

Hokkaido University

Faculty of Fisheries Sciences •
Graduate School of Fisheries Sciences •
School of Fisheries Sciences
SUMMARY

2022.07





HAKODATE Campus



Message from the Dean

Prof. Yasuaki TAKAGI

The future of Fisheries Sciences –
to better connect humans and the sea

Our mission is closely related to the 14th goal of the
Sustainable Development Goals (SDGs):

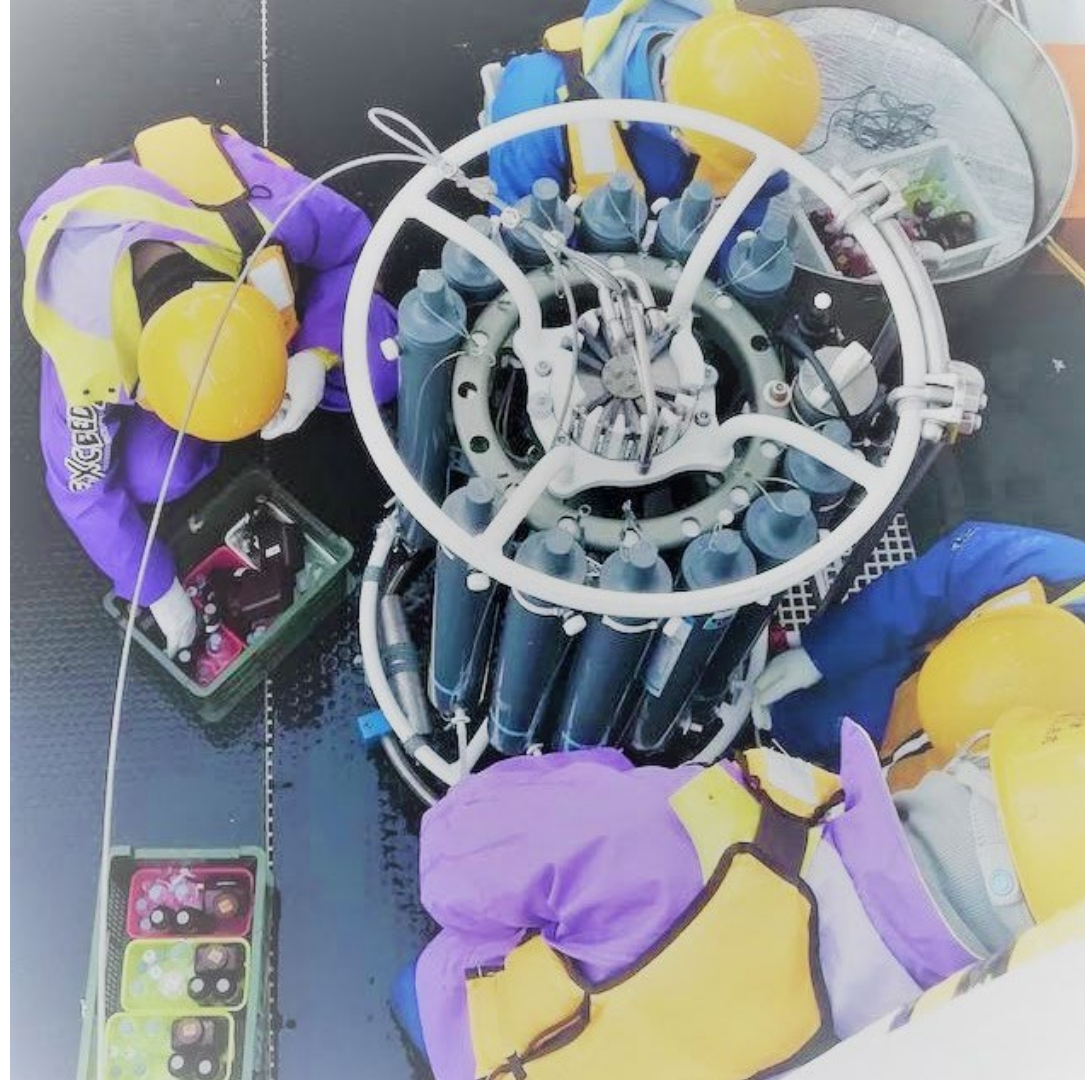
*‘Conserve and sustainably use the oceans, seas and marine
resources for sustainable development’*

To conserve marine resources and maintain a healthy ocean
for future generations, local and global fisheries must
become eco- and human-friendly, sustainable industries. We
are joining the global effort towards “blue transformation” of
these industries through fisheries research and education.

3



Admission policy [School of Fisheries Sciences]



Our goal

The School of Fisheries Sciences fosters talented persons with the skills needed to solve problems concerning the use and sustained production of aquatic resources, and environmental conservation through systematic teaching of a wide range of scientific fields in conjunction with technical knowledge about fisheries science.

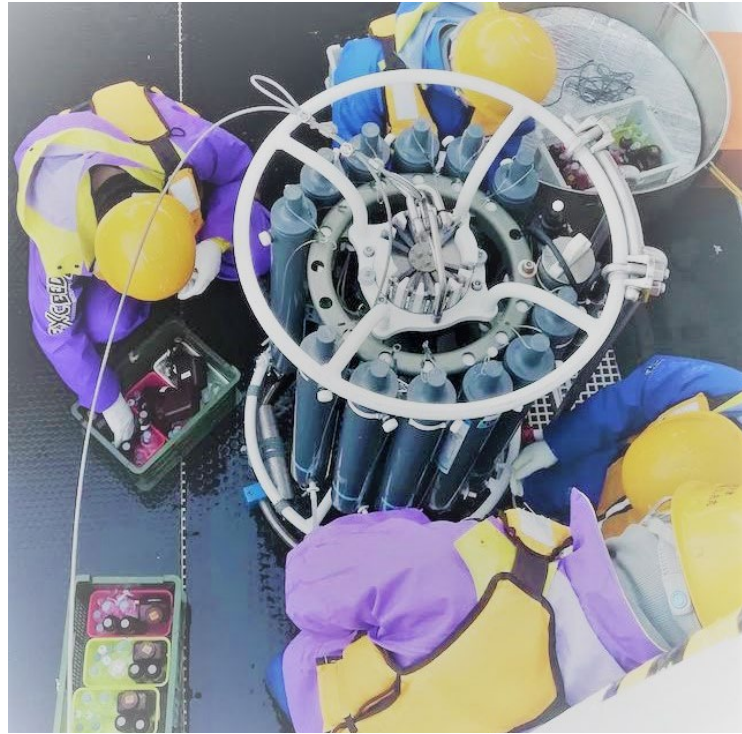
Our philosophy

The School of Fisheries Sciences contributes to human prosperity through systematic fisheries science education aiming at the sustained production and use of aquatic resources and environmental conservation.



