

Environmental Report 2024

Digest Edition

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Iwate University Environmental Policy

<Basic Principles>

Iwate University considers environmental conservation and revitalization to be one of the most important challenges of the 21st century. Our university is working proactively on environmental conservation and revitalization education and research, and making contributions toward the achievement of a sustainable society in light of the Sustainable Development Goals (SDGs). As part of these efforts, members of our university and its affiliated schools as well as resident university-related parties are working together to be environmentally friendly in all activities taking place at the university, making efforts to reduce our environmental footprint, prevent pollution, and improve our campus environment as the social responsibility of the university.

<Basic Policies>

Iwate University actively engages in the following activities based on a medium-term plan under Iwate University Vision 2030 in order to achieve its basic principles.

1. Enthusiastically expand on education and research related to environmental conservation and revitalization, and develop the environmentally-conscious human resources that society requires.

2. Engage in education, awareness, and outreach, and other such activities geared toward all types of people, including those in local communities, based on the findings of education and research related to the environment.
3. Be proactively involved in initiatives for local environmental conservation and revitalization, and the preservation of biodiversity in cooperation with local NPOs, government, and other such entities.
4. Seek continuous improvements to the on-campus environment through environmental management systems, while complying with environmental laws and environmental requirements which Iwate University agrees to.
5. Set annual targets based on the goals of these policies, and work diligently on initiatives such as saving energy and resources, reducing waste, recycling, and green purchasing.
6. Make environmental policies known to all members of the university, and while carrying out these policies also widely publish their results to the general public in writing and on the internet.

Enacted January 26, 2006

Last Revised : March 25, 2022

Dr. OGAWA, Satoshi, President of Iwate University

Environmental Activities of Young Children and Students



Affiliated Kindergarten



Harvesting sweet potatoes.



Affiliated Primary School



Investigating water quality through aquatic organism collection in the Nakatsugawa River.



Affiliated Junior High School



Efforts to beautify the environment inside and outside school buildings.



Affiliated Special Needs School



Creating handicrafts by members of the Craft Group.



Environmental Activities of Student Circles



Ike-ic Reservoir Conservation Group observing aquatic life.



Student-led business initiatives by "Campus Company"



The Iwate University Craft Beer Club sowing seeds.

About the cover

Mr.Mahiro Izumi (junior, Faculty of Science and Engineering) from the Iwate University Environmental Management Student Committee designed this logo.

The committee is actively involved in environmental initiatives with the goal of respecting and protecting the beauty of nature. The photographs used in the report were provided by the General Administration and Public Relations Division of the University's Corporate Administration Department and the Environmental Management Student Committee.

Iwate University Environmental Activities



Environmental Management Student Committee



TOYOTA SOCIAL FES!! 2023 event



Filming a video for "Iwate Carbon Free Action".



Displaying a 3D Savonius Wind Turbine at the Ecopro 2023 exhibition.



Sowing flower seeds for a botanical herbarium.



The university's green purchasing practices.



Promote purchasing accordance with "Act on Green Procurement"



Programs to address local community challenges.



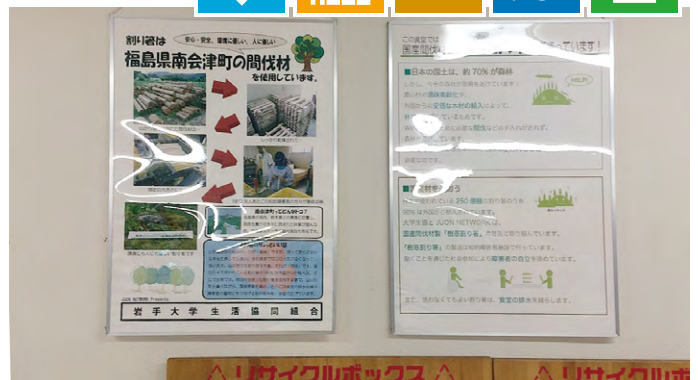
Researching the reasons for the underperformance of camellia plants in Iwate's coastal region.



Iwate University Co-op Environmental Initiatives



Collecting containers for "Bento".cafeteria lunchboxes



Introducing disposable chopsticks made from domestic thinned wood.

