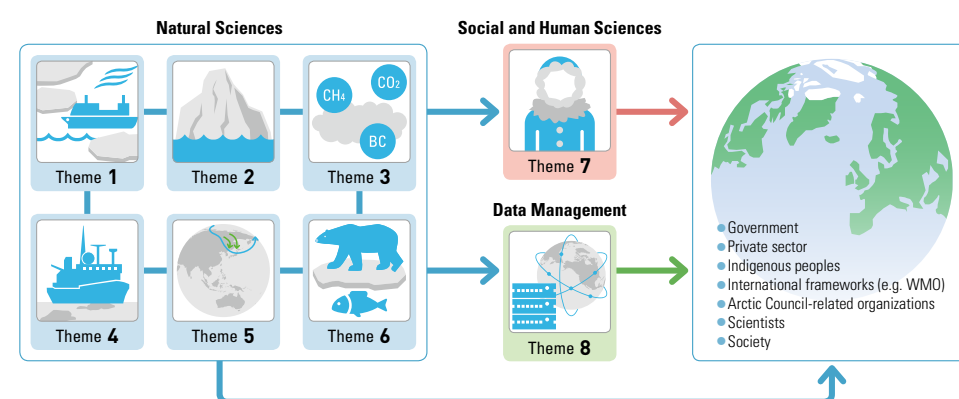


International collaborated research and Information flow



The Social and Human Science theme (Theme 7) is expected to transform scientific knowledge into information that can be used by society as a whole. This theme also tackles the possible impacts of Arctic environmental changes on society and socio-economy. The Data Management theme (Theme 8) gathers and archives both observed and assimilated data, as well as results from prediction models, thus making it the ArCS data center. The data is processed into so-called "easy to understand" information for dissemination to society.

Publication | Inter-university Research Institute Corporation
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Editing | National Institute of Polar Research (NIPR)
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)
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Photo | Front cover: Hiroyasu Kumagai, NIPR | Page 2 (Top): Shin Sugiyama, Hokkaido University | Page 2 (Bottom left): Masaki Uchida, NIPR
Page 9 (Bottom): Hiroki Takakura, Tohoku University | Page 10 (Canada): Shota Masumoto, Yokohama National University

Arctic Challenge for Sustainability

The Arctic research project of Japan

2015 - 2020

<http://www.arcs-pro.jp/>



What is ArCS?

The Arctic Challenge for Sustainability (ArCS) is a national flagship project funded by the Ministry of Education, Culture, Sports, Science and Technology. ArCS was launched in September 2015 and will be continued until March 2020. The National Institute of Polar Research (NIPR), Japan Agency for Marine-Earth Science and Technology (JAMSTEC) and Hokkaido University are positioned as the key institutes in this project.

Background

Climate change associated with global warming has been observed most conspicuously in the Arctic. For example, summer sea ice is decreasing faster than predicted and permafrost is extensively collapsing. These changes have been significantly affecting the Arctic environment and ecosystem including water cycles and vegetation. What happens in the Arctic is not only a concern of the people who live in the Arctic region but also of those who live in the rest of the world, because the Arctic plays an important role in the global climate system. At the same time, the decrease in sea ice draws significant attention around the world, even from non-Arctic countries, with expectations for possible opening up of new shipping routes and exploitation of natural resources in and around the Arctic Ocean.

While the worldwide attention to the Arctic is growing,

scientific knowledge and data which is necessary for analyzing and understanding the changes are still not sufficient. This is clearly shown by the fact that the decrease in summer sea ice has not yet been fully predicted by models. It is an urgent issue to elucidate how the Arctic environment changes, how the Arctic changes affect the climate and the ecosystem globally, and what impacts these changes have on human communities and economies. Furthermore, considering that the resilience of the Arctic environment to outer forces is weak, information sharing and rational and globally-coordinated activities become more important for sustainable development of the Arctic, to deal with drastically increasing traffic in Arctic sea routes and investments in the Arctic sea coast. With the basis of scientific knowledge, discussions on governance and international protocols regarding human activities in the Arctic will become more extensive and active within international frameworks such as the Arctic Council, the United Nations, and academic and commercial sectors, for both the sustainable development and the environmental protection of the Arctic in line with the United Nations Sustainable Development Goals for 2030.