Admission policy

School of Fisheries Sciences



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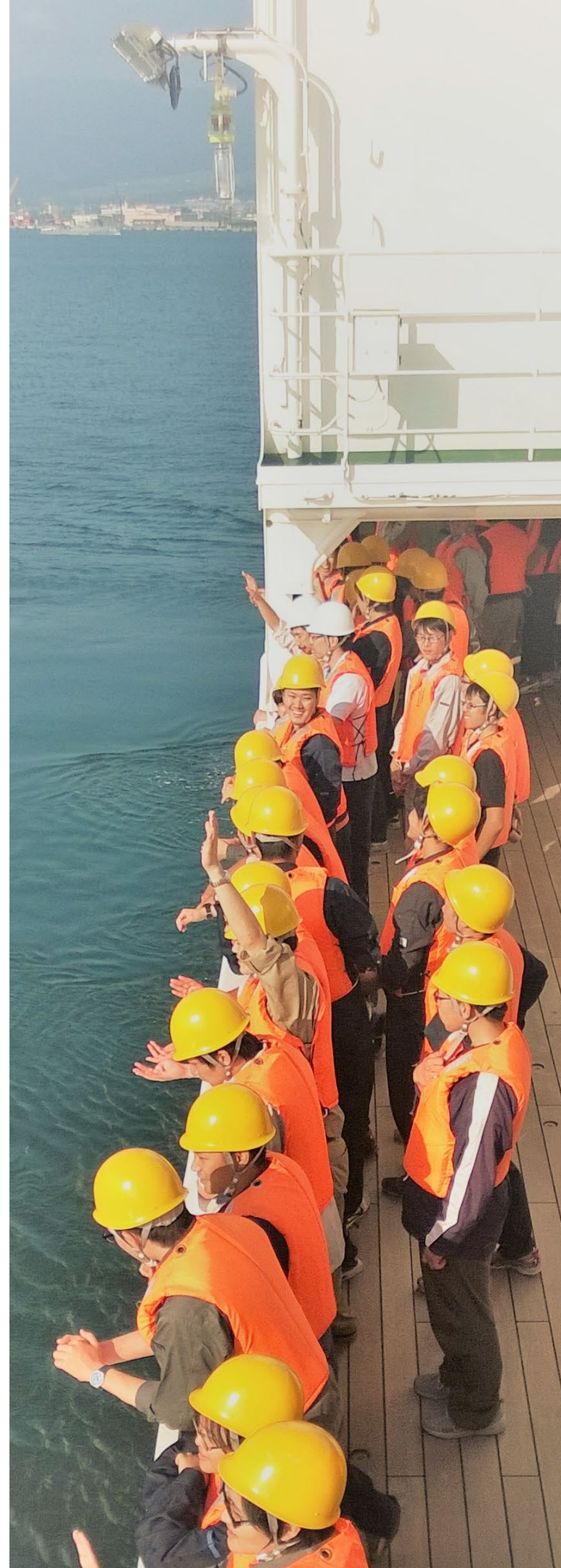
Our goal

The School of Fisheries Sciences fosters talented persons with the skills needed to solve problems concerning the use and sustained production of aquatic resources, and environmental conservation through systematic teaching of a wide range of scientific fields in conjunction with technical knowledge about fisheries science.

Educational goals

1.
To foster creative talented persons who can contribute to human survival and prosperity through fisheries science in areas such as the oceans, environments, organisms, resources, and an associated wide range of disciplines
2.
To foster eager and internationally talented persons having knowledge about balancing environmental conservation and production on a global scale to enable the sustainable production of aquatic bioresources
3.
To foster leading talented persons who can contribute to society through the use of aquatic bioresources

Types of students that we seek



1. People who are strongly motivated to study aquatic environments, life, and resources, and to contribute to human society by balancing both biological production and the environment
2. People who are strongly motivated to learn about biological functions of aquatic organisms and/or chemical components to develop human society through research on efficient use of aquatic biological resources
3. People who are strongly motivated to have great impacts and/or take leadership in national and/or international organizations or projects on issues concerning the oceans, fisheries, and environmental policy and management

Admission policy

[Graduate School of
Fisheries Sciences]



Our goal

The school fosters creative and motivated people with advanced research capabilities, a broad outlook, and the energy to work at global scales through graduate education focusing on aquatic environments, natural resources, life and economics. For that purpose, it aims to acquire and teach the skills and knowledge needed to advance sustainable productions and efficient use of aquatic biological resources, and to conduct basic and applied studies to help conserve aquatic ecosystems.

Our philosophy

The school investigates the conservation of aquatic ecosystems, sustainable production, and efficient use of biological resources for the long-term development of human society. For that purpose, it aims to acquire and teach the skills and knowledge needed to advance sustainable production and efficient use of aquatic biological resources as the common property of mankind, and to conduct basic and applied studies to conserve aquatic ecosystems.

Educational goals

Through graduate education focusing on aquatic environments, resources, life, and economics, the school aims to nurture people who have advanced research capabilities, have a broad outlook, are inspired to work globally, and are creative and motivated through the following educational goals:

1.

To foster people who have a desire to strive for harmonious use of aquatic resources in conserving diverse aquatic environments that ensures rich biological production and human well-being

2.

To foster energetic people with advanced knowledge and skills for efficient use of multi-faceted aquatic biological resources and for returning these outcomes to human society through scientific investigations of aquatic organisms and their biological functions



Types of students that we seek

1. People who are strongly motivated to study aquatic environments, life, and resources, and to contribute to human society with their advanced knowledge and techniques on aquatic environments and biological sciences
2. People who are strongly motivated to study biological functions of aquatic organisms and/or chemical components to develop human society through research on efficient use of aquatic biological resources
3. People who are strongly motivated to have great impacts or take leadership in national and/or international organizations or projects on issues concerning marine, fisheries, and environmental policy and management using their expertise in advanced research and broad social experiences

Brief History

Visit our web site for more [details](#)

1907

- 1935 The Hakodate College of Fisheries was established.
- 1936 The Toya Lake Station for Environmental Biology was established.
- 1940 The Nanae Fish Culture Experimental Station was established.
- 1944 The Hakodate College of Fisheries was reorganized.
- 1949 The Training Ship "Hokusei-Maru" was converted from a navy boat.
- 1949 The Hakodate College of Fisheries was transferred to Hokkaido University.
- 1954 The Hakodate College of Fisheries, Hokkaido University was abolished

- 1907 The School of Fishery was established in the Sapporo Agriculture College.
- 1907 The Sapporo Agricultural College was made part of the Tohoku Imperial University.
- 1909 The Training Ship "Oshoro-Maru" was built.
- 1918 The School of Fishery, Tohoku Imperial University changed to the School of Fishery, Hokkaido Imperial University.
- 1927 The Training Ship "Oshoro-Maru II" was built.
- 1935 The School of Fishery, Hokkaido Imperial University was abolished.

1935

- 1940 The Department of Fisheries was established as a part of the Faculty of Agriculture, Hokkaido Imperial University.
- 1947 The Hokkaido Imperial University was renamed Hokkaido University.
- 1949 The Hakodate Technical School of Fisheries and the Department of Fisheries, Faculty of Agriculture, Hokkaido were combined to establish the Faculty of Fisheries, Hokkaido University.
- 1953 The Department of Fisheries, Faculty of Agriculture, Hokkaido University was abolished.

1949

- 1949 The Faculty of Fisheries was established in Hakodate.
- 1949 Four departments, i.e., General Fishery, Pelagic Fishery, Biology and Aquaculture, and Chemistry and Marine Products Technology, were established.
- 1953 The specialized Training Course in Pelagic Fishery (one year) was established.
- 1954 The Training Course for teacher's license in fisheries was established.
- 1957 The Training Ship "Hokusei-Maru II" was commissioned.
- 1962 The Training Ship "Oshoro-Maru II" was commissioned.
- 1963 The graduate school was named the Graduate School of Fisheries Science, and its term was set at five years.
- 1963 The Research Institute of North Pacific Fisheries was established.
- 1964 The Department of Chemistry and Marine Products Technology was divided into the Department of Chemistry and the Department of Food Science and Technology.
- 1966 The Department of General Fishery and the Department of Pelagic Fishery merged into the Department of Fishing Science.
- 1970 The Usujiri Fisheries Laboratory was newly established in Usujiri, Minami-Kayabe-cho.
- 1971 The Research Vessel "Ushio-Maru" was commissioned.
- 1976 The Training Ship "Hokusei-Maru III" was commissioned.
- 1983 The Training Ship "Oshoro-Maru IV" was commissioned.
- 1992 The Research Vessel "Ushio-Maru" was commissioned.
- 1995 The Research Institute of North Pacific Fisheries was abolished.
- 1995 The Faculty was reorganized into four departments: Fisheries Oceanography and Marine Science, Marine Production System Science, Marine Biological Science and Marine Bioresources Chemistry.

