GRA Background Report

NEAR-GOOS

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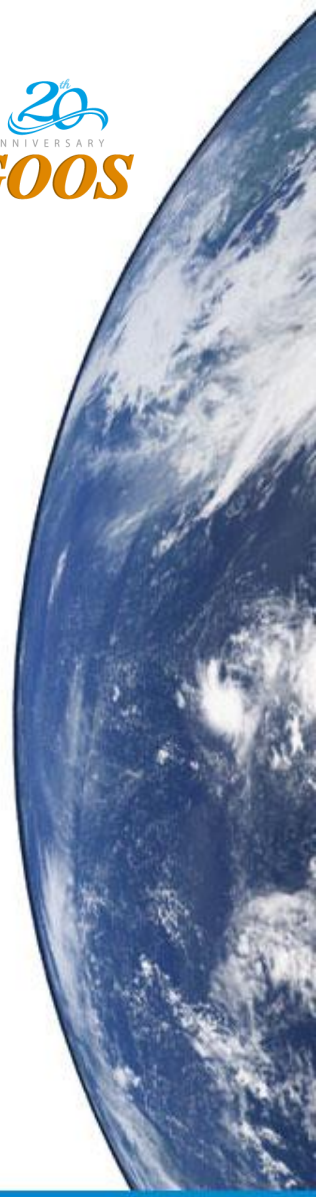
GOOS Regional Forum, 5-7 September 2017, Singapore



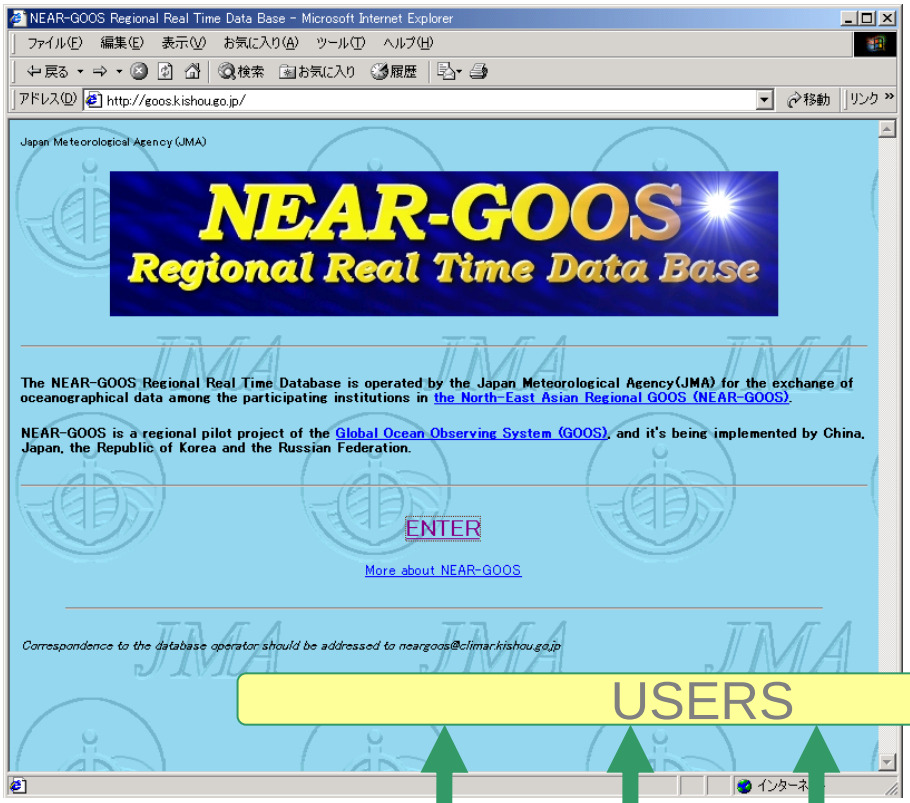
General information

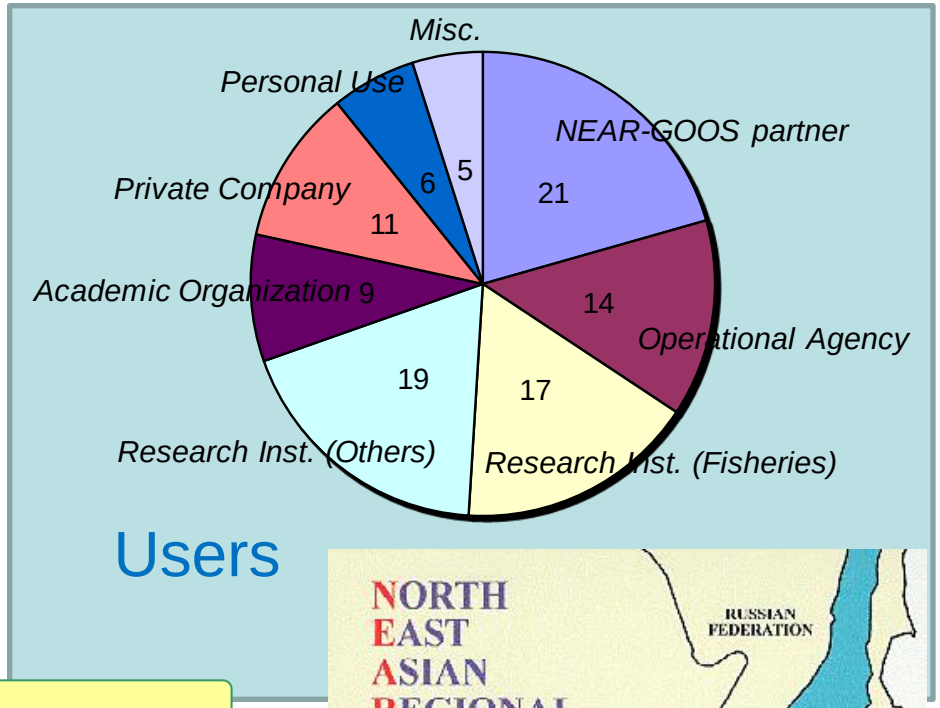
- **Type:** intergovernmental network
- **Funding characterization:** project funded
- **GRA leadership:**
  - chair: Vyacheslav B.Lobanov (date of election: Dec 9, 2015/ term: 2 years)
  - IOC/WESTPAC Coordinating Committee, 2 members from each country
- **Secretariat:**
  - Wenxi Zhu, Technical Secretary
  - Phone: +66 2 141 1287
  - Email: w.zhu@unesco.org
  - **website:** http://iocwestpac.org/north-east-asian-regional-goos/172.html
- **Membership:** China, Japan, Korea, Russia
- **Terms of Reference**: http://iocwestpac.org/north-east-asian-regional-goos/172.html
- **Meetings** (NEAR-GOOS CC)- annually
  - Past 2: Dec 8-9, 2015, Tokyo, Japan; Dec 15-16, 2016, Vladivostok, Russia, [link to reports]
  - Next: Nov 21-22, 2017, Beijing, China