Topics for the 2023 academic year



Environmental Education Initiatives in the Kamaishi Campus and Community



Utilizing their knowledge of marine plastic litter, Kamaishi Campus have researched so far two lectures on "Changes in the Marine Environment" and "The Current Status of Marine Litter in Kamaishi Bay" were delivered at training sessions of external organizations.

In "Changes in the Marine Environment", Kamaishi Campus explained Sanriku's fisheries and oceans, including eco-friendly fishing practices and shifts in the types of fish caught, using specific examples such as rising sea temperatures. We emphasized the importance of reducing plastic waste and practicing the 3Rs (Reduce, Reuse, Recycle) and local production for local consumption as sustainable actions that can be done in one's daily life. Furthermore, as good points of local production for local consumption, we explained each of the eight items surrounding the sea and fisheries of Sanriku in relation to the SDGs from the viewpoints of three parties: consumers, producers, and production.

In "The Current Status of Marine Litter in Kamaishi Bay", Kamaishi Campus explained that the microplastics in Kamaishi Bay were characterized by the presence of mostly fibers or plastic debris as a result of the investigation from seawater sampled in Kamaishi Bay. We also conducted an experiment to demonstrate the presence of microplastics

in seawater collected from the bay.

Additionally, the Kamaishi Campus participated in local events to introduce the research being conducted at the Kamaishi Campus. Iwate University students planned and held classes at local kindergartens and elementary schools, such as a mobile aquarium displaying fish that live in the Kamaishi sea, a touch pool where they could touch sea creatures, and the Kamaishi Fish Test. We actively engaged in activities to let local residents know about the research being conducted at the Kamaishi Campus and the sea in Kamaishi.



"Mobile Aquarium" exhibited by Iwate University students



Iwate University Regional Collaboration Forum in Kamaishi



Since signing a "Mutual Friendship and Cooperation Agreement" in FY 2001, Iwate University and Kamaishi city have fostered various collaborations, including lifelong learning, environmental issues, and industry-academia-government partnerships. The dispatch of city officials to the university is one such collaboration.

Furthermore, since FY 2017, we have jointly organized the "Iwate University Regional Collaboration Forum in Kamaishi". This forum provides a platform for the presentation of Iwate University faculty members' research seeds as well as case studies related to regional collaboration with Kamaishi. Additionally, students from the Fishery Systems Science Program at the Department of Food Production and Environmental Management, Faculty of Agriculture, who attend the Kamaishi Campus, share their community-based student activities. Moreover, students from Iwate Prefectural Kamaishi High School present their research conducted during their daily research hours. These presentations offer valuable opportunity for forum participants to know about the diverse activities of young people in the community.

In FY2023, the forum focused on "Research and Human Resource Development for Future Industry Creation".

Notable student presentations from Kamaishi High School included "Purification effect using polyglutamic acid of natto" and "Production and evaluation of Savonius wind turbines in times of disaster".

We remain initiatives to promote regional cooperation with the aim of further deepening ties between Iwate University and Kamaishi City.



The presentation of research results by Kamaishi High School at the FY2023 Regional Collaboration Forum