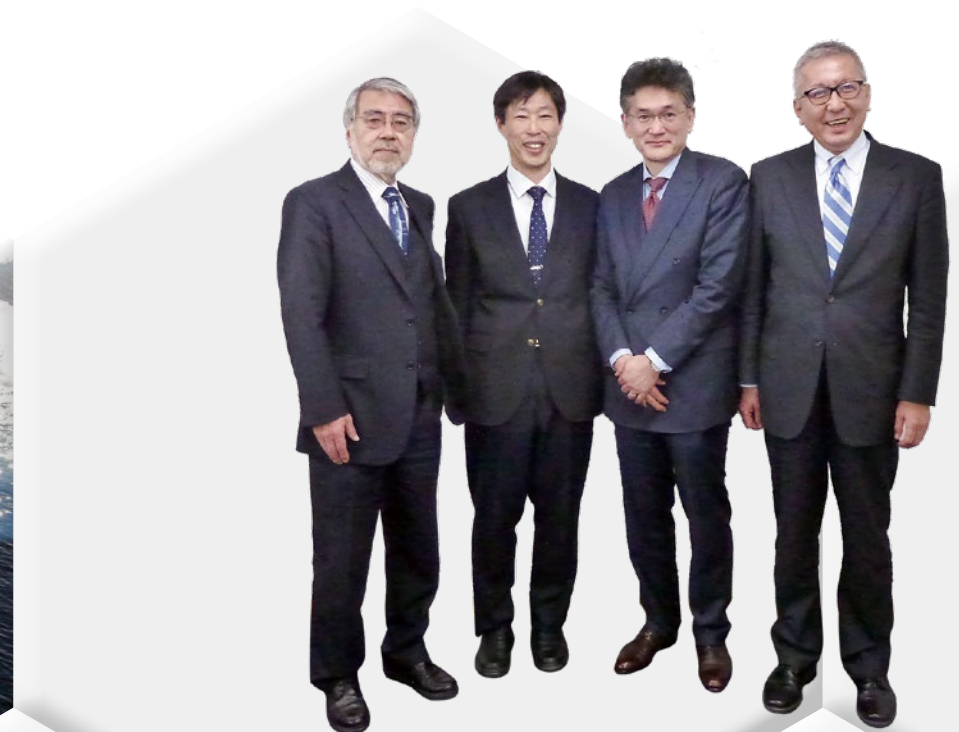
Purpose of the project

ArCS aims to elucidate the changes in the climate and environment in the Arctic, clarify their impacts on human

society, and provide accurate projections and environmental assessments for internal and external stakeholders, so that ArCS can help them make better discussions and decisions on the sustainable Arctic development.

Therefore, in this project, the three key institutes — NIPR, JAMSTEC and Hokkaido University — in cooperation with other related institutions will provide and disseminate important information to stakeholders, such as international organizations, national domestic and foreign policy-makers, and communities of indigenous peoples, on as many occasions as possible. This information will be formed on the basis of scientific results through comprehensively organized research on climate, weather, ocean environments, short-lived climate pollutants such as black carbon, and ecosystems and biodiversity. ArCS will also develop a data management system for the Arctic to ensure interoperability of the Arctic data among the research activities in the Arctic.

At the same time, ArCS will maintain and develop bases or sites in the Arctic for international cooperative research, organize a capacity building program for young researchers through collaborations with institutes and universities in Arctic countries, and dispatch experts in natural and social sciences to Arctic-related international frameworks and conferences.



Project Director
Masao Fukasawa
(NIPR / JAMSTEC)

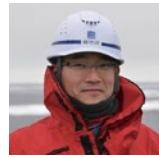
Sub Project Director
Hiroyuki Enomoto
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Sub Project Director
Takeshi Kawano
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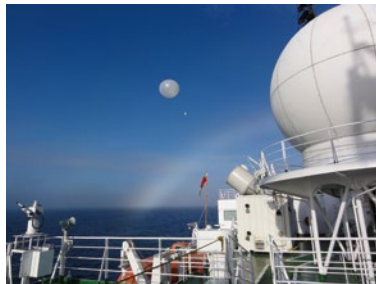
Sub Project Director
Sei-Ichi Saitoh
(Hokkaido University)

Theme
1

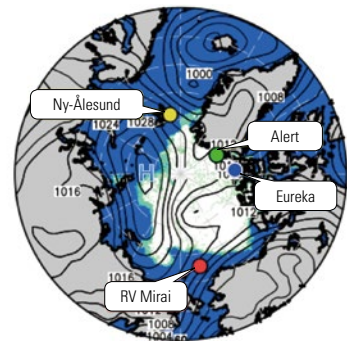
Predictability study on weather and sea-ice forecasts linked with user engagement



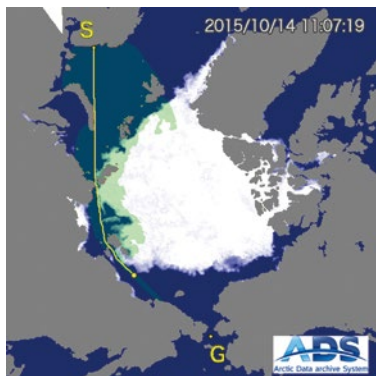
Principal Investigator
Jun Inoue
NIPR



Radiosonde observations from RV Mirai



International collaborative Arctic radiosonde observing network for predictability studies