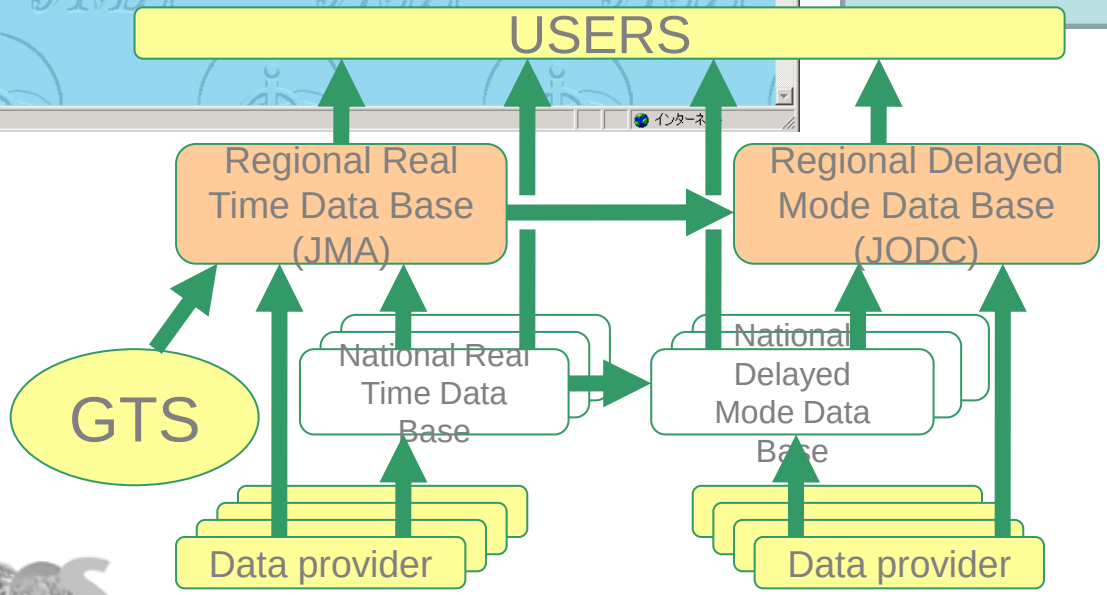
Successes

- Please insert up to 10 slides on GRA status and successes
- You might wish to cover…
  - **Project, Product or Observing activity description –** Identify the issue or need this activity addresses
  - **User Community:** Who cares and benefits from products?
  - **Process –** Describe the process that was used to establish the activity
  - **Outcomes/Results**
  - **Value added from advances in technology** (i.e. sensors, assessment tools, models, or process)

Initial Goal - Free and open access to Regional data bases







Coordinating Committee (as of Aug 2017)

- Dr. Ting YU (NMDIS, China),
- Dr. Zhihua ZHANG (NMEFC, China)
- Mr. Norio BABA (JODC, Japan)
- Mr. Masakazu Higaki (JMA, Japan)
- Dr. Hee-dong JEONG (NFRDI, Rep. of Korea),
- Dr. Heeyoon PARK (KHOA, Rep. of Korea)
- Dr. Vyacheslav LOBANOV (POI, Russian), *Chair*
- Dr. Oleg SOKOLOV (FERHRI, Russian)

Implementation of NEAR-GOOS Initial Goal (1996-2002)

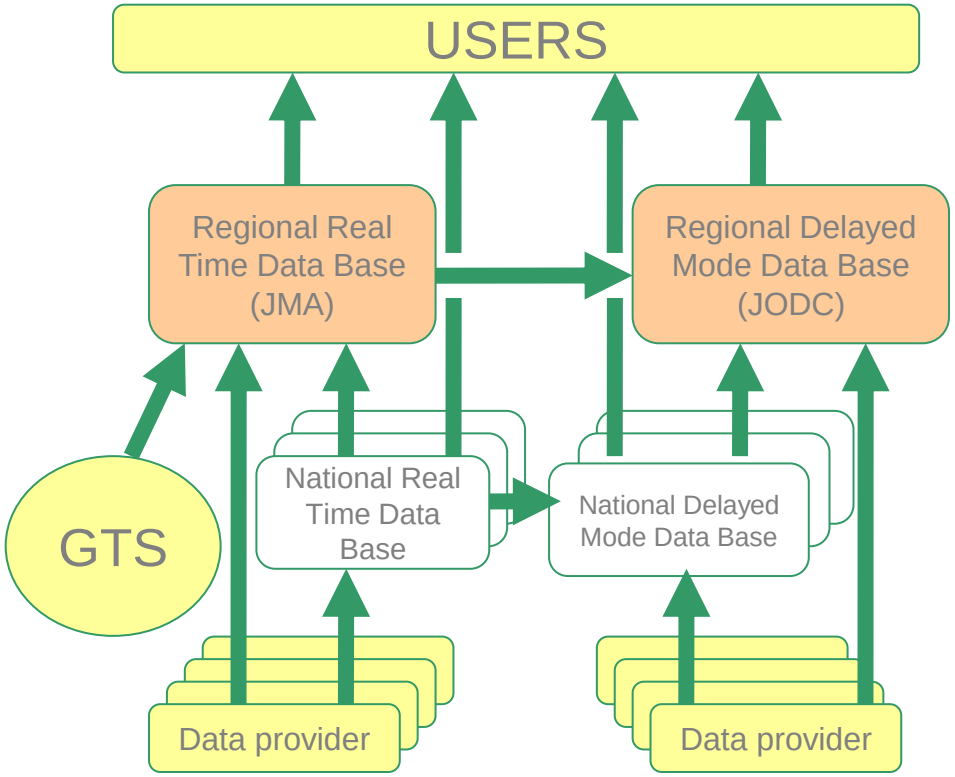
Goal:

- *to facilitate the sharing of oceanographic data in the region*

Achievements:

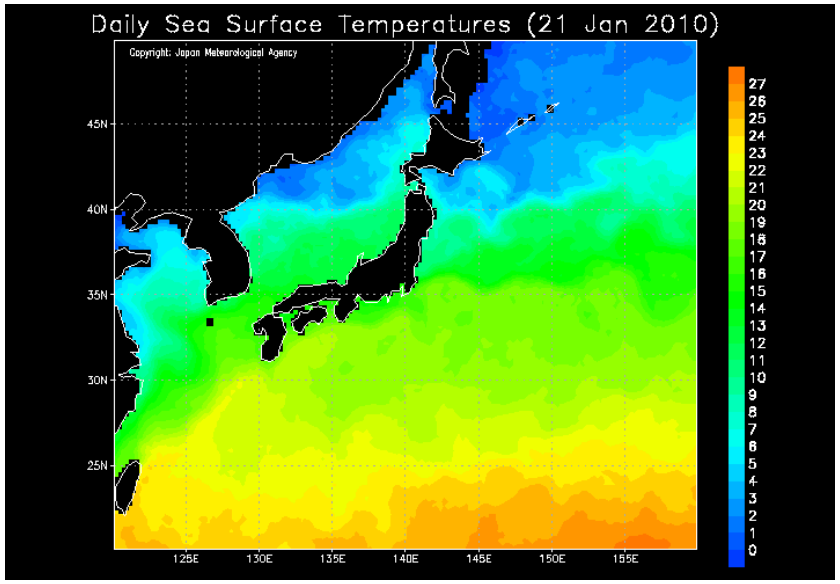
- Consolidation of the Regional Database System: functional two-mode structure based on internet.

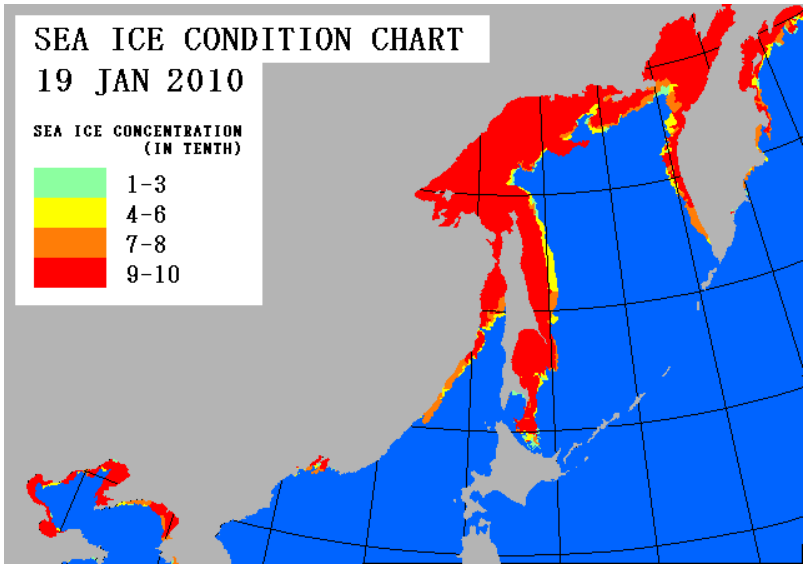
- Adoption and practice of a free and open data exchange