Iwate University's Efforts to Reduce Environmental Impacts

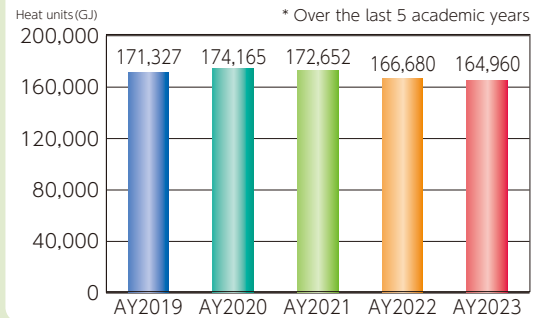


Total Energy Inputs ● Efforts to reduce heat and energy use



Purposes/ Objectives	<ul style="list-style-type: none"> ● Purpose: Reduce energy consumption and CO₂ emissions. ● Objective: Increase environmental awareness among faculty, staff, students, and businesses on campus of energy consumption through visualizations and other methods. Save electricity for air conditioning equipment. Promote energy-saving practices through proper equipment usage and other measures.
Initiatives	<ol style="list-style-type: none"> ① Promote visualization electricity consumption by buildings through a power management of systems. ② Recorded monthly usage of seven energy sources (electricity, fuel oil A, kerosene, gasoline, diesel, city gas, and LPG), compared the results with the previous month or the same quarter in the previous year and reported at the meeting of the Office of Environmental Management. The electricity consumption was also calculated for each departmental unit. ③ Cleaned the air conditioner and regulated the room temperature during heating and cooling periods. ④ Lighting equipment was properly maintained by cleaning and making replacements when necessary. ⑤ Turn off lights in classrooms, offices, and other areas during lunch breaks, overtime, and other unnecessary periods (except for over-the-counter services).
Outcome	<p>Energy consumption in FY2023 compared to FY2022 was - 16.3% for kerosene, - 8.6% for city gas, - 6.5% for fuel oil A, - 6.0% for diesel, and - 0.4% for LPG. Electricity and gasoline increased 1.4%. Total energy input was 164,960 GJ (electricity: daytime/nighttime coefficient conversion) in FY2023, compared to 166,680 GJ in FY2022, a 1% reduction on a calorie basis. Based on the revision of Act on Rationalizing Energy Use (electricity: average coefficient for all power sources), electricity consumption was reduced by 10.0% from the previous year, and total energy input was 150,570 GJ, a reduction of 9.7%.</p>

● Total Energy Inputs(converted to heat units)

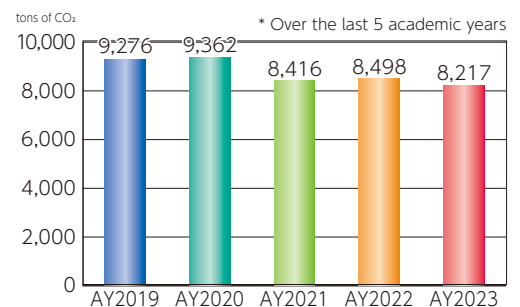


Emissions of Greenhouse Gases, etc. ● Efforts to reduce CO₂ emissions



Purposes/ Objectives	<ul style="list-style-type: none"> ● Purpose: Reduce CO₂ emissions by approximately 50% in FY2030 compared to FY2013. ● Objective: Develop an action plan (draft) and roadmap to reduce CO₂ emissions by 2030.
Initiatives	<ol style="list-style-type: none"> ① Calculated the CO₂ emissions based on the monthly usage of seven energy sources (electricity, fuel oil A, kerosene, city gas, gasoline, diesel, and LPG), compared the results with the previous month or the same quarter in the previous year and reported the results at the meeting of the Office of Environmental Management. ② Calculated the CO₂ emissions based on the electric power consumption for each unit every month. The results obtained were compared to the same time period of the previous year and the preceding month. ③ Examine measures to reduce CO₂ emissions and realize campus carbon neutrality based on the details of energy use by type.
Outcome	<p>CO₂ emissions in FY2023 were - 16.2% for kerosene, - 6.5% for fuel oil A, - 6.5% for city gas, - 6.4% for diesel, and - 1.4% for LPG, and electricity use increased by 1.4%, but the emission factor in FY2023 decreased by 3.5% from FY2022, resulting in a reduction from 6,274 t-CO₂ to 6,142 t-CO₂, a decrease of 132t-CO₂. Gasoline increased 2.4%. Total emissions were 8,217t-CO₂ in FY2023, compared to, 8,498t-CO₂ in FY2022, a reduction of 281t-CO₂ (3.3% decrease). An action plan and roadmap were formulated with a CO₂ reduction target for FY2030 of 50% of the FY2013 level.</p>