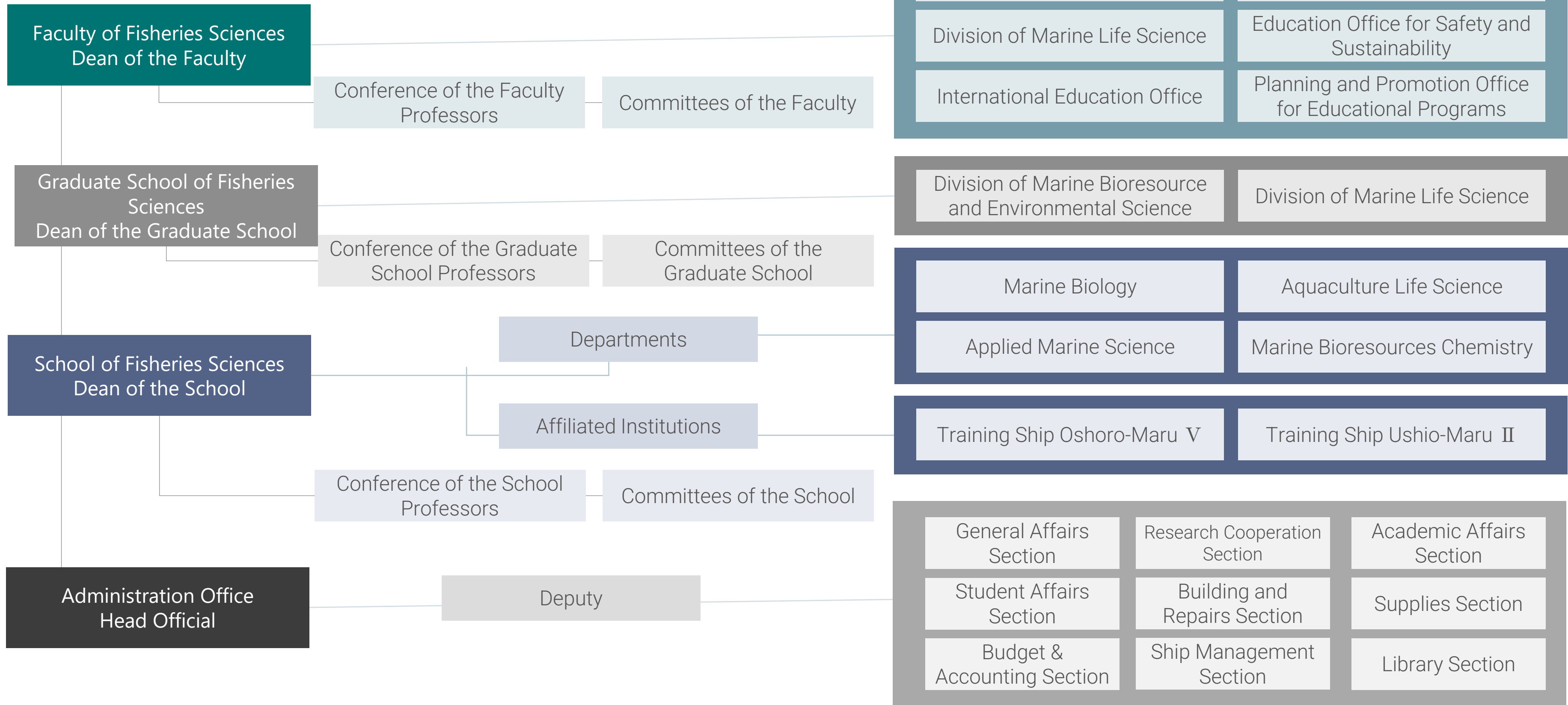
2000

- 2000 The Graduate School of Fishery Science was consolidated from 4 divisions into 2 divisions comprising 11 core laboratories.
- 2000 The school was renamed the Graduate School of Fisheries Sciences.
- 2001 The Toya Lake Station for Environmental Biology, the Nanae Fish Culture Experimental Station and Usujiri Fisheries Laboratory were transferred to the Field Science Center for Northern Biosphere.
- 2002 The specialized Training Course in Pelagic Fishery was abolished.
- 2002 The Training Ship "Hokusei-Maru III" was decommissioned.
- 2002 The Ship's name changed to The Training Ship "Ushio-Maru II".

2005

- 2005 The Graduate School of Fisheries Sciences was divided into an Educational Part (Graduate School of Fisheries Sciences) and a Research Part (Faculty of Fisheries Sciences)
- 2006 The Faculty was reorganized into four departments: Marine Biology and Applied Marine Science, Aquaculture Life Science and Marine Bioresources Chemistry.
- 2013 The Laboratories of Marine Bioresource and Environment Sensing, Marine Industrial Science and Technology, and Marine Products and Food Science were abolished, and the Laboratories of Marine Environment and Resource Sensing, Fisheries Engineering, Interdisciplinary Sustainability Studies, Marine Food Science and Technology, and Marine Chemical Resource Development were established.
- 2014 The Training Ship "Oshoro-Maru V" was commissioned.

Organization Chart



Executive officers

As of May 1, 2022



Prof. Yasuaki TAKAGI

Dean



Prof. Masashi HOSOKAWA

Vice Dean



Prof. Yutaka WATANUKI

Vice Dean



Prof. Yasuzumi FUJIMORI

University Senator

Division Chairs Assistant Charis

Prof. Tohru MUKAI

Chair, Division of Marine
Bioresource and
Environmental Science

Prof. Hiroyuki MIZUTA

Chair, Division of Marine
Life Science

Prof. Satoshi WADA

Asst. Chair, Division of
Marine Bioresource and
Environmental Science

Prof. Hideki KISHIMURA

Asst. Chair, Division of
Marine Life Science

Department Chairs

Prof. Hideaki KUDO

Department of Marine
Biology

Prof. Akihide KASAI

Department of Applied
Marine Science

Prof. Tomoo SAWABE

Department of Aquaculture
Life Science

Prof. Koji YAMAZAKI

Department of Marine
Bioresources Chemistry

No. of employees

Full Prof.	Assoc. Prof.	Lecturer	Asst. Prof.	Research Assoc.	Sub total	Officials	Technical Officials	Sub total	Total
22	28	0	27	0	77	25	39	64	141

As of May 1, 2022

Enrollment in 2022 Academic Year

□ School of Fisheries Sciences

□ : No. of returnee students

Enrollment Quota		Applicants	Applicants Accepted	Enrollees	Students from abroad
Department General	155	716 [1]	179	170	5
Comprehensive Selection	20	45	6	6	
General	40	—※	—※	—※	—※

※Not calculatable

□ Graduate school of Fisheries Sciences

No. of applicants and enrollees in autumn is not included

Degree	Quota	Applicants				Enrollees			
		Hokkaido University	Other University	Others	Total	Hokkaido University	Other University	Others	Total
Master	114	140	14	0	154	100	7	0	107
Doctor	19	7	5	0	12	6	5	0	11

Number of Students

As of May 1, 2022

Category		定員	現員	
Undergraduate Students	1st year	215	—※	
	2nd year	215	226	
	3rd year	215	211	
	4th year	215	210	
	Sub-total	860	647 (2 nd to 4 th graders)	
Graduate Students	Master Course	1st year	114	109
		2nd year	114	127
		Sub-total	228	236
	Doctoral Course	1st year	19	15
		2nd year	19	16
		3rd year	19	26
		Sub-total	57	57
Auditors		—	0	
Special Auditors		—	5	
Credit Students		—	0	
Research Students		—	13	
Special Research Students		—	1	
合計		—	959	

※First-year undergraduate students are not included because they are students of the General Education Department.