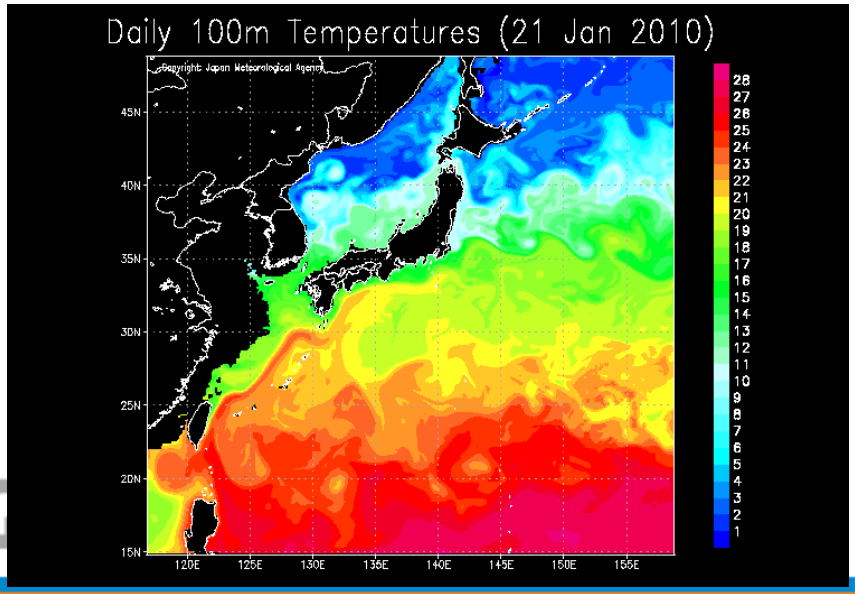


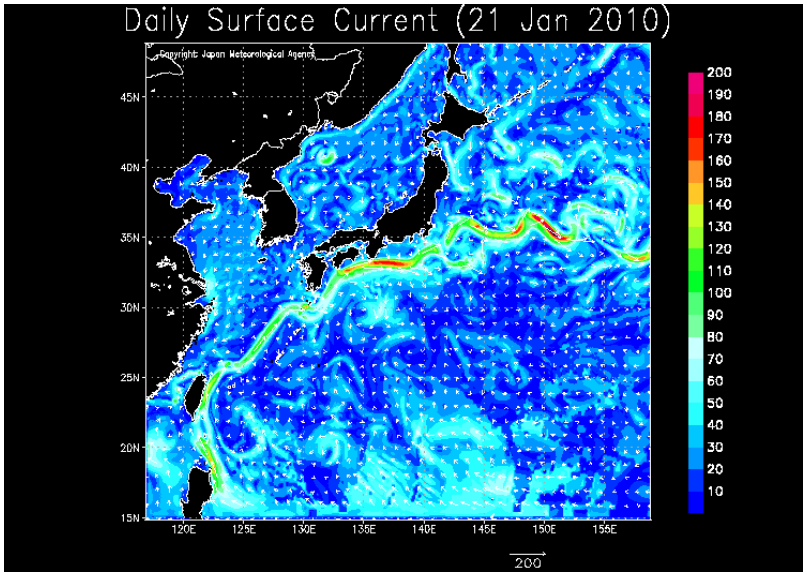
JMA (RRTDB) products

Daily, 10 days and monthly Sea Surface Temperature (MGDSST) SSH, subsurface T, sea ice, surface currents









Current Regional Delayed Mode Data Base (RDMDB) Contents

- RDMDB contains 59 (44)* types of data (June 2017)

  (1) 51 (41) types from RRTDB
  GTS, NRTDB and other organizations, JMA products

  (2) 8 types from other source
  “vosnippon” ,"30s_TIDEST", "NOWPHAS" and "Tohoku Univ".

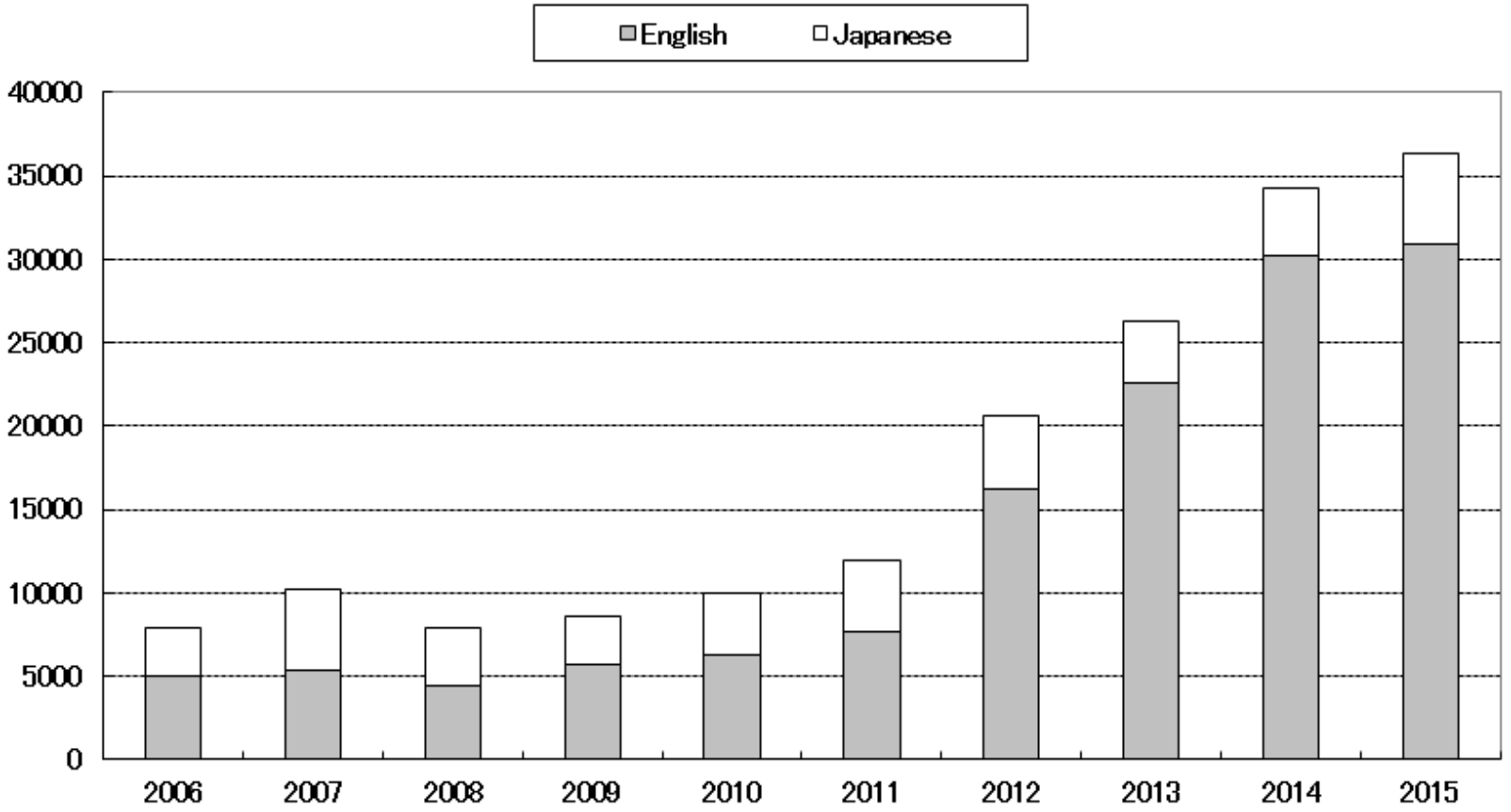
  (3) Following new items are now available on RDMDB “vosnippon”:
  Sea surface temperatures and salinities data from NPO
  “VOS Nippon” (the data provided by Asia and the Japan Australia voluntary observation vessels)
  JMA’s products: JMA’s real-time products are re-analyzed and replaced.

- The data volume of RDMDB is totally 197 GB (170)

  Data volume has increased by 27GB for the past 2 years.
  The total file size of “vosnippon” is about 981MB (800).

