Interview with Hiroyuki Enomoto, New Committee Chair of the Japan Consortium for Arctic Environmental Research (JCAR)

It has been two years since the Consortium was created. How do you view the two years that have passed up until now?

The history of Arctic exploration often tells the tales of brave individuals persevering through the harsh conditions of the high north to make discoveries that became the basis of Arctic research. Although there is simplicity and courage in carrying out activities single-handedly, there is much to be gained from cooperation and collaboration with others.

Research thrives in collaborative settings, not only allowing for cooperation in the lab and field, but also between countries and disciplines, that advances scientific understanding and provides a continuity of ideas and efforts unattainable through individual efforts into the Arctic.

Given this evolution towards collaborative research, it became clear that a consortium that linked various research institutes and universities would better advance our understanding of the Arctic. The Japan Consortium for Arctic Research (JCAR) was created to bring together institutions and disciplines to advance Arctic research.

While they may come from different disciplines, different perspectives, and research community, we want to praise these “explorers” and continue to grow their standard very high. Even though there are challenges to working in such a diverse arena. No other organization has been able to assemble “do, as a group, things that used to be separate,” while maintaining the freedom of research.

What kinds of approaches are being taken toward organizational operation?

JCAR aims for researchers of various sectors to be linked as a network, and to “do, as a group, things that used to be separate,” while maintaining the freedom of research.

Field size, number among all of the research projects. We believe that this convention will be one where it is possible to exhibit Japanese contributions to Arctic research.

In heading towards the future

The international community has very high expectations from Japan when it comes to Arctic research. Japan has many qualified scientists active in Arctic science, but the volume of inquiries for collaboration exceeds any one person’s ability to respond effectively. JCAR has the vision for all of its staff, including the secretariat, to have experience in Arctic research, further solidifying its role as an international leader in Arctic science. The early career scientists of marine science have already forged ahead, bringing together new perspectives in a workshop that will contribute to workforce development and long-term planning for Arctic marine sciences. Other interdisciplinaries will be followed suit with similar opportunities for broad exchange.

Keeping momentum at the forefront of change is always challenging, but I want to cultivate these seeds, these new scientific ideas, to grow the next generation of explorers and big ideas. It is with this in mind that I hope to build a future for Arctic research, together at JCAR, a framework that will reach 10 or more years into the future, that will produce a strong generation of interdisciplinary scientists, and be a home where dreams for Arctic research are made real through collaboration and exchange.

Principal Investigator’s Perspective

Principal Investigator’s Perspective

Since this research project is going ahead with observations, an enormous amount of time and costs are required in observation. If project researchers could be employed for each observation site, it would be much easier to make observations at each site and link them together.

But as enormous expenditures are incurred in observation, the number of project researchers that are employed for this project in the arctic is very small, and there is a need for other groups to make up for these project researchers.

However, our advantage lies in possessing the data from the last ice age. We have obtained data that is not easy to observe due to a difficulty of access and other various difficult conditions, and people working in the field fully understands the conditions on the site. What is important is integrating the field data in comparison with the current environment.

In heading towards the future

Although multiple groups conducting observations of the arctic areas, including the model, has never came together and thought together, since the GRINE Arctic Climate Change Research Project was initiated, the fact that it has become possible to make progress with the field data is one of the major achievements.

In addition to cooperating and not excluding, we will place emphasis on communication between the observation site and the models.

When I was a kid, I was a child who wanted to try everything after the other sports. I was not the sporty type. Now, whenever I have a break, I like to link this, as our treasures, to results. I am a sporty type, I like to link this, as our treasures, to results. I am a sporty type, I like to link this, as our treasures, to results.
When traveling to study sites in boreal forests, forests viewed from aircraft appear to be composed of single species over wide areas, for example, larch in Siberia or black spruce in Alaska. However, once the forest is entered on foot, it is surprising to see the variegation of species and the differences are not just species present, but also patches and their thickness may reach several tens of centimeters. Differences in the forest floor are lichens and the green to yellow areas are mosses. (Photo: Morishita)

When traveling to study sites in Boreal forests, forests viewed from aircraft appear to be composed of single species over wide areas, for example, larch in Siberia or black spruce in Alaska. However, once the forest is entered on foot, it is surprising to see the variegation of species and the differences are not just species present, but also patches and their thickness may reach several tens of centimeters. Differences in the forest floor are lichens and the green to yellow areas are mosses. (Photo: Morishita)

Impacts of Forest Floor Vegetation on Soil Carbon Accumulation

Masao Uchida (National Institute for Environmental Studies)

The relationship between melting of permafrost due to warming (rising temperatures) could trigger the melting of carbon in the form of methane hydrates than the amount in atmospheric carbon dioxide and about ten times the amount in atmospheric methane. There are concerns that global warming has been predicted to increase the amount of precipitation in the Arctic. More moisture levels increased. Global warming has been predicted to increase the amount of precipitation in the Arctic.

Atsuko Sugimoto (Hokkaido University)

The terrestrial areas of the Arctic are a vast unobserved area. As field observations were conducted using the Swallark Arctic Research Station (SARS) at the coastal area of the northern forests and Arctic ecosystems. The sites vary greatly for factors including vegetation, climate, presence or absence of permafrost and its condition. For each site, fluxes including water, energy and carbon dioxide between ecosystems and the atmosphere, soil temperature and moisture, vegetation growth and carbon accumulation in the ecosystem, methane emission rate and other factors are being investigated. Through comparison of the observation results, it is important to clarify the characteristics of change for each region.

Although various abnormal phenomena can be seen visually, these are also becoming apparent in observation data. Previously it was generally assumed that rising temperature would accelerate growth in northern forests and Arctic ecosystems. However, this is not always true. In the forested zones in some regions phenomena such as declining forest biomass and lower growth rate of trees are actually occurring. Change in soil moisture condition such as high temperature induced drought and extreme wet condition may be greatly impacting ecosystems.

(Principal Investigator - Atsuko Sugimoto)