Status of Students After Graduating

Graduating Students In 2021

As of May 1, 2022

Undergraduate

Graduates	Number Pursuing further academic degrees	Number finding employment						Other
		Research Institution	Teacher	Public Sector	Private Sector	Other	Total	
208	140	0	0	9	45	0	54	14

Master

Graduates	Number Pursuing further academic degrees	University Teacher							Other
		University Teacher	Research Institution	Teacher	Public Sector	Private Sector	Other	Total	
90	8	0	7	0	7	65	0	79	3

Doctor

Graduates	Other								Other
	University Teacher	Research Institution	Teacher	Postdoc·Fellow	Public Sector	Private Sector	Other	Total	
13	3	3	0	5	1	1	0	13	0

Number of Graduates

As of May 1, 2022

Category	Years	Graduates
School of Fishery, Agricultural College, Tohoku Imperial University	1907-1918	279
School of Fishery, Hokkaido Imperial University	1918-1935	700
Hakodate College of Fisheries	1935-1944	672
Hakodate College of Fisheries	1944-1949	1,324
Teacher's School of Fisheries Hakodate College of Fisheries	1945-1951	121
Advanced Course in General Fisheries Science, Faculty of Fisheries, Hokkaido University	1954-1966	59
School of Fisheries Sciences, Hokkaido University	1949-	13,057
Special Advanced Training Course in Pelagic Fisheries, Faculty of Fisheries, Hokkaido University	1953-2002	665
Graduate School of Fisheries Science, Hokkaido University (Master)	1953-2000	1,181
Graduate School of Fisheries Science, Hokkaido University (Doctor)	1953-2000	581
Graduate School of Fisheries Sciences, Hokkaido University (Master)	2000-2005	590
Graduate School of Fisheries Sciences, Hokkaido University (Doctor)	2000-2005	244
Graduate School of Fisheries Sciences, Hokkaido University (Master)	2005-	1,582
Graduate School of Fisheries Sciences, Hokkaido University (Doctor)	2005-	274
合計	—	21,329

※Numbers listed in “Doctor “ categories include both coursework and dissertation doctorate programs

Number of International Students

As of May 1, 2022

From 13 countries, 61 students in Total





USA	University of Alaska University of Hawaii at Manoa Institute of Marine and Environmental Technology, University of Maryland	Czech	Faculty of Fisheries & Protection of Waters, University of South Bohemia in Ceske Budejovice,	Korea	Pukyong National University Korea Maritime University College of Marine Science, Gyeongsang National University
Indonesia	University of Washington Faculty of Fisheries and Marine Science, Diponegoro University Faculty of Fisheries and Marine Science, Universitas Brawijaya	New Zealand	University of Otago		College of Life Science, Kangnung-Wonju National University College of Ocean Science, Cheju National University College of Fisheries and Ocean Science, Chonnam National University
Canada	University of British Columbia	Finland	University of Oulu		
Cambodia	Fisheries Administration of Kingdom of Cambodia Faculty of Fisheries Royal University of Agriculture	Vietnam	College of Aquaculture and Fisheries, Can Tho University		
Singapore	Faculty of Science, National University of Singapore	Poland	University of Warmia and Mazury University of Gdansk Institute of Animal Reproduction and Food Research of the Polish Academy of Sciences in Olsztyn	China	Huazhong Agricultural University Shanghai Ocean University Dailian Fisheries University Ocean University of China Zhejiang Ocean University
Thailand	Kasetsart University Department of Fisheries of the Kingdom of Thailand Walailak University Southeast Asian Fisheries Development Center (SEAFDEC)	Malaysia	School of Fisheries and Aquaculture Sciences, Universiti Malaysia Terengganu		
		Myanmar	Patheingyi University		
		Morocco	National Institute of Fisheries Research		
		Russia	Institute of Marine Biology, Russian Academy of Science-Far Eastern Branch,		
		Taiwan	National Taiwan Ocean University National Chung Hsing University National Dong Hwa University		

International Academic Exchange

As of May 1, 2022

External funds

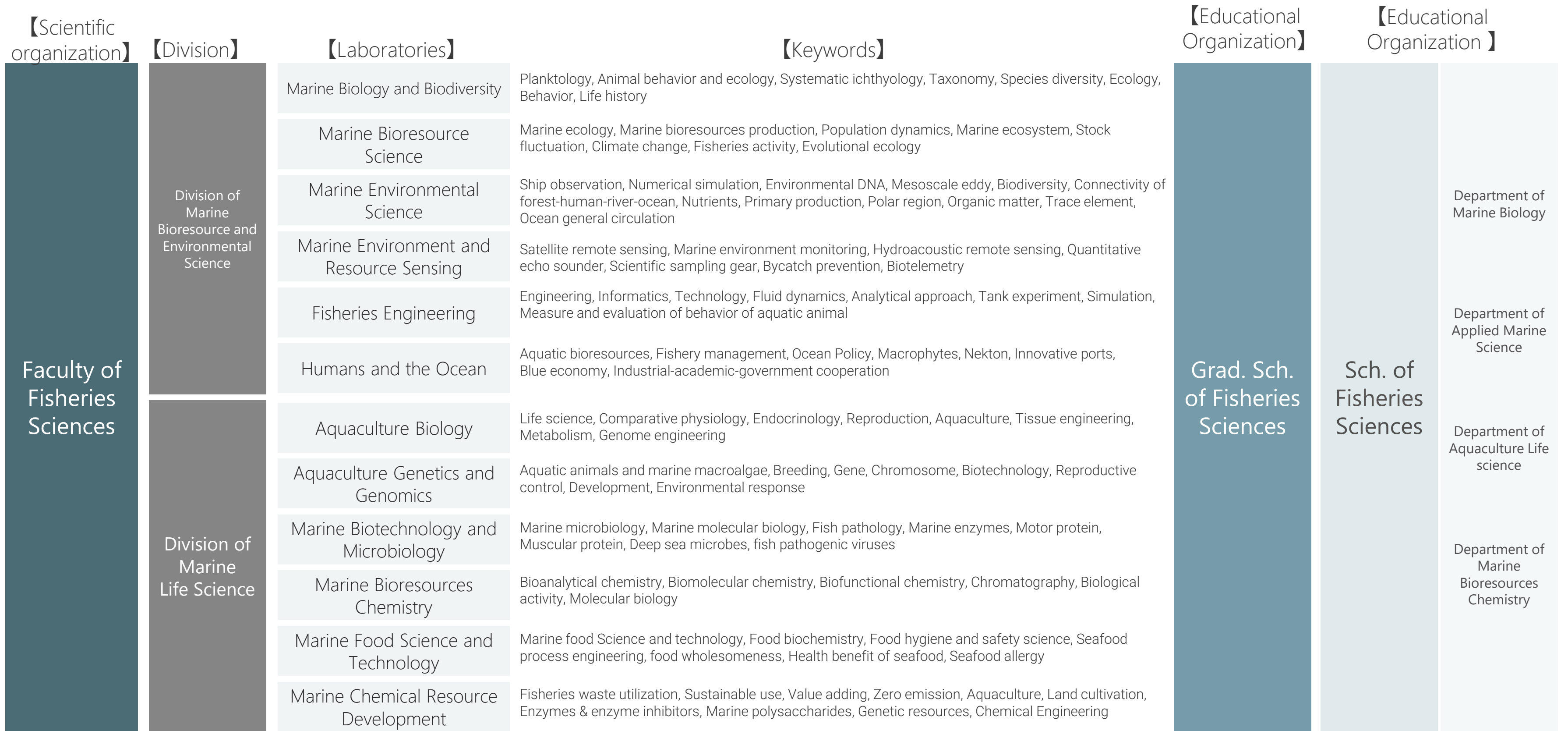
Data from FY 2021

Category	Number	Budget (Yen)
Grants-in-Aid for Scientific Research	71	165,433,000
Other grants	2	3,385,000
Donation	46	47,882,776
Collaboration	25	36,081,592
Contract Research	22	77,070,830
Contract Projects	5	7,611,045
Government subsidy	10	22,839,694
Academic consultant	6	1,231,000