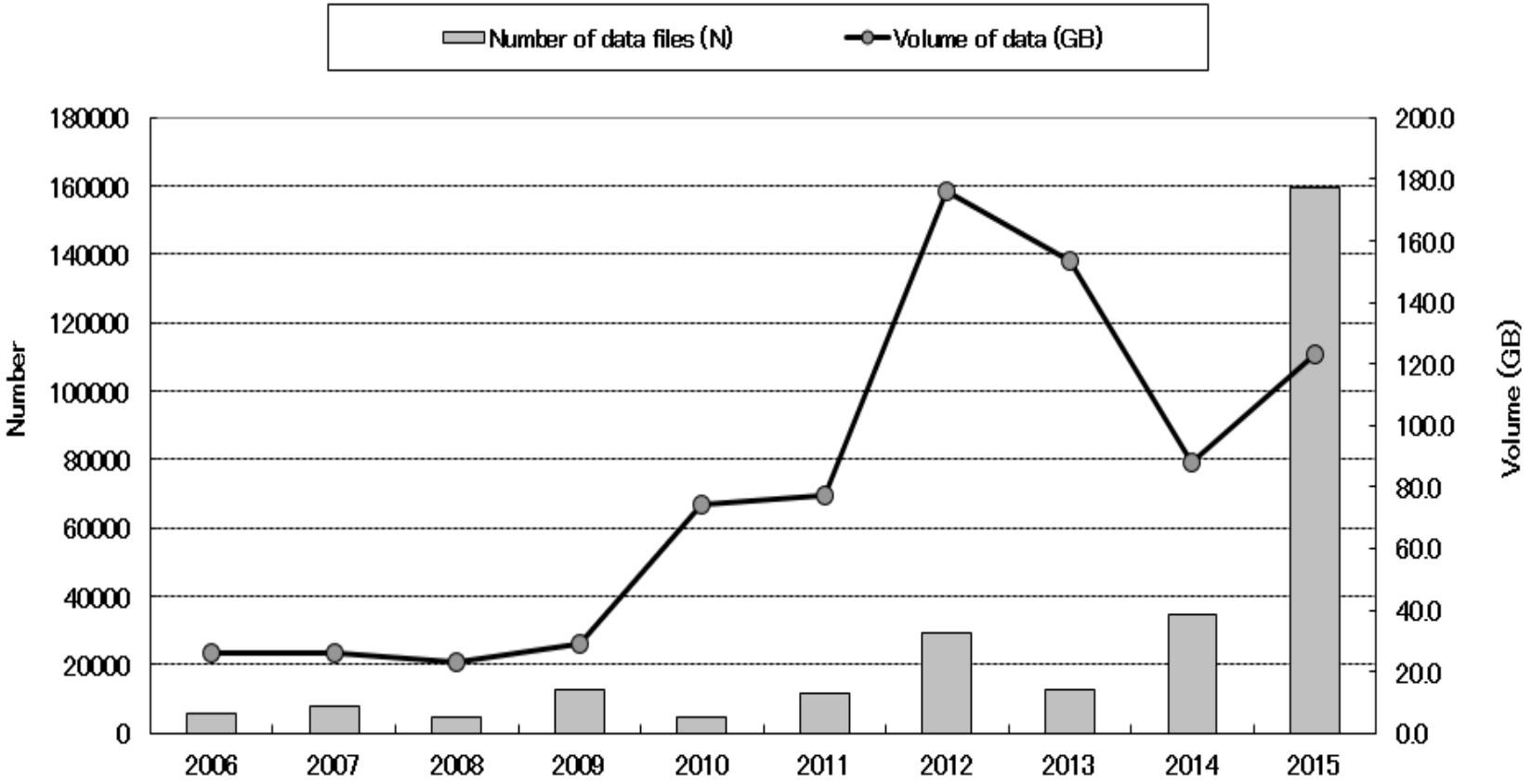
* Blue color – data for 2015

Annual variation of the number of hits on English and Japanese top pages of RDMDB website



The number on the Japanese top page is constant level around 3,000 to 5.000 a year since 2006. The number on the English top page in 2015 was counted maximum number of 30,883 in the past years.

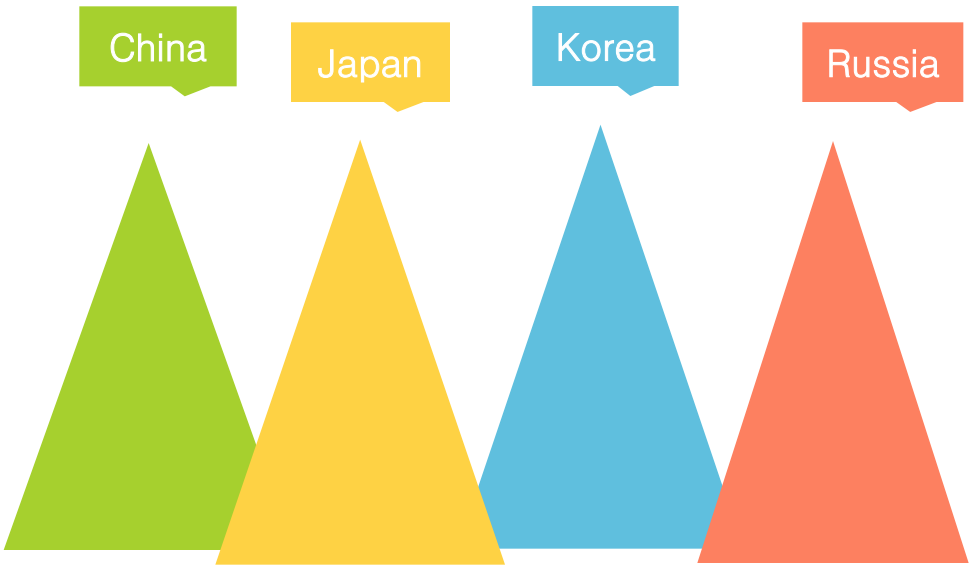
Annual variation of the number and volume of downloaded data files from RDMDB



About 159,626 files and 122.8GB data were downloaded from RDMDB in 2015.

About 34,751 files and 87.9GB data were downloaded from RDMDB in 2014.

Status of NEAR-GOOS National Databases



China delayed mode database:
http://near-goos.coi.gov.cn/
China real time database:
http://neargoos.nmefc.gov.cn/

Korea delayed mode database:
http://kodc.nifs.go.kr/page?id=eng_index
Korea real time database:
http://www.khoa.go.kr/koofs/eng/observation/obs_real.do

Regional delayed mode Database
http://near-goos1.jodc.go.jp/
Regional real time database
http://ds.data.jma.go.jp/gmd/goos/data/database.html

Russian delayed mode database:
http://pacificinfo.ru/neargoos/?show=catalogue&org=POI&orgs=Select
Russian real time database:
http://rus.ferhri.ru/esimo/Projects/Neargoos/

Concerns

- Data management system
  - Restrictions of data exchange (on national and international levels)
  - Limited number of parameters and gaps in the areas
  - QC/QA

- Coordination mechanism
  - Lack of strong coordination in some countries
  - Lack of coordination of NDB by RDB
  - CC is not effective as a steering committee – not many experts are involved

- Visibility and recognition
  - Not of high level

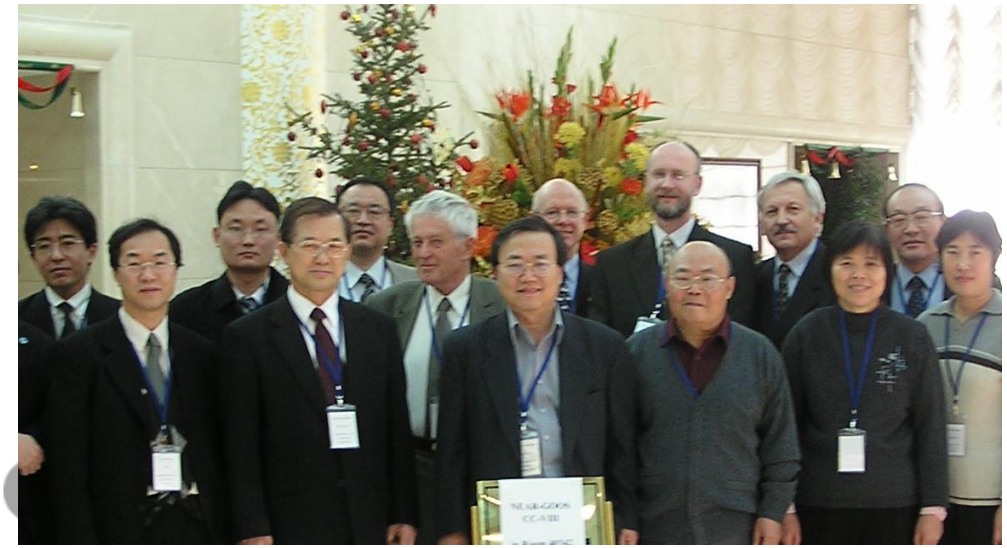
- Funding status
  - Lack of financial support