Development of an ice navigation support system for the Arctic Sea routes

Optimization of Arctic observation network for weather and sea ice forecasts

Background

The Northern Sea Route (NSR) could be an attractive shipping route during the Arctic ice-free period, contributing to socio-economic activities between European and Asian countries. The decline in the Arctic sea ice extent, however, could cause extreme weather phenomena locally and remotely (e.g., cyclonic storms disturbing ship navigation along the NSR, and severe cold winter over the continental land masses). Therefore, accurate weather and sea-ice forecasts are desirable, although there are large uncertainties in current forecasts due to the sparse observational network in the Arctic. The World Meteorological Organization (WMO) has initiated the Polar Prediction Project (PPP), whose mission is to "Promote cooperative international research enabling development of improved weather and environmental prediction services for the polar regions, on time scales from hours to seasonal." Our research activities aim to add a valuable contribution to a sustainable Arctic observation network and socio-economic benefits.

Overview of the Research

To improve the skills of weather and sea ice forecasts over the Arctic region, international collaborative research will be conducted linking several international projects (PPP, S2S, etc.). There are three research themes: (1) intensive Arctic observations during the Year of Polar Prediction (YOPP) and observation system experiments based on a data assimilation technique; (2) predictability studies on weather extremes associated with the Arctic mid-latitude climate linkages by using the dataset from the Subseasonal to Seasonal (S2S) project; and (3) short-term sea-ice prediction and development of navigation support systems and a wave-ice interaction model for the Northern Sea Route. These observational and numerical studies will contribute to a comprehensive understanding of polar predictabilities. We will use research vessels to make atmospheric measurements and deploy wave buoys, and validate the impact of observations on weather and sea ice forecasts by using numerical experiments.



RV Mirai cautiously nosing her way through a thin ice area

Theme
2

Variations in the ice sheet, glaciers, ocean, climate and environment in the Greenland region



Principal Investigator
Kumiko Goto-Azuma
NIPR



Glaciers are draining into the ocean



Qaanaaq village in northwestern Greenland



Field activities lead by Hokkaido University



Study the ice sheet, glaciers, ocean, climate and environment in and around Greenland

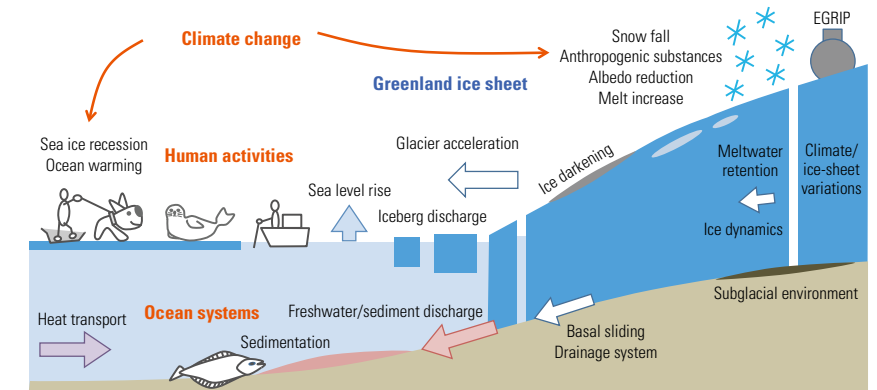
Background

The Greenland ice sheet and the glaciers, ocean, climate and environment in and around Greenland have been experiencing drastic changes. Mass loss of the Greenland ice sheet could lead not only to sea level rise, but also to abrupt changes in the global climate and ocean circulations, which would influence human societies and economies. However, the mechanisms of these changes and their impacts have not been well-understood. Under these circumstances, we carry out two research items: (1) variability of the Greenland ice sheet and climate, which will focus on Greenland's interior areas (PI: Kumiko Goto-Azuma, NIPR); and (2) ice sheet/glacier-ocean interaction in Greenland, which will focus on the coastal regions (Co-PI: Shin Sugiyama, Hokkaido University).

Overview of the Research

In the research item (1), we participate in an international project (East Greenland Ice Core Project, EGRIP). A deep ice core to the bed will be drilled at the onset of the North-East Greenland Ice Stream (NEGIS), where horizontal flow velocity is large. We expect to advance our knowledge on the dynamics and past changes of the Greenland ice sheet through analyses of the EGRIP core, borehole observations and modeling studies. We will reconstruct the climate, environment and ice sheet elevation/extent during the early Holocene, which was warmer than the present. We will also study the impacts of warming.

