



Japanese National Activity in the Arctic Science - The updated activities -

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Topics

1. ArCS in progress
2. Expand research base/collaborations
3. The 25th Anniversary of the Japanese Arctic Research Station in Ny-Ålesund, Svalbard
4. Japan Arctic Research Network (J-Arc Net)
5. Data Management
6. New Data Journal “Polar Data Journal”
7. ISAR-5

- Background (science)-

Arctic Research of Japan (Bilateral or Internationally collaborated)

- **Atmospheric and ecological studies in Ny-Alesund (25 years)**
- Greenland Ice cores (NGRIP, NEEM)
- **Observation in the Arctic Ocean by R/V Mirai (20 years)**
- **Climate and Ecosystem change modeling/projection**
- **Observational studies in eastern Siberia (Yakutsk region, 20 years)**
- **Vegetation and carbon budget studies in Alaskan boreal forests**
- SIGMA Project (snow and albedo study) → Contribution to GCW



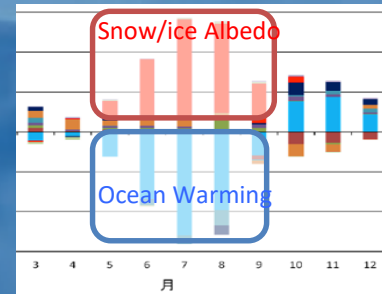
Experts contribution to AC Committees

| | |
|--------------------|--|
| AMAP, SWIPA, AACA: | Sending experts to contribute to making reports |
| CAFF, PAME, SCTF: | Participating as an observer |
| IASC: | Participating as Council member and WG member (1991-) |
| PAG: | Working as the chair (2016-) |

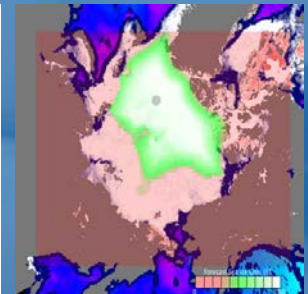
GRENE Arctic Project (2011-2015) (35 inst.)

Coordinated activities towards new scientific knowledge:

- Mechanism: polar amplification (precise feedback analysis)
- Projection: seasonal projection of summer sea ice condition
- Mechanism: physical relation between the Arctic Ocean and Winter climate in Japan



Feedback analysis of monthly heat source for the Arctic atmosphere



Six-months projection of sea ice in the Arctic Sea

2013 Participation of Japan to AC as an observer

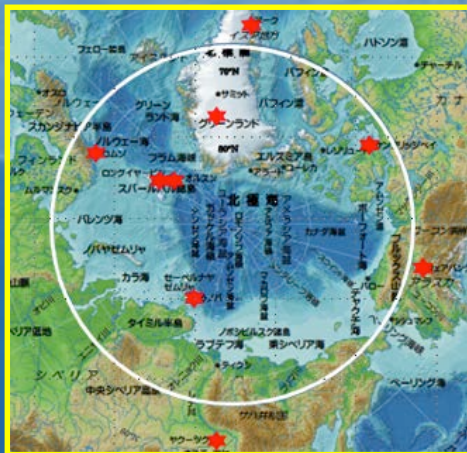
2015 Japan's Arctic Policy

AS basic perspective of the policy; Japan will

- 1) Make full use of Japan's strength in the area of science and technology from global viewpoint
- 2) Give full consideration of the Arctic environment, which is fragile, with a lower ability to recover
- 3) Ensure the rule of law, and promote international cooperation in a peaceful and orderly manner
- 4) Respect the right of indigenous peoples to continuity in their traditional economic and social foundations
- 5) Aim to economic and social compatibility with climate and environmental changes
- 6) Seek possible economic chances for the use of the Arctic Sea Route and development of resources
- 7) Pay full attention to security development in the Arctic

ArCS will strengthen the scientific cooperation with AC and non-AC countries which recognizes the importance of the Arctic. The project aims to provide opportunities of research co-designing with domestic and international stakeholders, with the ideas of social and cultural studies, for future bridging industry and the Arctic.

Expansion of research base/stations



Improving the basic research facilities for long-term stay and/or monitoring studies, which can be used by international collaborative studies.

Sending experts and young scientists



Long-term research cooperation through the exchange of young researchers. Interdisciplinary human resource development. Sending experts to International committees and meetings.