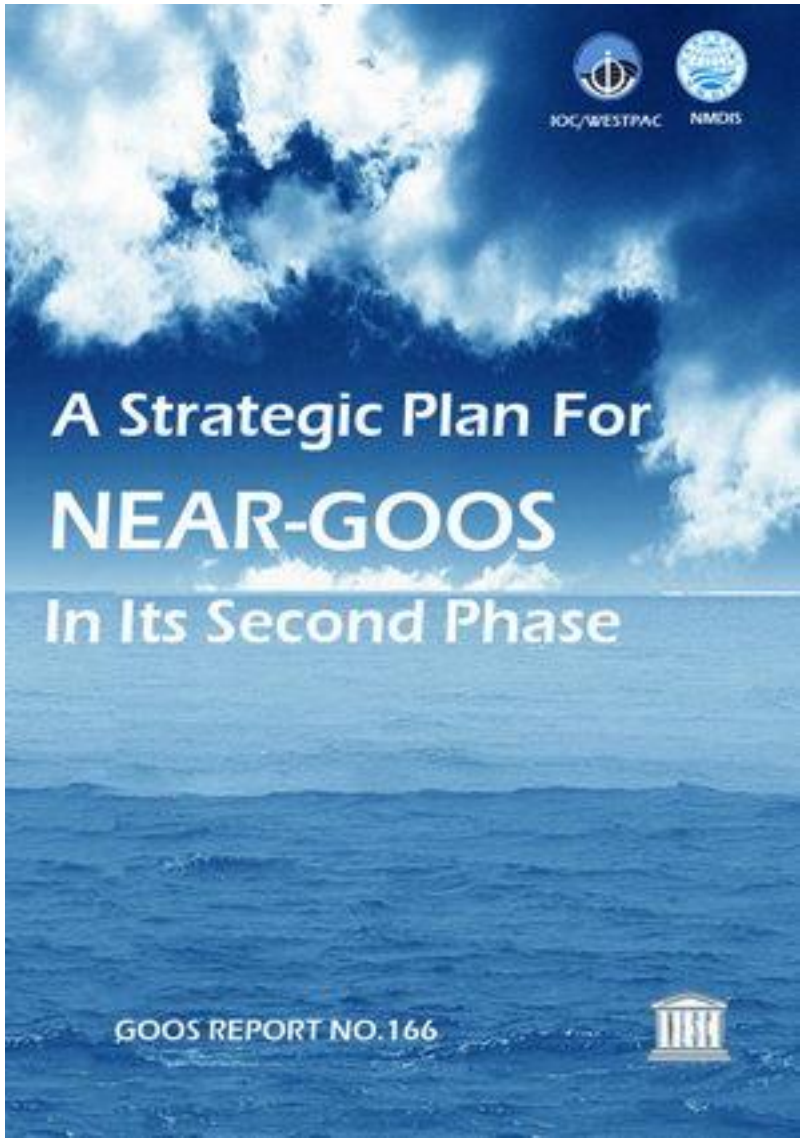
2nd Phase of NEAR-GOOS

Dec 2003, Beijing, China, 8th CC Meeting

From pilot experiment *toward* sustained regional monitoring system

- *adoption of the Strategic Plan (Nov. 2004),*
- *first actions toward its implementation*





Vision of the NEAR-GOOS 2nd Phase

- systematic observations and associated research,
- operational system that brings products and services that meet the needs of users,
- providing information on the past, present and future
- of marine environment, ecosystem and climate.

The Mission

'To develop a comprehensive and sustained ocean observing network in the North-East Asian regional seas and coastal regions, especially focussed on observations, monitoring and other activities that cannot be easily implemented by countries acting independently.

This network will embrace a wide range of data types and will be accompanied by pilot observing experiments, trials and demonstrations, training and useful products for use by the participating members and as a contribution to the GOOS and other global observing initiatives.'

NEAR-GOOS Working Groups

- WG on Data Management

- to improve NEAR-GOOS data bases networking system (QA/QC, data inventories, standard formats etc.)

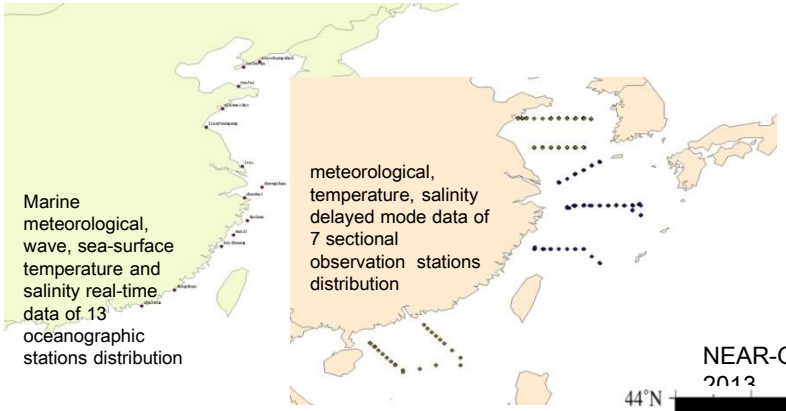
- WG on Products

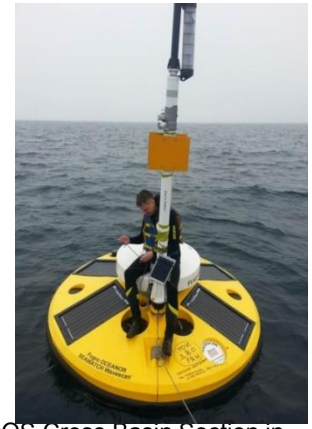
- to improve the NEAR-GOOS products in a comprehensive manner. Complete the user analysis and discuss necessary actions.

- WG on Ocean Forecasting Systems

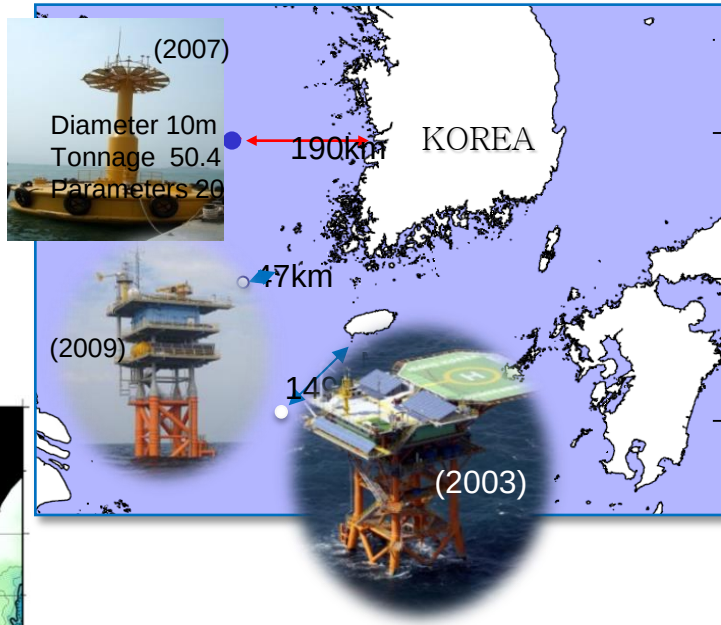
- to enhance an efficiency of the existing forecasting capability in the region and cooperation between national operational forecasting systems