The research item (2) aims to quantify glacier and ice sheet changes in Greenland, with special attention to ice sheet/glacier-ocean interaction. Hokkaido University leads this project to investigate the influence of glacier and ice sheet changes on marine environments, and its impact on human activity in the region. To this end, we perform field and satellite observations, snow/ice and seawater analyses, and ice sheet/glaciers and ocean modeling. Our focus is on the region in the vicinity of Qaanaaq, one of the northernmost villages in Greenland. The goal is to provide the indigenous people of Qaanaaq with accurate data on changing glaciers and the ocean, which should help them to adjust their lifestyle to the changing environment.



Schematic diagram of the theme "Variations in the ice sheet, glaciers and ocean and environment in the Greenland region"



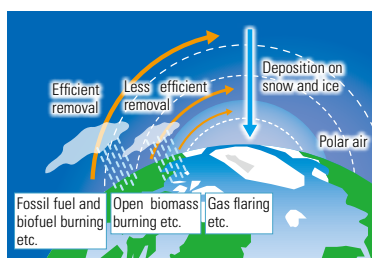
The EGRIP camp

Theme 3

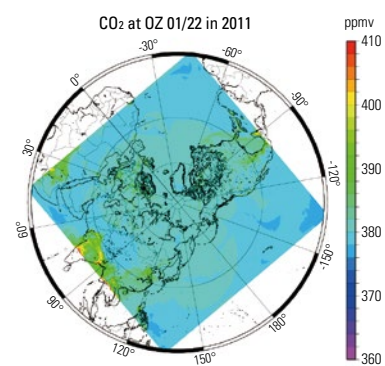
Atmospheric climate forcers in the Arctic



Principal Investigator
Makoto Koike
NIPR



Transport processes of black carbon aerosol (BC) into the Arctic as well as removal processes by precipitation during the transport



High resolution chemical transport model

Study atmospheric climate forcers in the Arctic

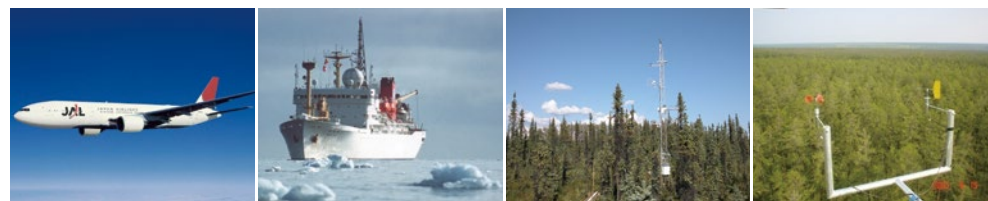
Background

The Arctic is warming. The main driver is an increase in the global atmospheric concentration of carbon dioxide (CO₂), which is a long-lived greenhouse gas (GHG). In addition, short-lived climate forcers (SLCFs), such as black carbon aerosol (BC) and gaseous methane (CH₄), potentially make a large contribution to Arctic climate change. BC efficiently absorbs solar radiation, potentially leading to an acceleration of ice-albedo feedback. CH₄ emissions from thawing permafrost will potentially enhance Arctic warming, thus leading to positive feedback. However, there are large uncertainties in their behaviors and impacts. The Arctic Council's Arctic Monitoring and Assessment Programme (AMAP) has reported that there is a need for further systematic studies of GHGs and SLCFs.

Overview of the Research

The aim of this study is to characterize behaviors of SLCFs and other GHGs in the Arctic atmosphere and to quantify contributions of individual sources/sinks. We measure atmospheric BC (at representative sites, and also by aircraft and ship) in the Arctic using high-accuracy instruments, which we have developed. A technique to measure BC in precipitation (rain and snow) and snow on the ground has also been developed, and we evaluate wet deposition flux of BC in the Arctic. Using advanced numerical models, we evaluate contributions of individual BC sources (regions and source types). We also characterize behaviors of clouds using in-situ, radar/lidar, and satellite measurements.

To study GHG flux, we combine top-down and bottom-up approaches. In the former method, we estimate fluxes from atmospheric concentration measurements by also using numerical models. In the latter method, we directly measure fluxes at a number of representative sites and estimate fluxes from a wide area over the Arctic. By conducting these high-accuracy measurements and using advanced numerical models, we characterize temporal and spatial variations in sources/sinks of GHGs. We also estimate responses of sources and sinks with respect to climate/environmental changes.