International research collaborations

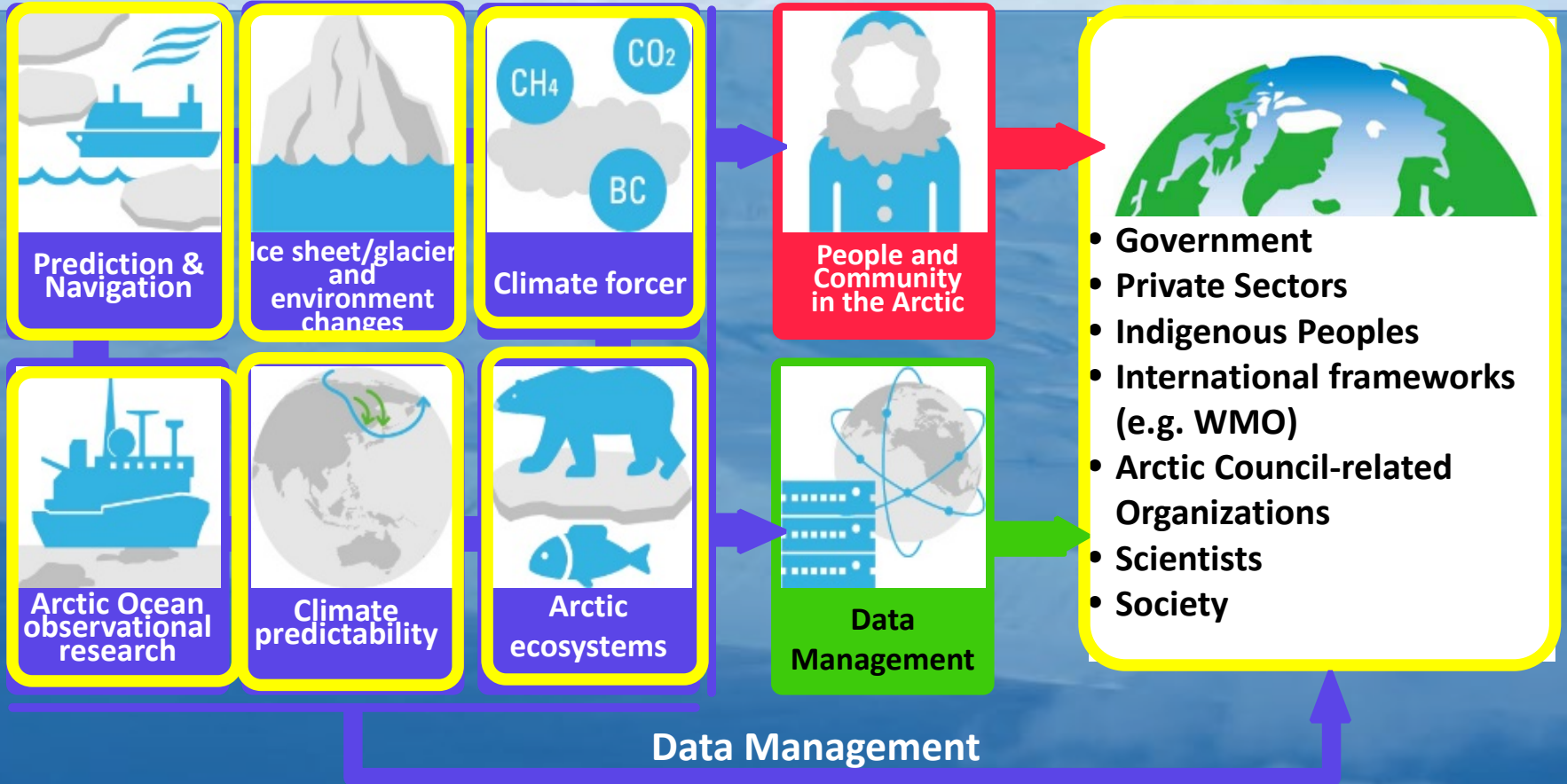


Carrying out the international joint research project
Considering the social and cultural impacts, providing information appropriately.