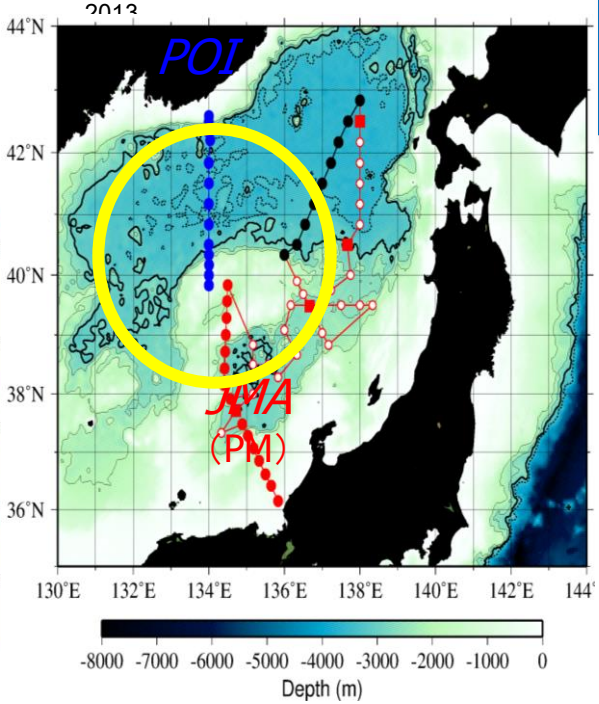
NEAR-GOOS Pilot Projects

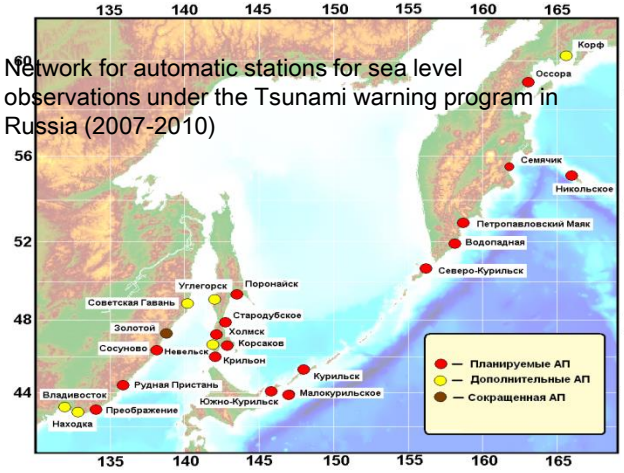




NEAR-GOOS Cross Basin Section in 2013







Network for automatic stations for sea level observations under the Tsunami warning program in Russia (2007-2010)

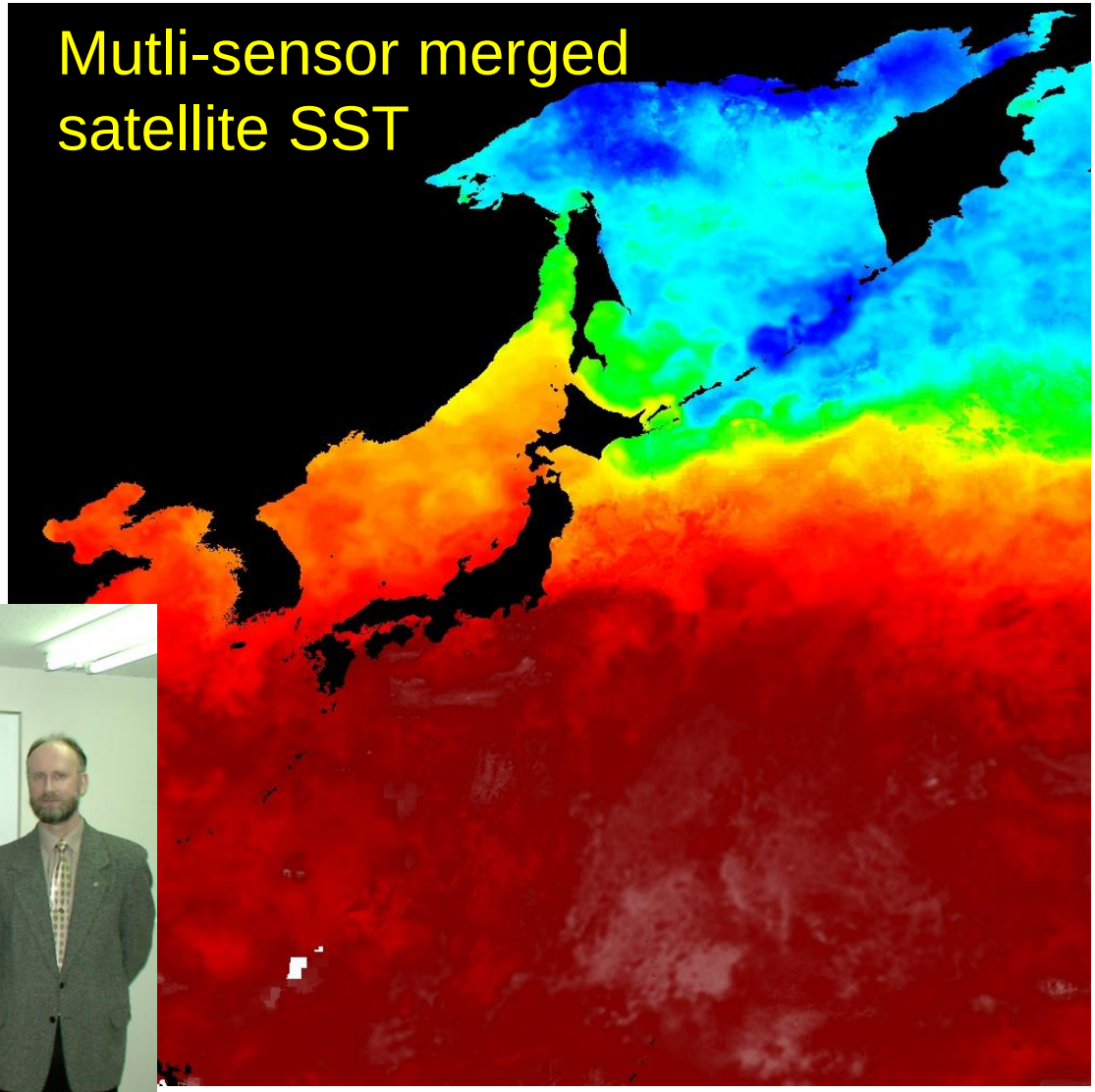
Development of regional observing system

Pilot project 1: New Generation Satellite SST

(2001-2008)

quality-controlled,
cloud-free
Since Oct. 2003:
4 km, daily
A regular product as MGDSST by JMA since 2006

H.Kawamura, U.Tohoku, Japan



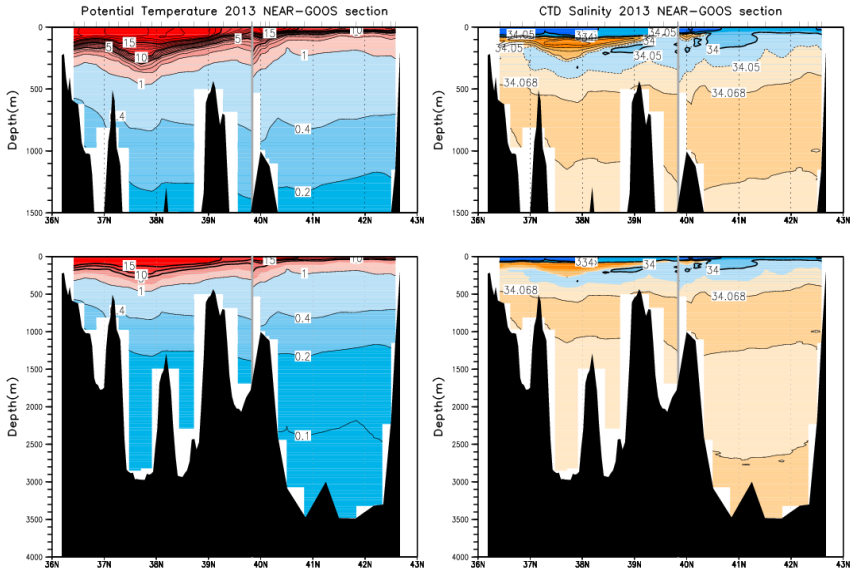
http://www.ocean.caos.tohoku.ac.jp/~sst/ngsstp/index.html