□ Selected grants-in-Aid for Scientific Research in 2022

- Scientific Research A Study on the impact of climate change on the marine ecosystem lower trophic levels by using the historically collected samples
- Scientific Research B Study on fish community structure using environmental DNA under the Arctic sea ice
- Scientific Research B Exploring marine natural products that control dynamic cellular responses
- Scientific Research B Studies on regulatory mechanisms underlying steroidogenic enzymes expression that governs sex differentiation, oocyte growth and maturation in teleost
- Scientific Research C Elucidation of improvement in locomotion and mobility brought about by softness and suppleness of movement of fins
- Scientific Research C Regulation of carbon-nitrogen metabolic balance by ethylene precursors in the red alga *Susabinori*
- Scientific Research C In-Situ measurement method for quantitative evaluation of the effect of an artificial Light on fish behavior
- Scientific Research C Reduction of the risk of histamine food poisoning using the enzyme-inhibiting function of polyphenols
- Early-career Scientists Development of acoustic discrimination method for marine organisms inhabiting Funka Bay, Hokkaido using weighing fish finder
- Early-career Scientists Diverse host-recognition mechanisms of *Vibrio parahaemolyticus* phage: development for control of *Vibrio parahaemolyticus*
- Challenging Research Diatoms Consume Nutrients in the Dark Sea -A Hypothesis for Survival Strategy-

Structure of our schools





Remarkable
education • science

Hakodate Mariculture project

Cabinet office [Grant for creation of local industry by closely co-working with local universities]

Our grant proposal entitled as 'Transformation into sustainable fisheries and ocean city based on aquaculture – toward to regional carbon neutral aquaculture' has been accepted by cabinet office of the government of Japan. The grant proposal was submitted by Mayor of Hakodate, and Hokkaido University has been closely working with Hakodate and other colleagues as a core institute for the project. The project conducts research in complete aquaculture domain on Chinook Salmon, so-called King salmon, and on Kelp together, then these dual aquaculture system would lead us regional carbon neutral. Hokkaido University is going to establish 'Regional Fisheries Co-creation Center at Hakodate' which contribute to strengthen regional collaboration between industry, society and academia. The center also create a regional education system to produce talented person for local society.





Balance de Ocean

'Balance de Ocean' is an educational program that aims to cultivate future marine top-scientists. The program provides conventional classroom lectures and practical training, as well as online materials for reinforcement and enrichment, and to help students establish and develop their understanding of the ocean. The program also aims to contribute to the internationalization of the university through use of the online format.

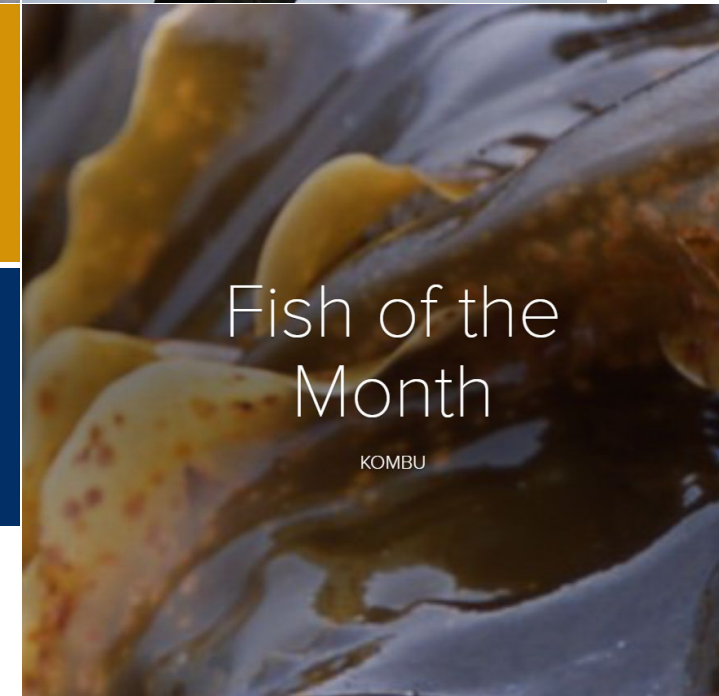
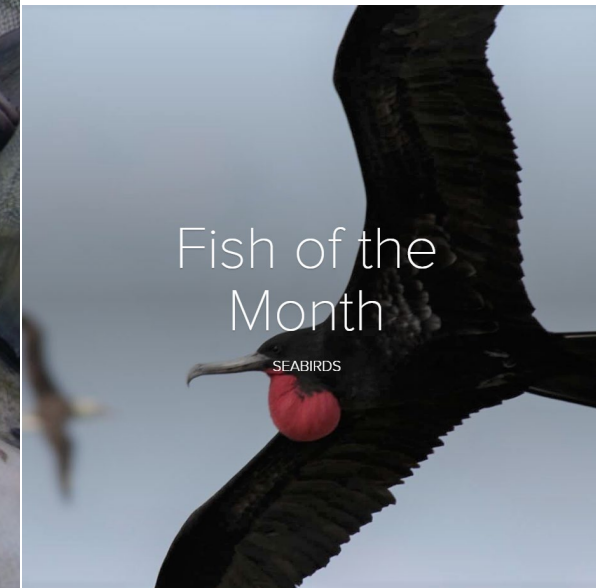
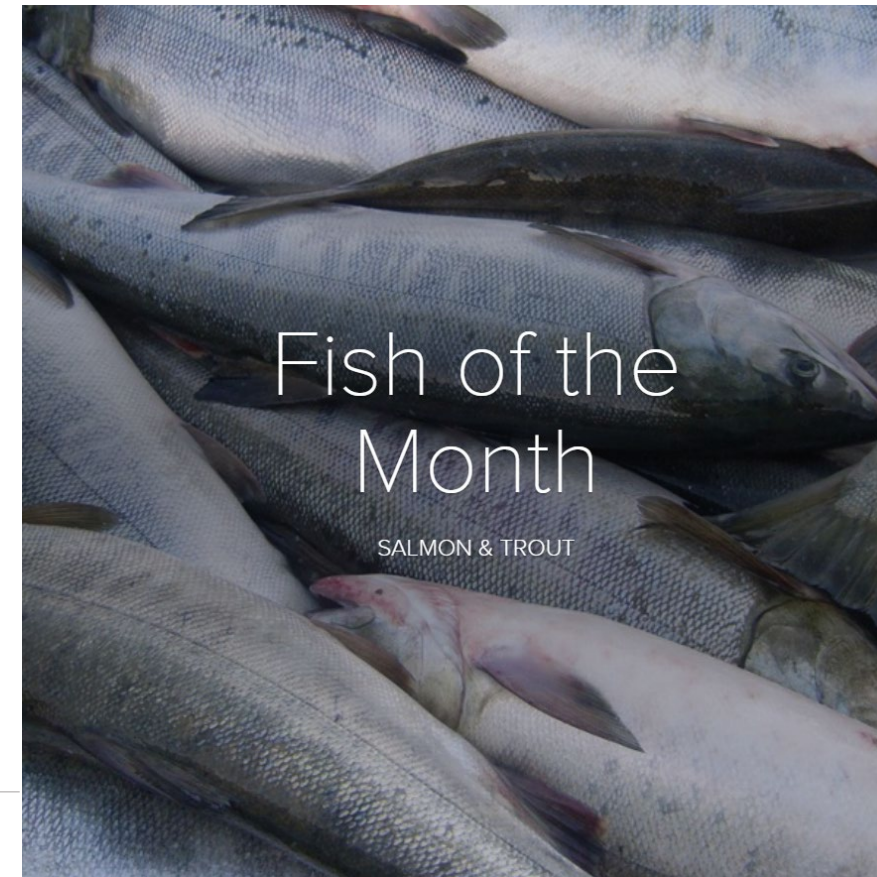
School of fisheries sciences ×SDGs



Numerous education and research is related to Sustainable Development Goals (SDGs) at school of fisheries sciences. Especially, LASBOS provides on-line teaching materials by transmitting research and educational information related to SDGs to students and the public. [LASBOS SDGs](#) introduces education and research from our school contribute to which goals of the SDGs. For example, ~40 subjects of education/research contribute to 14th goal of the SDGs 'Conserve and sustainably use the oceans, seas and marine resources for sustainable development'. Others also contribute to achievement for SDGs.

