

Report to the 12th Session of the IOC Group of Experts On the Global Sea Level Observing System(GLOSS)

China National Sea Level Network

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1. The China national network of sea level observation

The China national network to observe sea level was maintained by State Oceanic Administration (SOA). It consists of many stations which include the thirteen key stations (Laohutan, Qinhuangdao, Tanggu, Yantai, Shijiusuo, Lianyungang, Lusi, Kanmen, Shanwei, Zhapo, Beihai, Haikou and Dongfang) and other basic stations around China. Float operated gauges are installed in each station. Six stations of them have been registered in GLOSS Core Network and the detail information about them is showed in Table 1.

2.Data processing

Data is collected, banked and updated by National Marine Data and Information Service (NMDIS), which maintains the quality controlled data output from these stations for use in tidal analysis, prediction, service and research. Data retrieved is subject to extensive quality control procedures on a regular basis, which reformat from old data formats, check for timing errors, remove spikes, identify data gaps, compile benchmark details and datum information, etc. All observed and derived data output from these stations is provided by NMDIS based on some special regulations.

3. In recent years, SOA is focus on the follow aspects about sea level:

- Modifying the China sea level observed network
- Observing the vertical land motion at each tide gauge locations of the China sea level observed network
- Checking the historical variation of benchmark at every tide gauge
- Participating in international cooperation planning in marine field actively such as GLOSS, NEARGOOS, ODINWESTPAC and so on. Established China NEARGOOS database website and ODINWESTPAC service website. Published China coastal observation data and other data processed by NMDIS. The website: <http://near-goos.coi.gov.cn> and <http://www.odinwestpac.org.cn> .
- Setting up the system of impact assessment upon sea level rise
- Stressing sea level variation study

SOA has released the “China Sea level Bulletin” each year since 2006 which shows that SOA reinforced the work with regard to the sea level, modified the China sea level monitoring network and started the impact assessment of sea level rise, as well as the operational system construction.

4. China coastal sea level rise

In April 2011, SOA release the “China Sea level Bulletin , 2010” . The results indicate that, the sea level of China showed a general trend of continuous rising. Average rate of the SLR was 2.6mm/year. In the last 30 years, the decadal sea level along China's coast was clear upward trend. Since 2001, the overall sea level along China's coast at historically high levels. From 2001 to 2010 the average sea level was 25 mm and 55 mm higher than the average from 1991 to 2000 and that from 1981 to 1990. Regional characteristics indicate that the SLR in the coastal areas of the Tianjin, Shandong, Jiangsu and Hainan was obviously higher than the other sections. Under the background of the global SLR caused by global warming, local land surface subsidence and abnormal climatic events were the main causes resulting in the change of coastal sea level of China in 2010. SLR intensifies such marine disasters as windstorm surges, coast erosions, sea water intrusions, soil salination and saline tides, etc. and in a way of different degrees affects flood prevention and drainage systems of cities in the coastal areas. It is predicted that in the future 30 years, coastal sea level of China will continue to rise, rising by 80-130mm relative to 2010. The Yangtze River Delta, the Pearl River Delta, the Yellow River Delta and coastal areas of Tianjin will still be the main fragile zones under impacts of SLR.

Table 1: Status of GLOSS Stations in China

	Location	Status
1	Laohutan 38-52N, 121-41E	<ul style="list-style-type: none"> • Ongoing, currently using a digital gauge • The period of record spans from Jan 1980 to now. • Hourly height data from Jan 1975 to Dec 1999 has been sent to UHSLC and PSMSL. • Monthly MSL data from Jan 1991 to August 2011 has been sent to PSMSL.
2	Lusi 32-08N, 121-37E	<ul style="list-style-type: none"> • Ongoing, currently using a digital gauge • The period of record spans from Oct 1959 to now. • Hourly height data from Jan 1975 to Dec 1999 has been sent to UHSLC and PSMSL. • Monthly MSL data up to August 2011 has been sent to PSMSL.
3	Kanmen 28-05N, 121-17E	<ul style="list-style-type: none"> • Ongoing, currently using a digital gauge • The period of record spans from Oct 1959 to now. • Hourly height data from Jan 1975 to Dec 1999 has been sent to UHSLC and PSMSL. • Monthly MSL data up to August 2011 has been sent to PSMSL.
4	Zhapo 21-35N, 111-50E	<ul style="list-style-type: none"> • Ongoing, currently using a digital gauge • The period of record spans from Oct 1957 to now. • Hourly height data from Jan 1975 to Dec 1999 has been sent to UHSLC and PSMSL. • Monthly MSL data up to August 2011 has been sent to PSMSL.
5	Xisha	<ul style="list-style-type: none"> • Ongoing, currently using a digital gauge. • The period of record spans from July 1990 to now. • No hourly height data in CNODC. • Monthly MSL data up to August 2011 has been sent to PSMSL.

6	Nansha	<ul style="list-style-type: none">• Data delayed for data transmit system problem• The period of record spans from June 1990 to July 2002.• No hourly height data in CNODC• Monthly MSL data up to August 2011 has been sent to PSMSL.
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