Pilot Project 2: Cross Basin Climate Monitoring Section

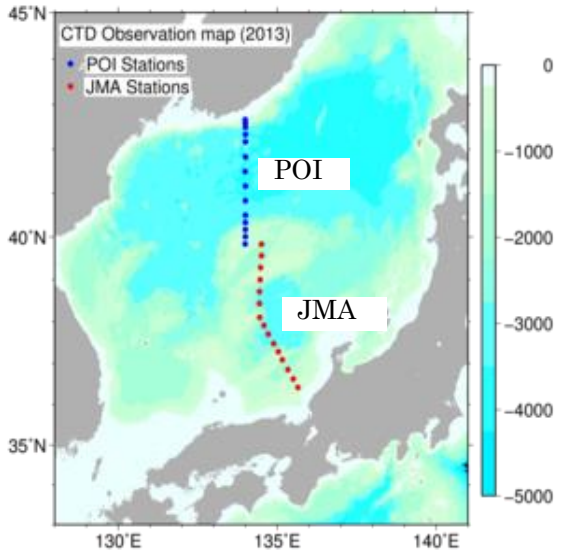
(since 2011)

- Observation period 2011-2016:
  - Late October-early November
  - JMA, Japan and POI, Russia

- Observed elements:
  - CTD & water sampling down to the bottom
  - Parameters observed:
    - Temperature, Salinity,
    - Oxygen, Nitrate, Nitrite, Silicate, pH,
    - Total inorganic carbon, Alkalinity



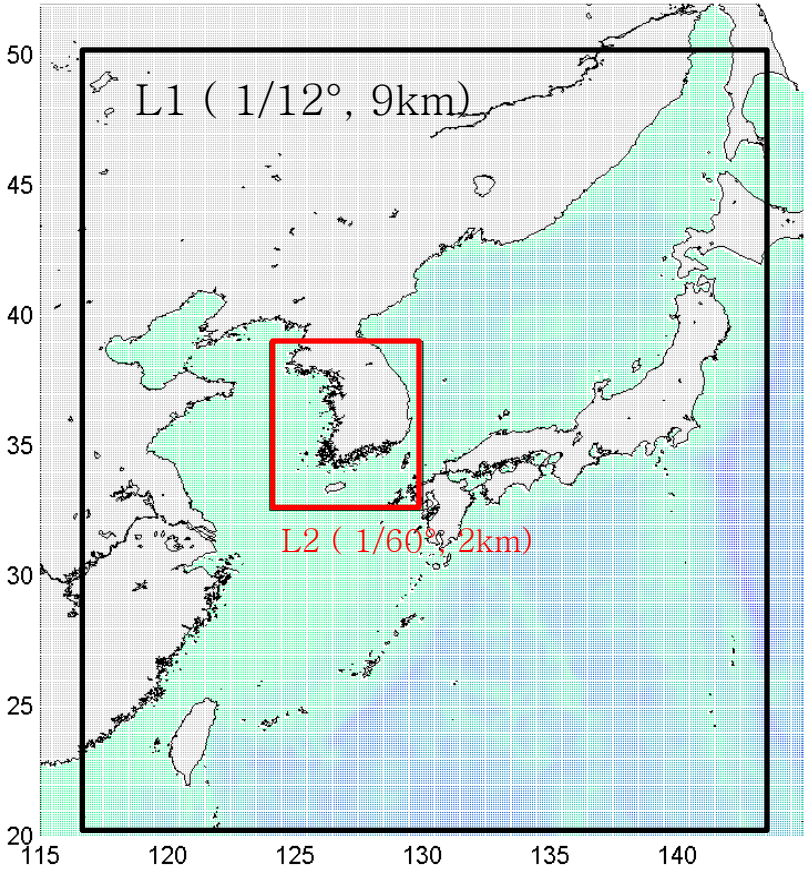
http://goos.kishou.go.jp/rrtdb/cross-section/cross-section.html



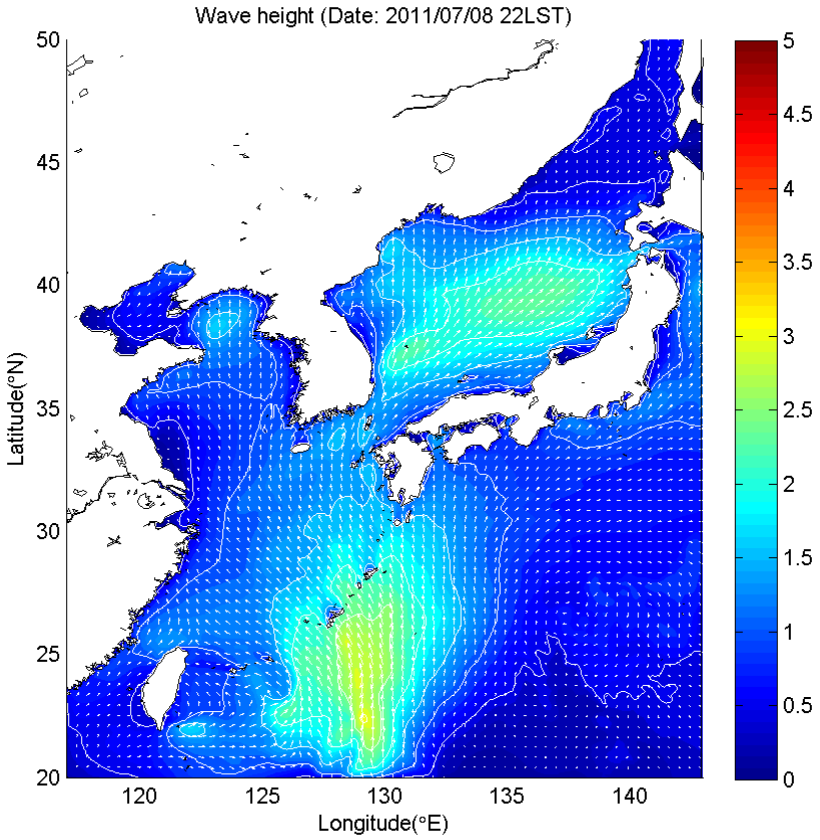
Pilot Project 3: Regional Operational Ocean Forecasting System

(since 2017, initiated by KIOST)