Platforms for the atmospheric observations and observations for terrestrial fluxes of greenhouse gases

Theme 4

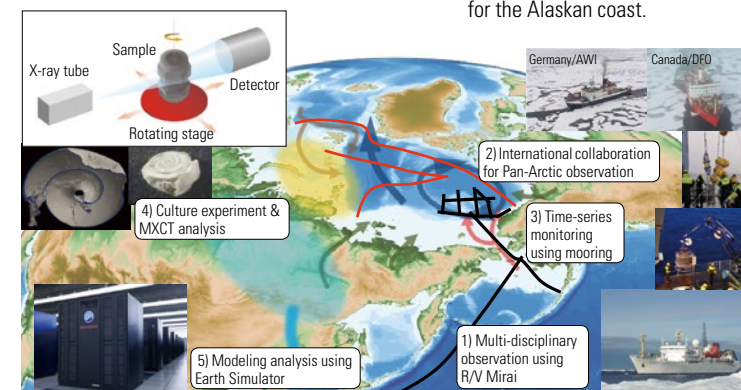
Observational research on Arctic Ocean environmental changes



Principal Investigator
Takashi Kikuchi
JAMSTEC



Arctic pteropod



Schematic of observational research on Arctic Ocean environmental changes

Understand ongoing environmental changes in the Arctic Ocean and impacts on marine ecosystem and climate

Background

Changes in the Arctic Ocean environment, typically shown as unpredictably rapid reductions of sea ice in the Arctic Ocean, are well known as one of the most remarkable evidence of global warming. Such sea ice reduction is closely related to significant warming, freshening and ocean acidification in the Arctic Ocean, and these changes are matters of concern for marine ecosystems and biogeochemical cycles. Furthermore, changes in air-sea interaction due to sea ice reduction in the Arctic certainly have climatological impacts not only in the Arctic region, but also for the global climate system.

Overview of the Research

The overall theme of our research is to elucidate the status and trends of ongoing Arctic Ocean environmental changes and to evaluate their impact on Arctic marine ecosystems (mainly focused on lower trophic levels) and the global climate system (e.g., climatological and hydrological interaction between the Arctic and sub-Arctic regions). Specific themes of our research are: (1) to understand ongoing changes in physical and biogeochemical conditions in the Arctic Ocean and variability in interactions with climatological and hydrological systems; (2) to evaluate the effect of ocean warming and acidification on marine ecosystems in the Arctic Ocean; (3) to understand seasonal/inter-annual variability in the freshwater budget in the Arctic Ocean; and (4) to understand variability in sea ice dynamics, especially for the Alaskan coast.

To achieve these scientific purposes, we plan to carry out: (1) field observation, mainly in the Pacific sector of the Arctic Ocean, by using R/V Mirai and icebreakers under international collaboration; (2) year-long mooring observations at key areas of ongoing Arctic changes; (3) on-site and laboratory experiments to evaluate impacts of changes in the Arctic environment; and (4) numerical modeling to address details of changes in the Arctic environment. International collaboration is indispensable for our research activities so we are continuing our collaboration with the US, Canada, Norway, Germany, Russia and other countries.

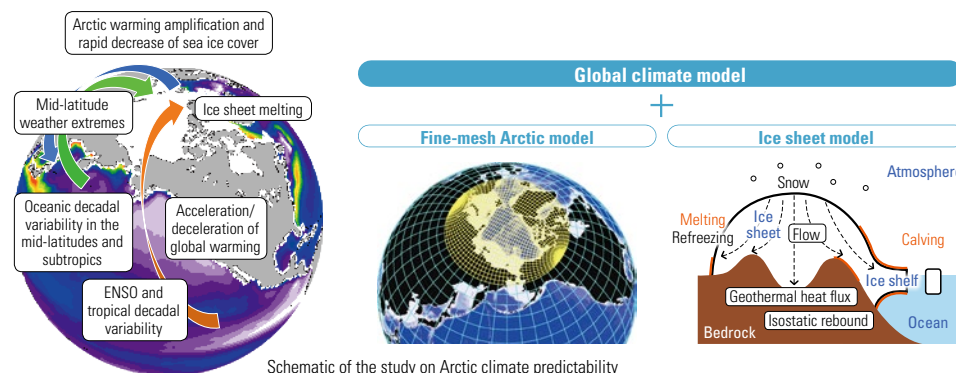
Theme 5

Study on Arctic climate predictability



Principal Investigator
Hiroyasu Hasumi
JAMSTEC

Evaluate the predictability of Arctic-related climate variations



Schematic of the study on Arctic climate predictability

Background

To know how the Arctic environment will change in the future, we need to reveal how the various factors in the Arctic environment interact with one another. On the other hand, it is thought that understanding how the Arctic environment is linked to the climate at low and middle latitudes would lead to better predictability of the climate on seasonal to decadal time scales. For long-term projection of the global climate, too, we need to precisely evaluate changes in the Arctic environment.

Overview of the Research

The goal of our theme is to evaluate the predictability of Arctic-related climate variations, wherein we aim to: (1) establish the scientific basis of climate predictability; and (2) develop a method for predicting/projecting medium- and long-term climate variations.