Fish of the Month [FoM]

“Fish of the Month (FoM)” is a creative web-based project posting up to date information on marine and aquatic life. This project aims making people understand greatness of coexisting of various organisms in the sea, by cooperation with private company. Scientific based valuable text with fine pictures are shown for marine organisms such as kelp, salmon and trout, seabird, and sea cucumber. These item would reach to ~20 contents by 2025. Due to involvement of SDGs view points for the way of informing, this project could also contribute to achievement of multiple target for SDGs.



ArCS II Arctic Challenge for Sustainability II



Polar region is one of the most sensitive area for on-going global changes, and thus is important area where scientific research is conducting broadly and densely. The Arctic waters especially is anxiety in changing its marine ecosystem (ex. fauna/flora and feeding activities) due to drastically sea-ice shrinking. Profs. M. Ueno and A. Yamaguchi are involved in the project as a principal investigator for a physical/chemical/biological observational research program “Variability of Arctic water environment and assembly of its general-purpose dataset” and “Impact of changing coastal Arctic water environment on human society”. These research results would be fed on better understanding of changing Arctic ecosystem and evaluation of social impact in future.

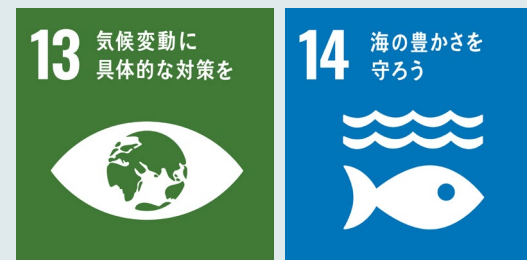


Transit observation on red tide in the eastern Hokkaido coastal water by *Ushio-maru*

※Press release on Oct. 2021 First time transit observation of red tide in the eastern Hokkaido coastal water (Prof. T. Iida, *Ushio-maru*)

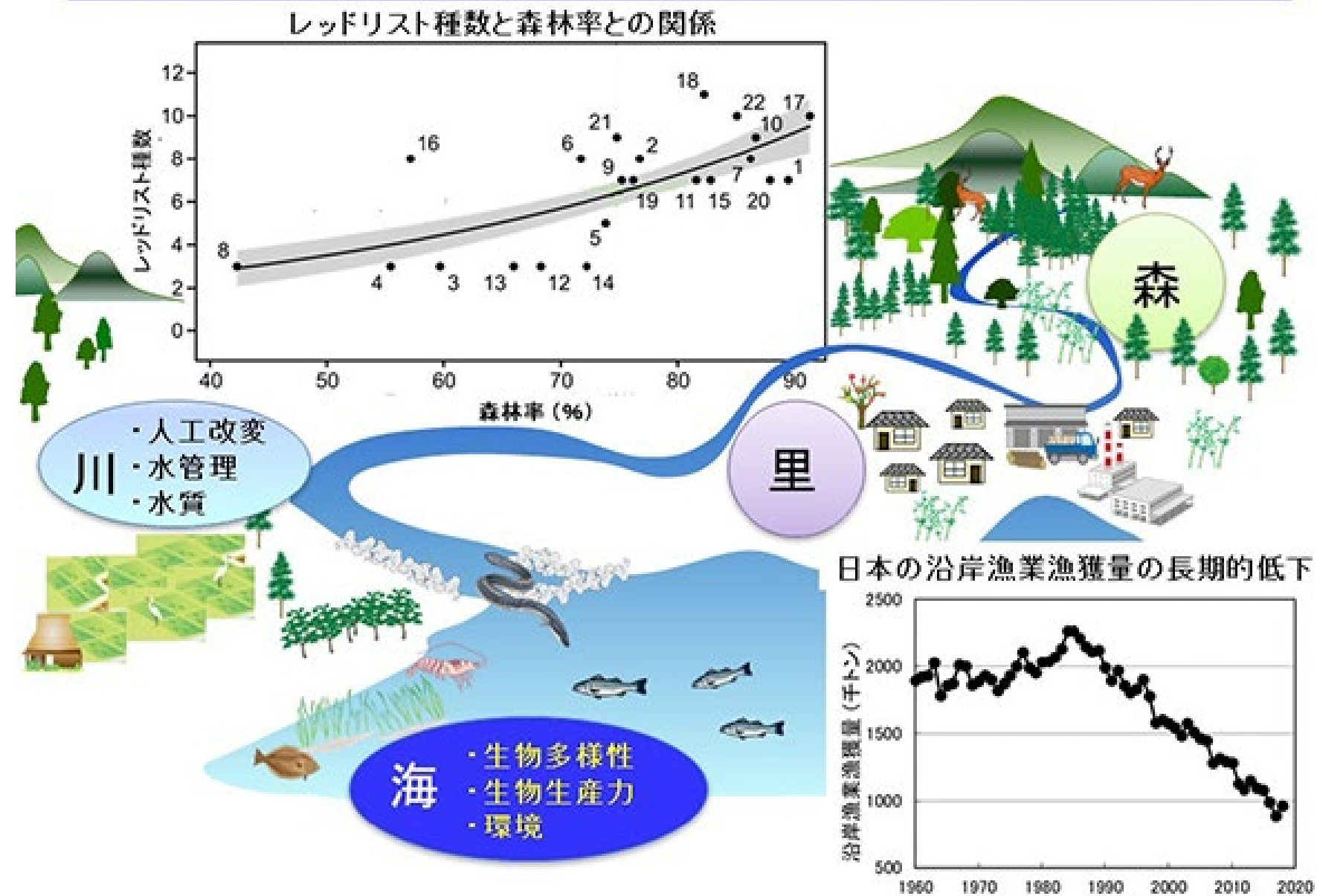
Protect fishery from “red tide”

Red-tide (harmful algal bloom) has been broadly observed in the eastern Hokkaido coastal water since mid Sept. 2021. The red tide might impact seriously on survive of salmon and sea urchin, resulting quit high economic damage on fishery in 2021. Training vessel *Ushio-maru* successfully observed the red tide in the eastern Hokkaido coastal water in Oct. 2021. We continue analysis on the data set and understand actual state of the red tide for future prospect.



Based on satellite data from JAXA
Density of Chl. *a* in the eastern Hokkaido coastal water
Warm color shows high density

森林を守ることが海の生物多様性を守ることにつながる



Forest protection leads to protect marine biodiversity

It is quite tough to understand relationship scientifically between forest - urban area - sea although the term of "forest is a lover of sea" is well-known. Prof. Akihide Kasai has partly explained on the mystery by observation of fish species composition using eDNA technique at multiple river mouth areas in Japan. There is a significant relationship between number of the red listed fish species and forest coverage ratio on river catchment area.