Promoting international cooperated research

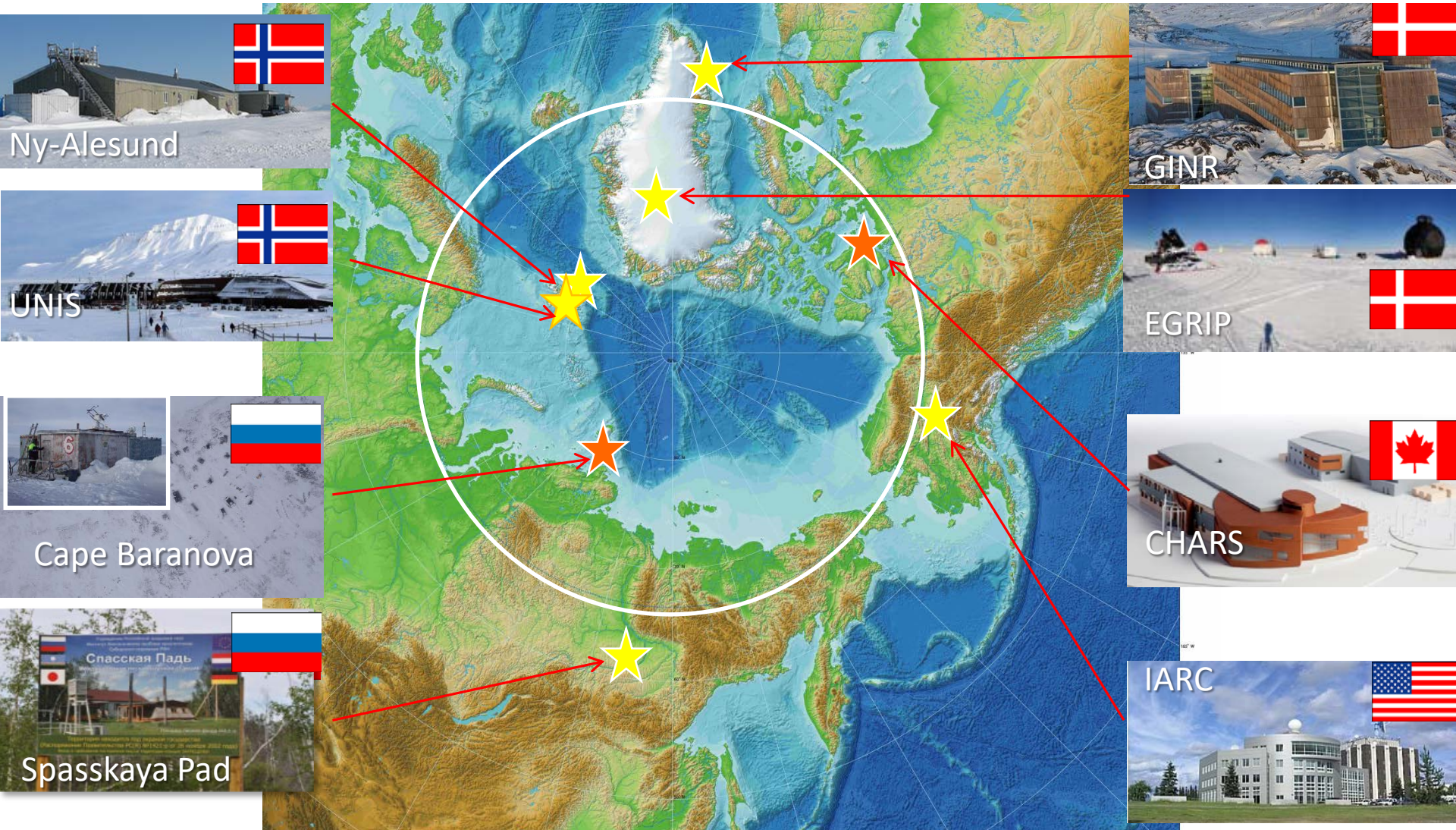
Natural Sciences

Social and Human Sciences



Japanese approach to the Arctic

Expand research base/collaborations

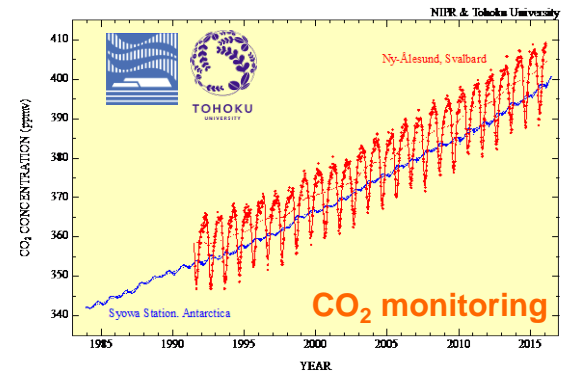


Improving the basic research facilities for long-term stay and/or monitoring studies, which can be used by international collaborative studies.

The 25th Anniversary of the Japanese Arctic Research Station in Ny-Ålesund, Svalbard



Rabben Station, since 1991



NIPR held an international workshop to commemorate the 25th anniversary of the foundation of the Ny-Ålesund Research Station, and exchanged the wishes of future expansion of international collaborations.

Arctic Centers in Japan NIPR

1991-

25year anniversary in 2016

JAMSTEC

2015. April -

Hokkaido University

2015 April -

Japan Arctic Research Network Center

J-ARC Net
北極域研究共同推進拠点

Network of three Arctic Centers in Japan

J-ARC Net

2016.April-

Activity

- Supporting research communities
- Promoting industry- academic- government collaboration planning meeting
- Promoting researcher nurture
- Disseminating results

Since 2016 April- (6Yr)

Japan Arctic Research Network Center

J-ARC Net
北極域研究共同推進拠点

- Broad network on "Natural sciences"
- Overseas laboratories
- Observatories



- Network on "Humanities and social sciences" and "Practical science"
- Experience and achievements of nurturing researchers