● CO₂ Emission by Academic Year



Iwate University's Efforts to Reduce Environmental Impacts



Material Balance



Input

<p>Power</p> <p>13,041,000 kWh</p>		<p>Diesel</p> <p>30 kℓ</p>	
<p>City gas</p> <p>669,000 m³</p>	<p>LPG</p> <p>2,538 kg</p>	<p>Gasoline</p> <p>31 kℓ</p>	<p>Heavy oil type-A</p> <p>87 kℓ</p>
<p>Kerosene</p> <p>57 kℓ</p>	<p>Paper (Converted to A4 size)</p> <p>7,590,000 sheets</p>	<p>Water</p> <p>75,000 m³</p>	<p>Chemicals</p> <p>11 tons</p>



Output

<p>Greenhouse gas emissions</p> <p>8,217 tons of CO₂</p>	<p>General waste</p> <p>182 tons</p>	<p>Industrial waste</p> <p>157 tons</p>	<p>Sewage discharge</p> <p>75,000 m³</p>
<p>Sulphur oxides</p> <p>0.38 tons</p>	<p>Laboratory liquid waste</p> <p>15 tons</p>	<p>BOD contaminant waste (estimated)</p> <p>11 tons</p>	

External Emission

Tohoku Electric Power greenhouse gas emission factor (adjusted):
Tohoku Electric Power 0.000471t-CO₂/kWh





Dr. Kiyoshi Yamauchi, Department of Forest Science, Faculty of Agriculture

(Subjects: Forests and the Environment, Animal and Environment)

● Interviewer

Ms.Hana Suzuki (Junior, Faculty of Agriculture)

Ms.Ryoko Kisen (Junior, Faculty of Humanities and Social Sciences)

Ms.Rinka Ohori (Sophomore, Faculty of Agriculture)

Q What is the significance of learning about the environment?

A From the perspective of a higher consumer in the forest, I study how our actions impact nature and the interconnectedness between humans and the natural world. The significance lies in understanding how humans interact with the environment including wild animals, as they are integral parts of the ecosystem.

Q What are your thoughts on the environment?

A Since the dawn of human existence, our population has grown rapidly, leading to the destruction and consumption of natural resources to support a life of abundance. However, especially in today's Japan, the population is declining, and wildlife damage by wild animals is becoming a pressing issue in areas surrounded by nature. This trend is likely attributable to the declining population and the lack of individuals available to care for and manage the forests. I have the impression that the strain of doing as we human beings please without considering the load and balance of nature has come back to haunt us today. I believe that we need to learn the environment in order to dig deeper into the history of why this has happened and to promote and educate more people about it. I study wildlife, so it is also to know how to manage it.

Q What is your message to students?

A First, study various fields of interest. Ignorance is the biggest waste of time. I hope that students will be exposed to things that interest them and what they find interesting. Secondly, visit different places. Even Morioka has a forest within biking distance, and other areas have rich and unique nature in different regions. More than anything, explore all over Iwate and experience it firsthand.



Dr. Xiangdan Piao, Department of Regional Policy, Faculty of Humanities and Social Sciences

(Research theme: The impact of promoting environmental conservation activities in the household sector on individual well-being and the reduction of greenhouse gas emissions.)

● Interviewer

Ms.Nao Nakata (Junior, Faculty of Agriculture)

Mr.Hiroki Misawa (Sophomore, Faculty of Science and Engineering)

Q What kind of research are you currently conducting?

A Environmental economics is the study of balancing environmental conservation and economic development. Human economic activities have a significant impact on environmental issues such as global warming, and prompt action is essential for achieving a sustainable society. However, there is a lack of statistical analysis from an international perspective on environmentally conscious

behavior. I am conducting research to contribute to sustainable development.

Q What do you think is important when considering environmental issues?

A I believe that technological advancements in the corporate sector (production, distribution, and disposal of products) and improvements in environmental awareness and well-being in the household sector are crucial. The former leads to the development and dissemination of products with a reduced environmental impact. The latter leads to a transformation of consumer attitudes. Enhancing welfare not only in terms of the consumption of goods and services but also in various other aspects of life leads to an improvement in people's well-being.

Q Finally, how do you want students to deal with environmental issues?

A It is evident that higher levels of education are correlated with more environmentally friendly behavior and sustainable energy consumption. The trend was that the more years of education, the higher the household income per capita, suggesting that education contributes to better economic development. We encourage you to explore the relationship between education and economic growth or education and environmental protection as a starting point for considering where and what to study.