Shiretoko Field Study Report

1. Introduction

On the first day of the Shiretoko field study, we arrived at Memanbetsu Airport and then headed to the coast to observe drift ice. Drift ice is one of the most symbolic natural phenomena of winter in Shiretoko. The view of ice spreading across the coastline was extremely impressive. Although I had previously seen drift ice only in photographs and videos, observing it directly allowed me to better understand the harsh natural environment and the characteristics of the marine ecosystem in this region.

Drift ice originating from the Sea of Okhotsk carries nutrients and plays an important role in shaping the marine ecosystem of northern Japan. Observing this phenomenon in person helped us recognize the strong connection between climate, ocean processes, and regional fisheries.

Figure 1. Drift ice observed along the Shiretoko coastline.

2. Observation of Local Fisheries

After observing the drift ice, we moved to the local harbor and visited fishing vessels used by fishermen in the region. By observing the boats and port infrastructure, we were able to understand how the fishing industry operates in this remote area.

Fisheries in Shiretoko are strongly influenced by natural conditions such as sea temperature, weather, and the presence of drift ice. The port facilities and vessels reflect how local fishermen adapt to these environmental conditions. This visit allowed us to see the practical side of fisheries as a regional industry closely connected to the surrounding ecosystem.

Figure 2. Fishing vessels observed in the Shiretoko harbor.

3. Visit to Hokuyo Kyodo Fishery Co., Ltd.

After visiting the harbor, we visited Hokuyo Kyodo Fishery Co., Ltd., where we attended a lecture given by the company president, Mr. Ito. During the lecture, he explained the characteristics of fisheries in Shiretoko, the challenges the industry currently faces, and the potential directions for future development.

One of the most interesting aspects discussed was the cooperative nature of fisheries management in the region. Instead of competing purely as individual companies, fishermen share marine resources and cooperate in managing them. For example, fishermen collectively adjust the mesh size of fishing nets and establish rules to maintain sustainable resource use. This form of local cooperation can be understood as a type of local industry governance aimed at maintaining long-term sustainability of marine resources.

The lecture also highlighted the impacts of climate change on fisheries. Rising sea temperatures have changed fish distribution patterns. In recent years, the catch of chum salmon has decreased, while other species have increased. These changes create economic uncertainty for fishermen and may require new adaptation strategies.

Figure 3. Field study visit to Hokuyo Kyodo Fishery Co., Ltd.

4. Ecosystem Services and Blue Carbon

From the perspective of global environmental studies, marine ecosystems such as kelp forests provide important ecosystem services. Seaweed habitats support marine biodiversity, provide shelter for fish, and contribute to overall ecosystem productivity.

In addition, kelp and other marine algae absorb carbon dioxide during their growth process. Therefore, they are increasingly discussed in the context of Blue Carbon, which refers to carbon captured and stored in marine ecosystems. Some studies and policy initiatives are currently exploring ways to calculate the amount of carbon absorbed by seaweed and integrate this value into carbon credit systems.

These approaches demonstrate how environmental conservation and economic value may be linked. If kelp cultivation contributes to both marine ecosystem restoration and carbon sequestration, it could become an important strategy for sustainable regional development.

5. Fisheries and Tourism Collaboration

Through the lecture and field observations, I realized that one of the most promising future directions for Shiretoko may be the integration of fisheries and tourism.

Traditionally, fisheries, tourism, and agriculture in the region have developed somewhat independently. However, new forms of collaboration have begun to emerge. For example, seafood caught by local fishermen is supplied to hotels and restaurants, and visitors can participate in activities such as port tours or fishery experiences.

Another example is the use of innovative sales methods such as seafood vending machines and online platforms, which allow local seafood products to reach consumers more directly.

Figure 4. A seafood vending machine selling locally caught fish products.

From a sustainability perspective, combining fisheries and tourism could generate multiple benefits. It may diversify income sources for fishermen, reduce economic risks caused by fluctuating fish catches, and increase public awareness of marine ecosystems.

6. Future Perspectives

Looking toward the future, several important possibilities can be identified.

First, the development of new technologies for kelp cultivation may improve production while also supporting marine ecosystem restoration. Second, further research on Blue Carbon could help quantify the environmental value of seaweed ecosystems and connect conservation activities with economic incentives.

In addition, collaboration between fisheries and tourism may create new career opportunities for younger generations. For example, local residents may work as fishing guides, environmental educators, or entrepreneurs involved in marine tourism. Such diversification may help address the decline in fishery workers while strengthening the regional economy.

From this perspective, Shiretoko can be seen as a socio-ecological system in which fisheries, tourism, and environmental conservation interact with one another. By developing integrated strategies that balance economic development and ecosystem protection, the region may achieve a more sustainable and resilient future.

7. Conclusion

Through this field study, I gained a deeper understanding of how fisheries in Shiretoko are closely connected to the natural environment, regional communities, and emerging tourism activities.

Concepts such as ecosystem services and Blue Carbon highlight the environmental value of marine ecosystems, while new forms of cooperation between fisheries and tourism may strengthen regional sustainability.

Shiretoko therefore represents an important example of how environmental conservation and local economic development can be integrated within a regional socio-ecological system.

References

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