

## **SAMS visit to Nagasaki University, December 2023**

**Dr Helena Reinardy, Dynamic Coasts research area co-lead**

**Dr Lindsay Vare, Blue Economy research area co-lead**

### **Nagasaki University visit to SAMS, August 2023:**

In August 2023, SAMS hosted two visiting scientists from Nagasaki University, Professor Gregory N. Nishihara and Associate Professor Katsuya Hirasaka. The aim of the visit was to explore possible research links between the organisations.

The day involved an initial research seminar where all members of SAMS science community were encouraged to attend, followed by a series of more focused discussions with key scientists from SAMS, focusing on 'blue carbon and seaweed ecosystems', 'seaweed biosecurity, coastal communities and social licence', 'seaweed farming' and 'applied phycology and algal biotechnology'.

The visit also included a tour of SAMS facilities, including the Culture Collection of Algae and Protozoa (CCAP), the Algal Research, Innovation and Environmental Science Centre (ARIES), the Seaweed Nursery and SAMS aquarium facilities.

The visit was a useful experience for all, sharing research ideas and past experiences, as well as exploring many areas of common interest.

### **Nagasaki University reciprocal visit, December 2023:**

In December 2023, SAMS scientists Drs Lindsay Vare and Helena Reinardy, undertook a reciprocal visit to Nagasaki University, to visit the University's facilities and to further discussions. They were hosted by Associate Professor Katsuya Hirasaka from the Institute of Fisheries Science, Organization for Marine Science and Technology, and Professor Gregory N. Nishihara from the Institute for East China Sea Research.

The first day involved a morning seminar session in the Institute for Fisheries Science (Figures 1 and 2). Dr. Vare presented an introduction to SAMS and an overview of SAMS activities. Dr Reinardy presented on SAMS Research: Aquaculture and Environmental Toxicology. Professor Gregory Nishihara presented on his research on seaweed aquaculture and sea grass restoration work on the islands close to Nagasaki. The seminars were attended by a wide range of students and faculty members and there was a lively question and discussion session afterwards.

Over lunch they were introduced to the Dean of the Faculty of Fisheries, Dr Yoshitaka Sakakura, and Associate Professor Dr Hee-Jin Kim. They were given a tour of the Institute, starting with a museum highlighting the connections between Nagasaki and Scotland through an extensive display of fish drawings collated by Thomas Glover who came from Fraserburgh and moved to Nagasaki in 1859. Laboratory tours included visits to the zooplankton research of Dr Kim, the killifish and flounder facilities of Dr Sakakura, and tuna exosome work of Dr Hirasaka.

The following day they were taken out to visit the two fisheries training and research vessels at the Institute for East China Sea Research, the Nagasaki-Marui and the Kakuyo-Marui (Figures 3 and 4). The vessels are ideally equipped for in-shore fisheries and oceanography research and training in the East

China Sea. With on-shore accommodation available for students and teachers, they are well placed to take visiting student groups for training and are open for discussions and enquiries. There were also tours of the experimental wet and dry labs and aquaria facilities in the Institute. There was a wide range of equipment and species, from fish to cephalopods and crustaceans.

The visit culminated in a lovely social dinner where traditional Japanese food was enjoyed and scientific ideas and future collaborations were discussed in a more informal setting.

### **Outcomes**

The most significant outcomes of the visit was direct connections and contacts for a range of research areas of common interest to SAMS and Nagasaki University staff.

### **The key collaborator links:**

Professor Gregory Nishihara. Research interests: seaweed aquaculture, sea grass restoration, marine debris pollution. Contact: [greg@nagasaki-u.ac.jp](mailto:greg@nagasaki-u.ac.jp)

Associate Professor Katsuya Hirasaka. Research interests: exosomes and fish nutrition, genetics and genomics. Contact: [hirasaka@nagasaki-u.ac.jp](mailto:hirasaka@nagasaki-u.ac.jp)

Associate Professor Hee-Jin Kim. Research interests: zooplankton, diurnal vertical migration, light sensitivity. Contact: [heejin@nagasaki-u.ac.jp](mailto:heejin@nagasaki-u.ac.jp)

Dr Yoshitaka Sakakura, Dean of the Faculty of Fisheries. Research interests: killifish and epigenetics, flounder culture and development. Contact: [sakakura@nagasaki-u.ac.jp](mailto:sakakura@nagasaki-u.ac.jp)

Dr Minoru Wada, Vice-Dean of the Graduate School of Fisheries and Environmental Sciences. Contact: [miwada@nagasaki-u.ac.jp](mailto:miwada@nagasaki-u.ac.jp)

### **The Future**

Going forward, Drs Vare and Reinardy will widely communicate the visit activities, facilities, and key contacts with all researchers across SAMS. They will present at all research meetings, including the PIPRAD (all PI's, postdoctoral researchers, and associate directors) meetings, and the specialise research area meetings of Dynamic Coasts, Blue Economy, and Ocean Systems. Additionally, the teaching exchange and student training opportunities will be shared with program leaders and the Education team. Some researchers at SAMS have successfully engaged in the JSPS Invitational Fellowship for Research in Japan program in previous years, and will happily guide any interested researchers wanting to pursue further collaborations with Nagasaki University in applying for their funding.

### **Expenditure:**

The costs associated with two SAMS scientists travelling to Japan to undertake the reciprocal visit:

- £57.60: Holiday Inn Glasgow Airport (10/12/2023)
- £57.60: Holiday Inn Glasgow Airport (17/12/2023)
- £395.20: Accommodation in Nagasaki for Helena Reinardy (5 nights from 12/12/2023)
- £395.20: Accommodation in Nagasaki for Lindsay Vare (5 nights from 12/12/2023)
- £2552.74: Flights returns for Helena Reinardy and Lindsay Vare (11/12/2023 and 17/12/2023)
- **Total £3,458.34**

**Photos:**



**Figure 1:** Institute of Fisheries Science, Nagasaki University



**Figure 2:** Joint seminar session with Drs Vare and Reinardy in the Institute of Fisheries Science



**Figure 3:** Left-Right, Professor Gregory Nishihara, Dr Lindsay Vare, Dr Helena Reinardy, Dr Katsuya Hirasaka outside the Institute for East China Sea Research, Nagasaki University.



**Figure 4:** Fisheries research and training vessels Nagasaki-Maru (distant) and Kokuyo-Maru (on board) of the Institute of East China Sea Research.



**Figure 5:** Social dinner between Nagasaki University faculty and SAMS.