

Ecosystem and environmental learning on Yoronjima

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Kagoshima University is one of the national universities in Japan which is located at the southernmost tip of the mainland. The beautiful natural environment around the university is diverse and abundant, making it a suitable university for research and education in environmental sciences. Kagoshima Prefecture has a great nature; beautiful natural forests, oceans, volcanoes, and more than 600 islands of various sizes—where this number is the second largest among the prefectures in Japan.

Imagine spending your student life here. On a sunny day, we have many options. Go to mountain trails to seek insects and plants in the Osumi Peninsula? Alternatively, you go snorkeling at the coasts of Makurazaki or Bonotsu and play with marine life? In either case, you will have to escape the classroom lectures. Even on days where you earnestly attend compulsory lecture subjects, it is entirely possible to go to Sakurajima volcano in the afternoon. Of course, for overnight stays on weekends. Why don't you go to Yakushima? The Tokara Islands seems appealing as well. It might feel like you spend your days just playing, but this is synonymous with attending lectures that are the ultimate in environmental education. Said another way, it also means that if we half-heartedly conduct lectures, then students will soon get bored of us. Practical courses conducted in the field need to be presented in a powerful and stimulating manner that can satisfy the students' immense desire for knowledge. In this article, we would like to introduce a Kagoshima University's style field learning program that makes full use of this blessed natural environment.

The Faculty of Science at Kagoshima University has a so-called "Yoron Jisshu" with a tradition dating back over three decades, the official name is "Field Studies in Regional Environment." Students experience the entire natural environment of the area, deepen their specialized understanding, and learn the connections with the local culture. Yoronjima, the location for the program, is the southernmost tip in the prefecture. What awaits the students living in city-side Kagoshima is an extraordinary experience.

Students are picked up by the school bus at our university campus, commencing the great journey, and head to the ferry terminal. They stay overnight on board to reach the island—approximately 20 hours one-way. This ferry cruise is an important opportunity for learning about Kagoshima's great nature. Students experience the 600 km length of Kagoshima Prefecture, witnessing geological and topographical differences between the islands and the clear blue water as they move south while stopping at a series of islands. They cheer over flying fish and turtles, and they feel the activities of the islanders (*Shimanchu* in Amami dialect) as the people board and disembark the ferry with their large luggage every time they arrive at a port.

The ferry that left Kagoshima in the evening finally arrives at the port of Yoronjima the next day at noon. Awaiting us at the port is Mr. KAWAMOTO Harutoshi, the “master” of the BeachLand Lodge, Yoron which has served as the base for this program for over 30 years. Pioneer professors had groped the location for the field course at the beginning and tried a place on the mainland of the prefecture in the second year of the program which end up with unpopular rating by the students. Since then, the course has been held in Yoronjima. Professor SATO Masanori, who studies annelids and used to be a young faculty member when he was leading the course in its early stages, retired in 2021. The master and the Yoron training have not only overseen the growth of students but also of professors.

Let us focus on the content of “Yoron Jisshu.” As we mentioned, the course has already started on the ferry, but it is not until arriving at Yoronjima that we fully take on tasks. The content changes slightly depending on the weather and the types of instructors leading the program. It is mainly for studying “coastal vegetation and the environment,” “inland vegetation,” and “coral reefs and animals.” It also includes a “Day for free observation.” One of the best advantages of the program is that students can learn about flora and fauna that live in marine, coastal areas, and land while interacting with the actual organisms. It is customary to head out to the mountains and sea during the day, and to “identify the names” of the creatures at the lodge in the evening. Students not only acquire knowledge of the plants and animals that live on Yoronjima, but also think about questions such as “What are their notable characters?” and “Does this match the explanation in the illustrated books?” improves their ability to observe and think logically.

Don’t forget the fun while studying. When the students finish daytime tasks early, we head to the night beach to observe the activity of the nocturnal animals. This is an opportunity to find tropical species such as the large land crabs dwelling underground during the day and the coconut crab which is the world’s largest terrestrial hermit crab. Searching for those animals while illuminating the gaps between rocks with flashlights is as much fun as treasure hunting—even better when they are lucky enough to encounter the spawning of sea turtles. Based on the specimens collected by students during the program, two parasitic isopods, *Allocancrion yunnu* Uyeno and Boyko, 2020 and *Kepon grapsi* (Nobili, 1905) were described as a new species and a first recorded species in Japan from the intertidal crabs, respectively. The “Yoron Jisshu” can also produce discoveries of great academic value.

In the last quarter-century, our faculty, the Faculty of Science, has gone through re-organizations twice. From 1997 to the present, this practical training course “Yoron Jisshu” has been conducted under the name field science as part of the Department of Earth and Environmental Science and frequently been led by many geologists as well as biologists. As a result, the program has grown for learning more broadly and comprehensively about the “natural environment,” including topography and geology. In 2004, the former dean of our faculty presented a letter of appreciation to Mr. KAWAMOTO, the “master” who was instrumental in accepting the field program over the years. Looking at the students waiting for

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the ferry to return Kagoshima after learning about the nature of the southern island, we hope that they have broadened their horizons toward the outside world ever so slightly.



Let's take Yurigahama Beach sandbar! Field course program, where students learn from the great nature, is filled with a charm not found in any classroom lectures.