Inter-University Research Institute Corporation
National Institute of Polar Research
Arctic Environment Research Center

National Research and Development Agency
Japan Agency for Marine-Earth Science and Technology
Institute of Arctic Climate and Environment Research

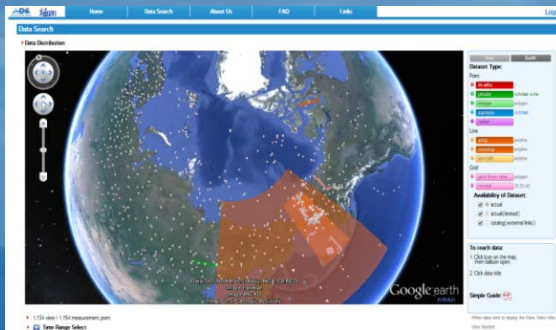
- Network on "Natural sciences" especially Oceanography and Meteorology
- Oceanographic Research Vessel MIRAI

All data and results from Arctic Research (at least of Japan) ➔

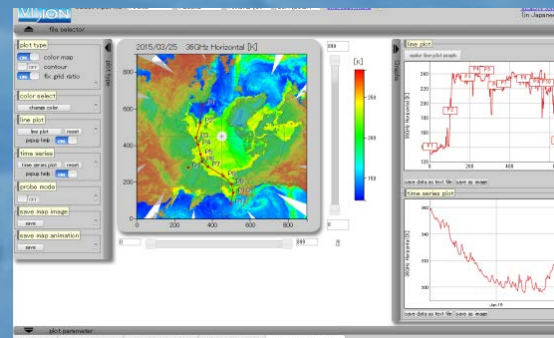


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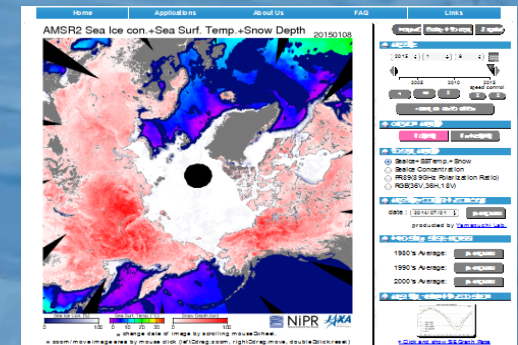
(Visualization service to view satellite data)



Data and plans registration system and Metadata search service. Registered more than 250 datasets



Online visualization application for Climate, Satellite and Simulation data



Semi-real-time polar environ. obs. Monitor and Sea Ice prediction

Collection and Archiving

Working bench

Dissemination

- Utilizing satellite data. Collaboration with JAXA Request & report to JAXA.
- Support for ship navigation, incl. R/V. Interface btw field data - GTS.
- Data from the previous projects are also archived (Data rescue).
- The *doi* number are prepared for each dataset. NIPR Science Data Base (2016 Oct-)

Polar Data Journal



Publication with Regard to Polar Data Journal

NiPR launches a new data journal "Polar Data Journal".

A significant amount of scientific data, collected in the polar regions, are easily forgotten and filed away after the researcher has published articles related to the data. NiPR has been publishing the scientific data collected in the polar regions as two on-line publications, the "JARE Data Reports" and the "NiPR Arctic Data Reports". The new "Polar Data Journal" will replace both of these and will be made available as a data journal. This is an advance which supports robust management of, and access to, the scientific data collected.

Some key features of the new journal are:

"Polar Data Journal" is a peer reviewed journal which aims to provide high quality data to researchers.

"Polar Data Journal" is a free-access.

"Polar Data Journal" is thoroughly edited through on-line editing system for quick publishing.

The journal content is overseen by an editing committee, which will disclose the reviewer's reports in each article of the volume.

We hope that the new "Polar Data Journal" enhances the preservation of, and continuing access to, the high quality science data to be utilized by many researchers, and contributes the development of the open science.

December 2016

Kazuyuki SHIRAIISHI, Professor

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5th International Symposium on Arctic Research

ISAR-5

**-The changing Arctic and its regional to global impact:
From information to knowledge and action-**

Date: 15-18 January 2018

Venue: Hitotsubashi Hall

**National Center of Sciences Building
Tokyo, Japan**

Symposium website: <http://www.jcar.org/isar-5/>

E-mail: isar5-office@nipr.ac.jp

The 1st circular <http://www.jcar.org/isar-5/1stcircular/index.html>



An aerial photograph of a vast, snow-covered mountain range. The terrain is rugged and covered in a thick layer of white snow, with deep shadows and bright highlights creating a textured appearance. The mountains stretch across the horizon under a clear, light blue sky. The text "Thank you for your attention" is overlaid in the center of the image in a dark blue, sans-serif font.

Thank you for your attention