※Press release on Oct. 2021. Forest protection leads to protect marine biodiversity



New Species Sato's Beaked Whale



Cetaceans (e.g. dolphins and whales) are at the apex of marine ecosystems and are sensitive to the influence of the ecosystem as a whole. Currently, 91 species of cetaceans are known, but new species are still being found. The research group Stranding Network Hokkaido, led by Professor Matsuishi Takashi Fritz, has been vigorously researching beached cetaceans in Hokkaido since 2007. In the course of this research, six specimens of cetaceans known to be Baird's beaked whales were analysed jointly with the National Museum of Nature and Science and were found to be different from the conventional Baird's beaked whales based on their genes and external morphology, and were recognised as the new species *Berardius minimus* in 2019.



Published paper Yamada et al. 2019 <https://doi.org/10.1038/s41598-019-46703-w>
Pressrelease https://www.hokudai.ac.jp/news/19090904_pr.pdf



Affiliated
Institutions



Training Ship *Oshoro-maru*

1. Field of experiments and training

Physical Oceanography, Chemical Oceanography, Biological Oceanography, Marine Ecology, Marine Bioresource production, Fisheries Resource Measurement, Fisheries behavioral Research, Satellite Fisheries Oceanography, Acoustical Fisheries Oceanography, Fisheries and Marine Technology Fisheries Informatics and Engineering, Aquaculture Biology, etc.

2. Fishing methods

Stern trawling, Longline fishing, Drift gill-net fishing, Squid jigging, etc.

3. Main areas of research

- ① Physical, chemical, and biological studies of the marine environment, marine bioresource production
- ② Fluctuations in sea and fishery conditions, Changes in bioresources, Resource management
- ③ Applied physics of fishing-gear, fishing methods, and fishing-gear design
- ④ Maneuverability and stability of fishing boats
- ⑤ Ecology of fishes, cephalopods, seabirds, marine animals, and plankton
- ⑥ Efficiency and safety engineering of fishing machinery
- ⑦ Resource measurement, Hydroacoustic remote sensing
- ⑧ Metabolism, growth, and reproduction of fishes

■ Gross Tonnage: 1,598 tons ■ Stern-Trawler ■ Main-Engine: Propulsion motor×2, Max. continuous output 1,000:300kW×2 ■ Main generators: Main generators×3 ■ Propulsion: 4 blades controllable-pitch propeller ■ Service Speed: app. 12.5 knots ■ Range: app. 10,000 nautical miles ■ Complement: 99 persons ■ Completion: July, 2014



Training Ship *Ushio-maru*

1. Field of experiments and training

Physical Oceanography, Chemical Oceanography, Biological Oceanography, Marine Ecology, Marine Bioresource production, Fisheries Resource Measurement, Fisheries Behavioral Research, Marine Chemical Resource Development

2. Fishing methods

Stern trawling, Longline fishing, Gill-net fishing, Single-hook fishing, Squid jigging, etc.

3. Main areas of research

- ① Physical, chemical, and biological studies of the marine environment, marine bioresource production
- ② Fluctuations in sea and fishery conditions, Changes in bioresources, Resource management
- ③ Applied physics of fishing-gear, fishing methods, and fishing-gear design
- ④ Ecology of fishes, cephalopods, seabirds, marine animals, plankton, and benthos
- ⑤ Efficiency and safety engineering of fishing machinery
- ⑥ Resource measurement, Hydroacoustic remote sensing
- ⑦ Exploring the useful materials from marine organisms

■Gross Tonnage :179 tons ■Long Forecastle Type ■Main-Engine:

Diesel-Engine 809kW (1100hp) × 800 rpm × 1 set ■ Service

Speed: 11.0 knots ■Range: 2,200 nautical miles ■Complement: 33persons

■Completion: September, 1992



Dormitory(*Hokushin-ryo*)

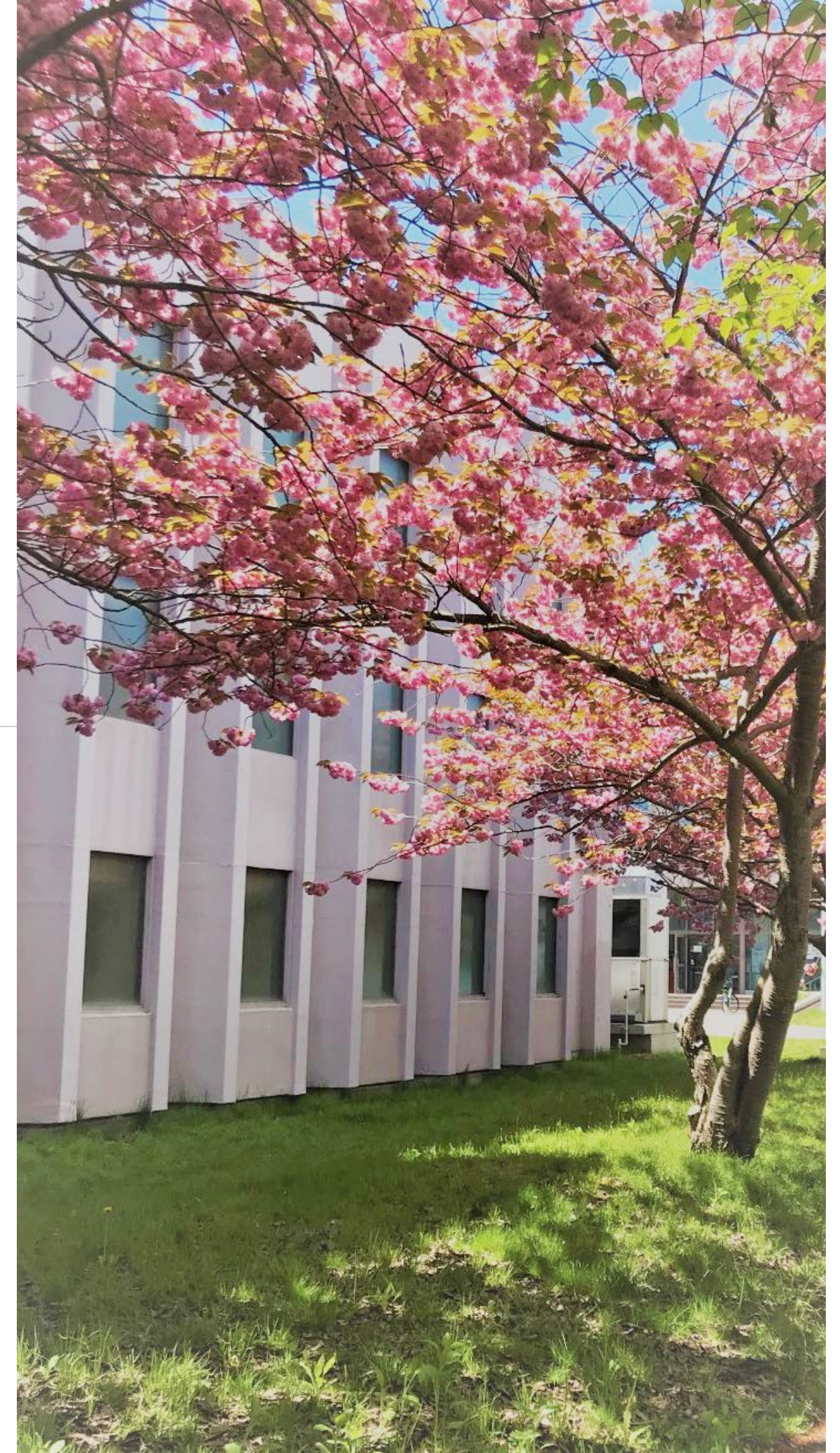
- Address 1 - 9 -1, Nakamichi, Hakodate 041-0853, Japan TEL:+81-138-52-1160
- Inauguration March 1965
- Capacity 100 rooms (1 student per room)
※inc. 30 rooms for female students
- Guesthouse「Oshoro」 6 rooms
- Structure Reinforced concrete. 4 floors
- Area 3,147m²

Library

Our Library is one of the most famous library in Japan for holding various kinds of materials about fisheries sciences and marine sciences. We have 13 types of oceanographic survey reports such as the British Challenger expedition, other special collections. The library will be combined with Fisheries Science Museum and renewed as Fisheries Science Future Human Resource Development Center in 2023.