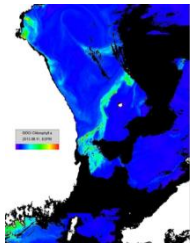
Model Domain

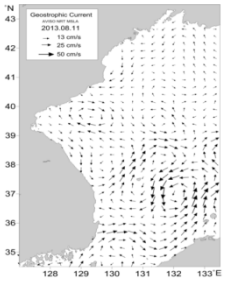


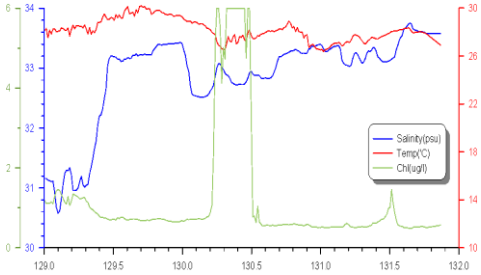
Operational WAM

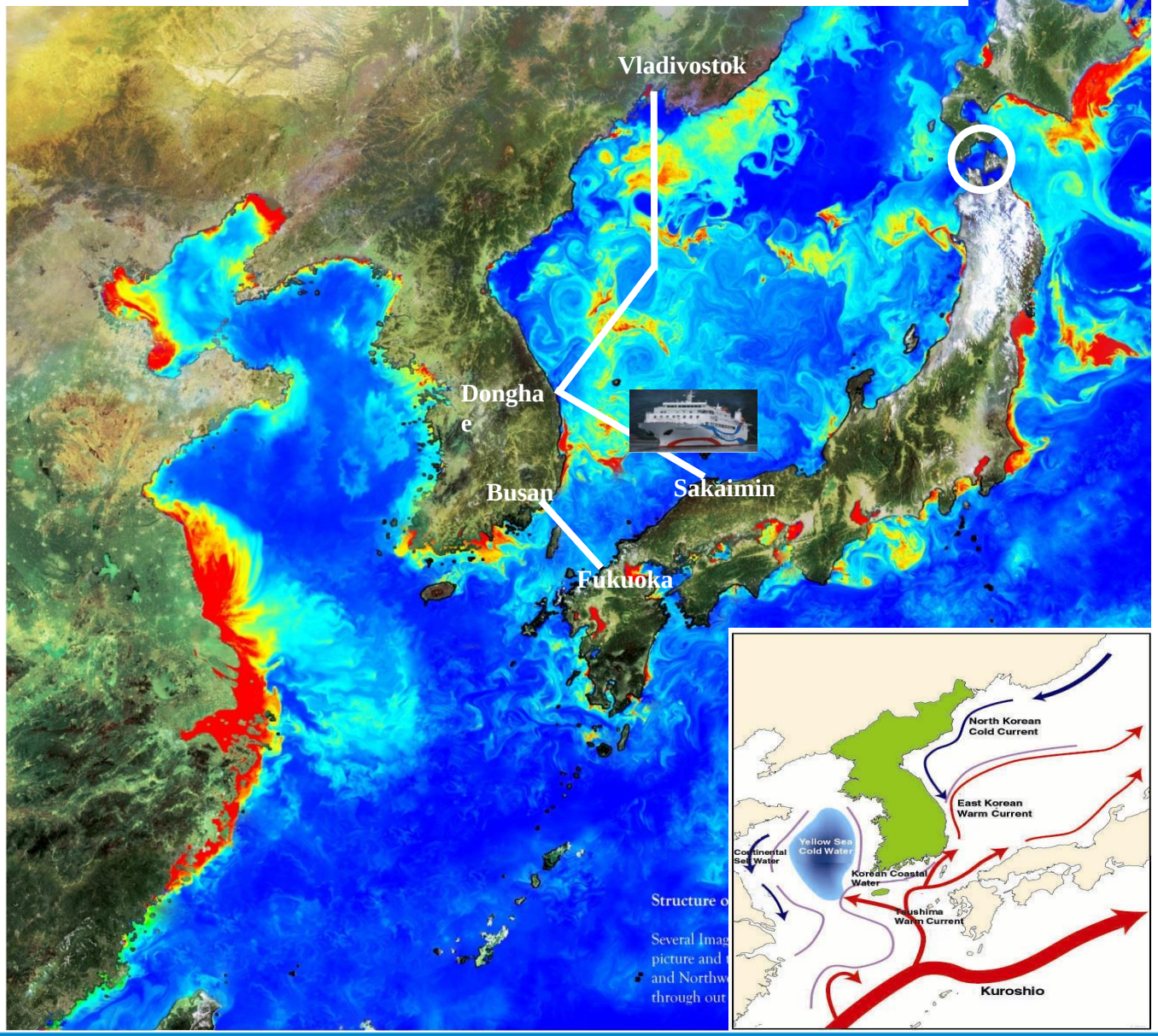


Pilot Project 4: Ferry based monitoring
(since 2011)









Challenges

- Requirement to provide more products and services to meet the needs of end users rather than basic oceanographic information (end-to end observing system)

  - contradicts with initial idea of NEAR-GOOS as free data provider , products need more funding…

- More data for ecosystem and coastal management.

  - coastal observations are mostly done by national observing systems, how to keep project as an international collaboration?...

Opportunities to work across regions- Future plans

1. Increase of a visibility and a funding status of the project. Take necessary actions to stress t he importance of NEAR-GOOS to all its member countries, keep close communications with th eir national delegations to IOC, briefing them of the importance of NEAR-GOOS and suggestin g them engaging in the debate at the IOC Sessional Financial Committee meeting on the IOC Biennial Program and Budget, in order to increase financial support for NEAR-GOOS activity.

2. Increase an efficiency of the NEAR-GOOS data bases. Recognizing the importance of data quality assurance and quality control (QA/QC) process conducted for the NEAR-GOOS data e xchange system, the communications and interactions among Regional databases and nationa l databases and especially a leading function of two Regional data bases should be enhanced. Accessibility of national data bases should be also enhanced. In particular it is necessary to up grade China national NEAR-GOOS Real Time Database (by early 2017), to start operation of n ew Korea National Delayed Mode Database (early 2017), to improve two Russian databases in 2017.

3. Enhance an activity of the NEAR-GOOS Working Group on Products with the goal to improv e the NEAR-GOOS products in a comprehensive manner. Complete the user analysis and disc uss necessary actions.

Opportunities to work across regions- Future plans-2

4. Implement an activity of NEAR-GOOS Working Group on data management to improve NEAR-GOOS data bases networking system. The WG shall focus on two major activities ov er the next inter-sessional period: i. collection of QA/QC technical manuals, protocols or pla ns used by each Database, and conduct, if time allows, relevant technical analysis towards the development of a standard format for all data in the NEAR-GOOS data exchange syste m; ii. Development an inventory for all data and products in NEAR-GOOS data exchange sy stem.

5. Implement an activity of just formed NEAR-GOOS Working group on Ocean Forecasting Systems to enhance an efficiency of the existing forecasting capability in the region and coo peration between national operational forecasting systems. It is planned that towards the de velopment of NEAR-GOOS Ocean Forecasting Systems, i. the geographic coverage of NE AR-GOOS Ocean Forecasting Systems shall refer to the NEAR-GOOS region; ii. forecast p arameters at this initial stage shall be focused on circulation, temperature, wind and wave; ii i, four technical task forces shall be formed on these parameters respectively, with one cou ntry volunteering to lead one or more task forces.

6. Continue NEAR-GOOS Climate Monitoring Section as a pilot project implemented by JM A (Japan) and POI (Russia) with aim to understand long-term variability of the water mass s tructure cause by climate change in the region since 2011. To keep the Committee and the WESTPAC Office informed of their activities in order to enhance the visibility of this pilot pro ject and generate more impacts.

Opportunities to work across regions- Future plans-3

7. Continue development of regional observing capacity through the improvement of the national observing systems as well as communication of operational data when it is possible.

8. Expand NEAR-GOOS pilot projects activity. To implement the NEAR-GOOS strategy in its second phase to engage wider observation communities and provide information available on the past, present and future of marine environment, ecosystem and climate it is planned to encourage strongly all members to reach out to their observation communities with a view to developing more pilot projects within the framework of NEAR-GOOS.

9. Enhance communication with other GOOS Regional Alliances (GRAs) and took participation in the activity of the GRAs including presentation of the NEAR-GOOS at the 8th GOOS Regional Forum (September 2017, Singapore)

10. Strengthen collaboration with other regional and organizations and programs (e.g. PICES, PAMS, others). Prepare presentations on NEAR-GOOS activity and plans, organize joint sessions, workshops, training courses etc.

Conclusion

1. NEAR-GOOS has established a sustained international data exchange system that provides useful information for oceanographic community. Even some problems of easy and fast international data exchange still exist the volume of available data, number of parameters, data providers and users are steadily increasing.

2. Over its more than 20 years history NEAR-GOOS developed technology of oceanographic data management, exchange and services, communication with data providers and users. This experience is useful for developing of sustained regional observing systems in the WESTPAC area.

3. Further development of NEAR-GOOS would require to involve more partners/data providers (organizations and individual scientists) by strengthen collaboration with other regional and organizations and programs (e.g. GOOS, PICES, PAMS, others).

Thank you!


NEAR-GOOS 20th Anniversary Reception
December 15, 2016, Vladivostok, Russia
hosted by POI
NEAR-GOOS
NEAR-GOOS