and future of the PSMSL.

The PSMSL dataset consists of over 2300 mean sea level records from across the globe, some of which date back to the early 19th century. In a typical year, data is received from about 60 suppliers covering roughly 80 countries. The PSMSL dataset is freely available for all to use, and can be obtained at the PSMSL website (www.psmsl.org). We review the historical development of the dataset and highlight some of the recent developments in the global tide gauge network.

We also describe efforts made to modernise the methods and data models used to store and distribute metadata about the tide gauge records with the aim of providing information that properly describes the history of sea level measurement at a site using interoperable, internationally agreed standards.