Variability in the Arctic environment remotely influences middle latitudes, including our country, and also the whole world. Since some of the

processes specific to the Arctic environment function as a long memory of the state of the climate, understanding the process of remote connections leads to higher-precision and longer-term prediction of global climate variations. Furthermore, the changes in the cryosphere are deeply related to the acceleration of warming and irreversible changes in the global climate. Conventional climate models have large uncertainty in the Arctic region. By making Arctic processes in climate models more sophisticated, we aim to clarify the role of multi-sphere interaction in the Arctic environment. We also aim to reveal the mechanism of remote connections by conducting climate simulations and analyzing various types of climate datasets. Furthermore, we aim to predict variability and project changes in the Arctic environment on interannual to multidecadal time scales and assess their influences on the global climate by developing a method to assimilate observed data into climate models, developing a climate model with special high resolution in the Arctic region, and incorporating the ice sheet process in climate models.

Theme

6



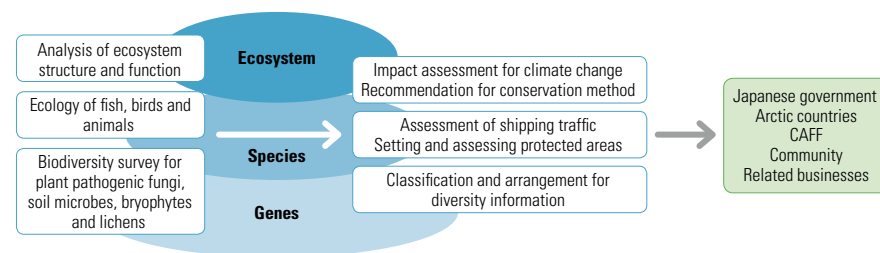
Response and biodiversity status of the Arctic ecosystems under environmental change



Principal Investigator
Toru Hirawake
Hokkaido University



Northward shift of marine biology in the Bering and Chukchi Seas



We will investigate three levels of biodiversity (genetic, species and ecosystem), with an emphasis on less advanced fields of study (e.g., plant pathogenic fungi)

Investigation of the changing Arctic ecosystems

Background

We are still far from understanding ecosystem resistibility and resilience to stresses as well as ecosystem structure, function, and services. Also, Arctic climate change and/or changes in human activity may be stressors on Arctic biodiversity, so studies are necessary to cultivate a better understanding of Arctic biodiversity and to discover how to implement biodiversity conservation.

Overview of the Research

Our goal in this theme is to elucidate response and biodiversity status of the Arctic ecosystems under environmental changes.

We investigate response mechanisms of marine biology in the northern Bering and the southern Chukchi Seas with respect to environmental changes such as sea ice reduction and human impacts such as fisheries and marine pollution. We then make suggestions on the sustainable use and protection of marine biological resources in the near future. Furthermore, we will observe changes in marine environments and primary production on a large spatio-temporal scale using satellite data. The results of these studies using in-situ and satellite data will be combined with numerical models from another research theme to suggest features in this study region in the near future.

We also study from the genetic level to the ecosystem level, as well as from microorganisms to large animals. In the Eastern Siberia region, we will attach GPS telemetry to investigate the behavioral ecology of animals such as reindeer and polar bears. The data we obtain will be utilized to assess protective zones for the animals and/or for ensuring the safety of local people. Although St. Lawrence Island located on the south of the Bering Strait has an abundance of seabirds, little is known about their behavior on the island. We investigate it by using bio-logging techniques and try to assess the effects

on the seabirds of changes in sea ice and ship traffic. We also investigate the structures and functions of terrestrial ecosystems and analyze ecosystem services using latitudinal gradients to clarify the diversity of ecosystem services mainly in Northern Canada.

Theme

7



People and Community in the Arctic: Possibility of Sustainable Development



Principal Investigator
Shinichiro Tabata
Hokkaido University



Oil pipeline in Alaska



The indigenous people watching the local competition of strength on the day of Reindeer herder (Yamalo-Nenets autonomous district, Russia)

Contribute to predicting the future of the Arctic from the perspective of the humanities and social sciences

Background

Under the influence of climate change and global warming, possibilities have emerged for advances in economic activity in the Arctic region, including the Northern Sea Route and resource development. Japanese companies and organizations are also involved in resource development in the Yamalo-Nenets Peninsula and Greenland, and they have expressed great interest in the Northern Sea Route. These activities, however, have a significant impact on the natural environment of the Arctic Circle and the living environment of local residents, including indigenous people. The international community, including Japan, has been asked to seriously consider how we should foster the development of the Arctic.

Overview of the Research

We will consider how we should promote the development of the Arctic from the following three perspectives. First, we analyze how the economic development of the Arctic (in particular, resource development and the Northern Sea Route) is currently proceeding and consider how we should proceed in the future. We present a development scenario, and calculate the costs and benefits in a broad sense. Second, when we proceed with such economic development, we consider what is necessary in order to preserve the environment in the whole Arctic and the living environment of local communities and indigenous peoples. This means that we consider what the interaction should be between the environment and human beings. It should be noted that the Arctic environment has a global impact. Third, when advancing economic development, in order to think about what rules should be adopted by international organizations as well as national and local governments, we form an accurate understanding of the policy discussions at these organizations.

