



IHB File No S3/2705

**CIRCULAR LETTER 04/2012  
09 January 2012**

**HISTORIC TIDE GAUGE DATA IN NON-DIGITAL FORM IN NEED OF RESCUE**

Reference: CL 48/2009 dated 7 July 2009

Dear Hydrographer,

1 The Tides and Water Level Working Group (TWLWG) cooperates closely with the Global Sea Level Observing System (GLOSS) of the Intergovernmental Oceanographic Commission (IOC) of UNESCO with representation at each others meetings.

2 One area of common interest is the study of changes in sea level. An essential element in any such study is the availability of long term tide gauge records. Many of these historic records are in paper format and may be lying in corners of offices and largely forgotten about. In 2001 GLOSS initiated a request to recover these records. This was successful, as can be seen in the annex, however GLOSS is still of the opinion that many records remain outside their database and have requested IHO support in recovering data wherever possible. This matter was previously brought to the attention of Member States in paragraph 3 of the reference which reported on the outcome of the 11<sup>th</sup> meeting of the GLOSS Group of Experts.

3 At its 12<sup>th</sup> Meeting in November 2011 GLOSS decided to make a further attempt to recover further missing data and issued the letter at Annex A. Member States will be aware of the importance of the study of sea level change and are requested assist GLOSS in the recovery of this data wherever possible.

On behalf of the Directing Committee  
Yours sincerely,

Vice Admiral Alexandros MARATOS  
President

Annex A: Request from the GLOSS Group of Experts of IOC

December 2011  
From: GLOSS Group of Experts  
To: GLOSS country contacts  
Subject: Request for Information:  
Inventory of Sea Level Data in Need of Rescue



Dear GLOSS colleague,

In 2001, the Global Sea Level Observing System (GLOSS) and the International Data and Information Exchange program (IODE) developed an inventory by means of a questionnaire to GLOSS and IODE contacts for information about historic tide gauge data in non-digital form and in need of rescue. Reports from the 2001 endeavor are given at [www.gloss-sealevel.org/data](http://www.gloss-sealevel.org/data). In total, rescued hourly data since 2001 have extended 91 tide gauge series backwards in time for 1,411 years, and subsequently, the quality-controlled versions have been ingested into GLOSS data centers.

At the 12<sup>th</sup> session of the GLOSS Group of Experts (GLOSS GE XII, 7-11 November, 2011, Paris), the topic of rescue of tide gauge data in non-computer form (charts, tabulations, etc.) was discussed. It was noted that a large amount of historic data remain in paper form and have been identified in non-oceanographic facilities such as the US National Archives and the French Prefecture Archives. The mostly paper-based tide gauge data sets are of potential great value to the sea level community in a range of applications including the extension of existing sea level time series as far back as possible in order to understand more completely the time scales of sea level change. The GLOSS GE XII recommended an update to the 2001 inventory. The goal is to seek support from funding agencies for rescue by detailing the vast amount of known non-electronic data. Greater exposure of the inventory will be possible through the GLOSS collaboration with the Data At Risk Task Group of the Committee on Data for Science and Technology (CODATA) of the International Council for Science (ICSU).

On behalf of the GLOSS GE, we would like to ask for your support in furthering the inventory of historic, non-digital tide gauge data. If your agency/institute/facility holds historic sea level data in non-computer form, could you please fill in this questionnaire? If you are aware of other facilities in your country that have such non-digital tide gauge records, could you please give us contact information? We are most thankful to those who responded to the 2001 questionnaire. If select questions of the new questionnaire have already been answered, please reply by stating "see 2001".

Please send comments, questions, contacts for additional historic data, and/or the completed new questionnaire by May 1, 2012 to Mr. Patrick Caldwell, University of Hawaii Sea Level Center (UHSLC). See contact information below.

It is preferred to receive an electronic copy of your responses to this questionnaire. Thank you in advance for your support.

Sincerely,

Dr. Gary Mitchum  
GLOSS Chair

Dr. Thorkild Aarup  
Technical Secretary for GLOSS

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# **Request of Information: Inventory of Sea Level Data in Need of Rescue**

Please complete the following questionnaire and return the electronic document to Mr. Patrick Caldwell, University of Hawaii Sea Level Center, [caldwell@hawaii.edu](mailto:caldwell@hawaii.edu) by **May 1, 2012**.

## **General Questions**

1. Please provide the name of facility/agency/institute/office/department/organization/etc. (referred to as “agency” below) where non-computerized data reside. Include a contact name and email address. For multiple choice questions below, please place an X in front of the letter(s) as your response and/or describe.

2. Please indicate what media the data are stored on?

- a. Paper
- b. Microfiche
- c. Film
- d. Other, please explain?

3. What is the overall condition of the media?

- a. All are in good condition
- b. All are near non-readability
- c. Other, please describe:

4. Are there multiple copies?

- a. No, only one copy and it resides here
- b. Yes, copies also reside at (name of location):
- c. In the past, are you aware if copies were sent to a hydrographic agency or other tide facility in order to produce tidal predictions, if so, where?

5. For each tide gauge station (option A: cut and paste this section for each site, or option B: do this section once if most answers are the same for all stations, though please give time spans specifically for each station, and point out where there are different answers depending on the station)

- a. Station name and location? Are maps of station location in harbor available?
- b. Time span of non-digital data and list of major missing data periods (~years)?
- c. Form of tide data (analog pen trace on charts, tabulated hourly values, high and low tides, etc.)? (For charts, please give chart manufacturer, size, scale factor, and replacement frequency)
- d. Clearness of pen ink, height markings, scale factor, calibration points, date/time stamps? - good or bad, explain
- e. Type, make, and model of tide gauge?
- f. Why were the data collected (hydrography, tide predictions, etc.)?
- g. Are tide staff (pole) readings available, if so, how often made?
- h. Are other notes on station maintenance available (clock checks, etc.)?
- i. Were ancillary parameters recorded, such as water temperature or salinity?
- j. Are historic geodetic surveys available?

k. Are or can the benchmarks be linked to the existing benchmark network?

6. What is the overall volume of the holdings? (number of boxes, number of rolls each X by Y dimension, etc.)

7. Are there any plans by your agency or other (please name) to rescue these data into computer ready form, if so, on what time line?

8. If funding were available for photocopying (or making digital camera images) and postal charges, would your agency allow observations to be made available through a GLOSS data center?