□Library Holdings

Classification	Japanese	Foreign	Total
Books	73,188	54,647	127,835
Journals	3,237	2,227	5,464



Research Institutes and Centers



Toya Lake Station

The Toya Lake Station is the only limnological station for fisheries sciences at a national university in Japan. The station has research facilities, a hatchery and accommodations. Landlocked sockeye salmon and masu salmon fry are released from the station, and many return after they mature by swimming through a fishway (artificial channel) that connects the station to the lake.



Usujiri Fisheries Station

The Usujiri Fisheries Station Faces the Pacific Ocean and is an excellent site for studying boreal coastal organisms. Many kinds of species are found near the lab during the year.



Nanae Freshwater Station

The Nanae Freshwater Station is located in Nanae town about 10 km north of the Hakodate campus. The station rears many sturgeon and salmonid species, including freshwater teleost fishes that are endangered in Japan. It also supports education and research at the Faculty of Fisheries.

Fisheries Science Museum



The purposes of the Museum are 1) To gather materials related to fisheries, particularly actual objects, specimens, models, and texts linked to northern Japan. 2) To organize, categorize, and store the documents and artifacts mentioned above. 3) To publish catalogs and reference books for educational and research purposes. and 4) To provide relevant data to researchers both within and outside Japan, while educating the general public about fisheries. Free for admission. Business hour: 10-16 on **weekdays**.

Main building of the Museum is now closed due to aging. It will be combined with our library and renewed as Fisheries Science Future Human Resource Development Center in 2023.

Land and Buildings



Classification	Land (m ²)	Buildings (m ²)
Faculty of Fisheries Sciences • Graduate School of Fisheries Sciences • School of Fisheries Sciences	88,974	31,368
Nanae-Hama Fisheries Research Facility	7,471	334
Dormitory (Hokushin-ryo)	7,987	3,147
Total	104,432	34,849

Getting to campus



□ From Hakodate train station

- Take a taxi (15 min., 1,700 yen)
- Take a bus #18 or 410 or 411 to the Hokudai Mae (北大前) bus stop (20 min., 260 yen), followed by a 2-minute walk
- Bus #22 or #23 bound for Esashi (江差) to the Hokudai Ura (北大裏) bus stop (20 minutes, 260 yen), followed by a 3-minute walk

□ From Goryokaku train station

- Take a taxi (10 min., 1,300 yen)
- By walk (30 min., ~1.8km)

□ From Nanaehama train station

- By walk (20 min., ~1.5km)

□ From Airport

- Take a taxi (30 min., 3,000 yen)
- Take the Teisan shuttle bus to the Hakodate Eki Mae bus stop in front of the Hakodate train station (20 min., 410 yen), then follow the directions from the Hakodate train station

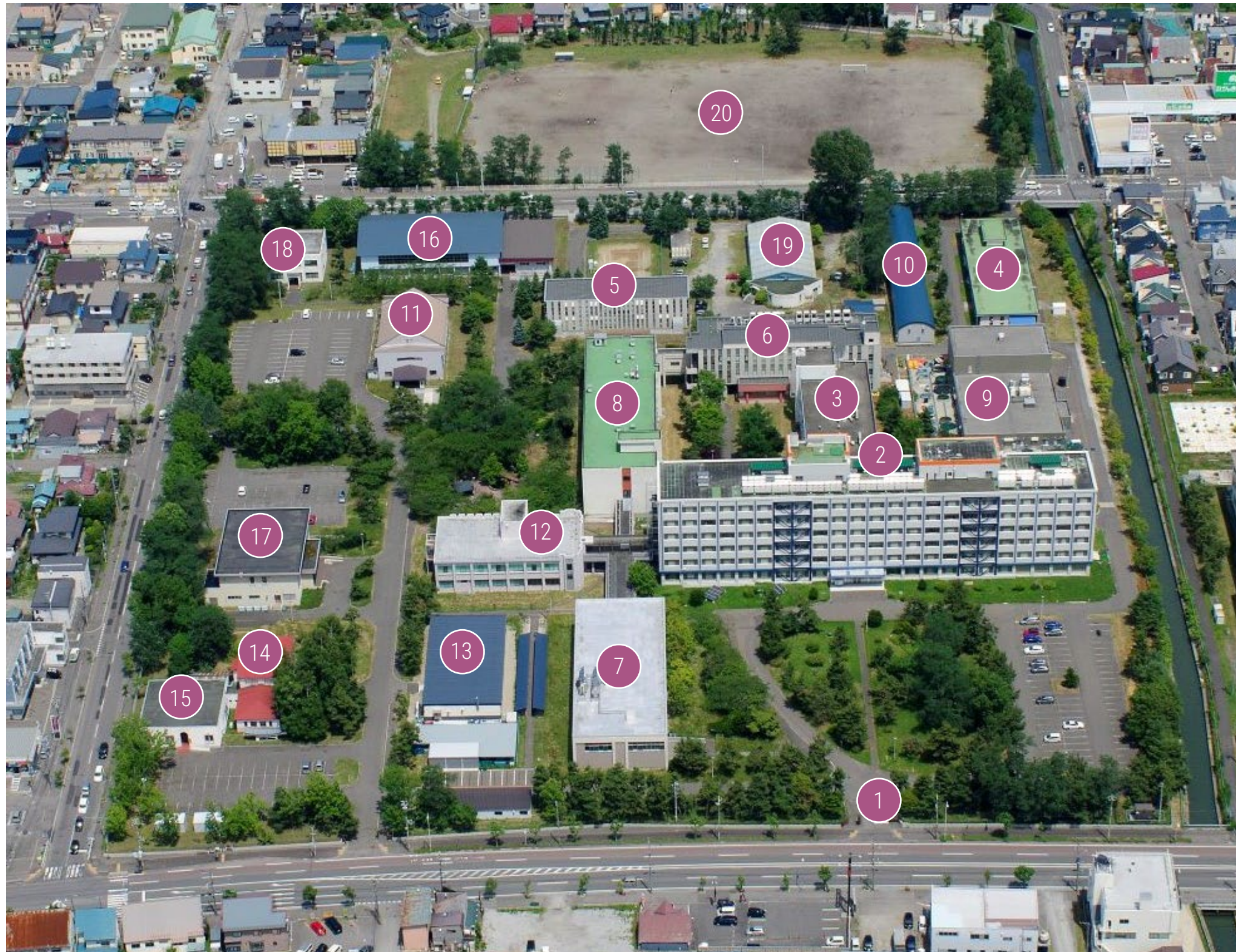
□ From Tsugaru-kaikyo ferry terminal

- By walk (10 min., ~800m)

□ From the Shin-Hakodate-Hokuto train station

- Take the Hakodate Liner to the Hakodate train station (17 min.). Then, follow the directions from the Hakodate train station

※Estimation time is subject of change due to traffic condition



Campus map

- ① Main gate
- ② Main building
- ③ Annex building
- ④ Marine Bioresources Research Building
- ⑤ Marine Frontier Research Building
- ⑥ Marine Science Creative Research Building
- ⑦ Lecture-room Building
- ⑧ Student laboratories
- ⑨ Controlled Environment Rooms
- ⑩ Towing tank Room
- ⑪ Auditorium
- ⑫ Library
- ⑬ Aquatic biological specimen house (Nakabe Hall)
- ⑭ Fisheries Science Center (main building)
- ⑮ Fisheries Science Center (main building)
- ⑯ Gymnasium
- ⑰ Student center
- ⑱ Student activities building
- ⑲ Swimming pool
- ⑳ Athletic field