Theme

8

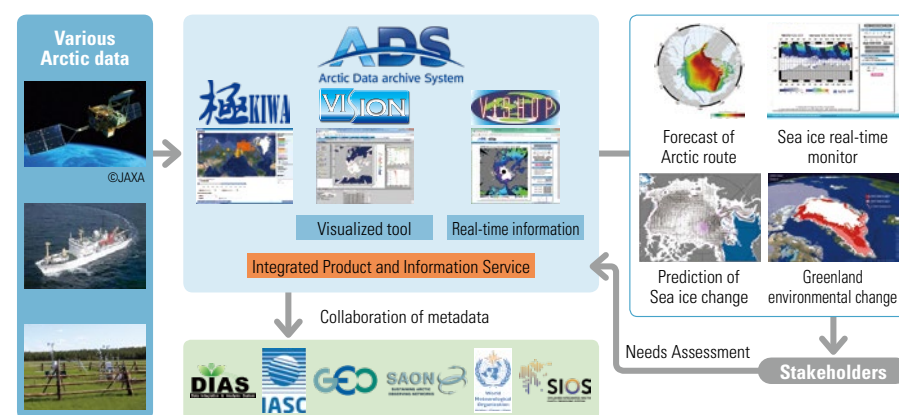


Arctic Data archive System (ADS)



Principal Investigator
Hironori Yabuki
NIPR

Towards the discovery of scientific knowledge on the Arctic



Concepts of data distribution and international cooperation in ADS




Background

"Open Science" is becoming increasingly important. In Open Science, the outcomes of research supported by public funding, including scientific theses, reports, data, and methods, are made available to the public, and these published outcomes also promote new scientific knowledge creation and innovation. The Arctic environment is composed of the atmosphere, ocean, land, and human society, and changes in each of these areas are intertwined in a complex manner. Fully understanding environmental changes in the Arctic region is very difficult, but many research have been carried out in these respective fields. Their scientific achievements include many sets of observation data and satellite data, as well as simulation data, and these

are the "Big Data" of Arctic research. Promoting Open Science including this Big Data can be expected to contribute to new interdisciplinary collaboration and innovation.

Overview of the Research

The Arctic Data archive System (ADS) aims to develop an Open Science infrastructure for Arctic research, and will promote the mutual distribution of the Big Data of Arctic research. Furthermore, ADS will develop analysis and visualization Web services for integrated Big Data, and intends to generate new value with Big Data.

<div> <div>Establishing Research and Observation Stations</div> <div>  <div>Principal Investigator Hiroyuki Enomoto NIPR</div> </div> </div>	<div> <div>Establish research and observation platforms in the Arctic region</div> <div> <div>Background</div> <p>According to Japan's Arctic Policy, there is a demand to strategically establish research and observation stations in the Arctic states as one of the research and development issues that Japan should deal with. This is to promote closer international cooperation through on-site observations and joint research projects, and to promote the effective development of human resources by dispatching young researchers to the stations.</p> </div> <div> <div>Overview of the Activity</div> <p>The following collaborative research sites are planned to be established in Arctic countries during the ArCS project. We will secure collaborative bases in the Arctic states which face the Arctic Ocean, after the establishment of these research stations. It is highly hoped that this project will contribute to maximizing the possible use of these observation bases to promote our research and human resources development for Arctic studies. In addition, we will be able to ascertain the scientific, social and political issues that the Arctic states are facing as emergency challenges.</p> </div> </div>
<div> <div>The United States</div> <div> <div> <div>1 International Arctic Research Center/University of Alaska</div> <div>2 Poker Flat Research Range (PFRR) Flux super site</div> </div> <p>Secure an office space in IARC, serving as a research and observation hub for Japanese researchers and students in Alaska. Partial support for the maintenance of the monitoring site including Flux monitoring tower in PFRR shall also be provided for the study of terrestrial environment changes.</p> </div> </div>	<div> <div>   </div> </div>
<div> <div>Canada</div> <div> <div> <div>3 Canadian High Arctic Research Station (CHARS)</div> <div>4 Centre d'études nordiques (CEN) field stations</div> </div> <p>Secure a research base for Japanese researchers and students in CHARS, which is available for scientific operations from 2017 in Cambridge Bay. We also proceed international collaborative researches in the Canadian high Arctic area in cooperation with CEN who maintains 8 stations there.</p> </div> </div>	<div> <div>   </div> </div>
<div> <div>Russia</div> <div> <div> <div>5 Spasskaya Pad Scientific Forest Station</div> <div>6 Ice Base Cape Baranov station</div> </div> <p>We will use the Spasskaya Pad Scientific Forest Station and its flux tower for observational activities in cooperation with Institute for Biological Problems of Cryolithozone (IBPC), Siberian Branch of RAS. We also use Ice Base Cape Baranov seafront station, which has resumed operations since 2013 by the Arctic and Antarctic Research Institute (AARI), to study atmosphere-sea ice interactions.</p> </div> </div>	<div> <div>   </div> </div>
<div> <div>Norway</div> <div> <div> <div>7 Ny-Ålesund Research Station</div> <div>8 University Center in Svalbard (UNIS)</div> </div> <p>Ny-Ålesund Research Station acts as a frontier base for Arctic researchers in Japan. The station is available for multi-scientific proposes with its facilities. UNIS is the world's northernmost university, and provides higher education on Arctic studies. Its well-equipped observation facilities and education and training programs are also useful to promote the ArCS project in the high Arctic of the European sector.</p> </div> </div>	<div> <div>   </div> </div>
<div> <div>Greenland (Denmark)</div> <div> <div> <div>9 East Greenland Ice Core Project (EGRIP)</div> <div>10 Greenland Institute of Natural Resources (GINR)</div> </div> <p>Collaboration with the EGRIP member countries for ice core drilling on the Greenland ice sheet, as well as establishment of research base in GINR, Nuuk, Greenland.</p> </div> </div>	<div> <div>   </div> </div>

<div> <div>Program for Overseas Visits by Young Researchers</div> <div>  <div>Principal Investigator Sei-ichi Saitoh Hokkaido University</div> </div> </div>
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Dispatched young researcher with local students

<div> <div>Dispatch of Experts to Arctic-related Meetings</div> <div>  <div>Principal Investigator Hiroyuki Enomoto NIPR</div> </div> </div>
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Presentation on Japan's effort at Arctic Monitoring and Assessment Programme (AMAP)



Presentaion at Arctic Frontiers

<div> <div>Support the development of young experts who can contribute to international research and conferences</div> <div> <div>Background</div> <p>It is indispensable to actively engage the next generation of young researchers who share a concerted field of vision in addressing Arctic concerns well beyond the borders of government, industry and academia.</p> </div> <div> <div>Overview of the Activity</div> <p>We will dispatch highly competitive young researchers from our country to overseas research organizations dealing with Arctic studies. Consequently, this will advance our expertise on the focus of Arctic research through the acquisition of techniques and the co-production of knowledge. Research themes on the Arctic include the disciplines of practical sciences such as engineering, agriculture and medicine as well as the natural and social sciences. We will support foreign travel for periods from half a month up to a year, and encourage the implementation of diverse research activities. We will also clarify the importance of the overseas visit program and facilitate its realization by arranging pertinent orientations before the visit and by conducting follow-up discussions. Likewise, we will plan to establish knowledge, maintain research networks and further reinforce activities by creating opportunities to present the outcomes of studies. Young researchers who have been dispatched to overseas institutions will plan briefing sessions carried out under the ArCS program and the like to share with the ArCS researchers the knowledge and connections they acquired through international networking.</p> </div> </div>

<div> <div>Play a part in science diplomacy in the Arctic</div> <div> <div>Background</div> <p>Japan joined the Arctic Council (AC) as an observer country in May 2013. Since then, an increasing number of requests for Japan's participation in various international meetings have been made. Requests for dispatching Japanese Arctic experts to high-level diplomatic meetings related to the Arctic have been also increasing. Contributing to these meetings through the achievements of the ArCS project as well as Japan's other Arctic research and observation efforts will lead to promoting Japan's global reputation and demonstrating a greater presence in the issues of sustainable development and environmental protection in the Arctic. In addition, promptly providing the latest global trends to researchers as well as policy decision makers in Japan is expected to contribute to various domestic Japanese science and policy decision settings.</p> </div> <div> <div>Overview of the Activity</div> <p>The AC makes international policies regarding the Arctic, and its decisions have a decisive influence on Japan's scientific and economic activities related to the Arctic. Therefore, we will dispatch experts who are able to provide expert opinions from a scientific point of view to the AC's working groups, task forces, and expert groups. In particular, we mainly target AMAP, which is doing the most active work among the working groups and deeply relates to natural science. Furthermore, upon receiving a request from the Japanese government or the Ministry of Education, Culture, Sports, Science and Technology (MEXT) to dispatch experts to high-level diplomatic meetings related to the Arctic, we will send experts who can provide appropriate advice or support for these meetings. In particular, the start of drawing up the 6th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) is scheduled during the term of the ArCS project, so we also intend to actively dispatch experts to IPCC-related meetings. The dispatched experts will gather information that will be effective for Japan's research and policies, and report this information as well as the outcomes of the meetings as soon as they return.</p> </div> </div>
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