

Recipients selected for FY 2022 Grants-in-Aid for Young Researchers

As part of its efforts to strengthen its survey and research activities, the International EMECS Center (hereinafter referred to as “EMECS”) established the Grants-in-Aid for Young Researchers in FY 2020 to support outstanding young researchers engaged in research that contributes to environmental conservation in enclosed seas.

As a result of a rigorous selection process EMECS Researchers Meeting held on July 8, seven young

researchers were selected as grant recipients, including four researchers who continued their research from the previous fiscal year.

We plan to hold a public presentation in May 2023 to report the results of the research. Details will be posted on EMECS website as soon as they are finalized.

Information on Grants-in-Aid for Young Researchers :
<https://www.emecs.or.jp/en/edu>



Selection by EMECS Researchers meeting



Conducting Interview of research implementation plan

【FY2022 Grant recipients】

Name	Affiliation	Research topic
Tomohiro Komorita	Faculty of Environmental & Symbiotic Sciences Prefectural University of Kumamoto	Recovery of short necked clam, <i>Ruditapes philippinarum</i> , resources by using mesh bag on the sandy tidal flats in Ariake Bay, Japan
Yusuke Nakatani	Graduate School of Engineering Osaka University	Analysis of the positive and negative effects of measures to increase nutrient loads on coastal, offshore, and adjacent seas
Megumu Fujibayashi	Faculty of Engineering Kyushu University	Historical changes of the supply of silica in the coastal areas and its effects on community structure in tidal flat ecosystems (Second year)
Masatoshi Nakakuni	Faculty of Agriculture Kagawa University	Relationships in seasonal fatty acid composition between oysters and microalgae
Tomohiro Okamura	National Research and Development Agency Japan Fisheries Research and Education Agency	Studies on the distribution and growth characteristics of nanoplanktonic diatoms, the food for bivalve larvae, in the Seto Inland Sea, Japan
Hikaru Itakura	Atmosphere and Ocean Research Institute University of Tokyo	Spawning and migration ecology of anadromous Japanese grenadier anchovy in the Ariake Sea
Tomonori Isada	Field Science Center for Northern Biosphere Hokkaido University	Dynamics of Transparent Exopolymer Particles (TEPs) in eelgrass beds of Akkeshi-ko estuary, Japan

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Introduction of recipients



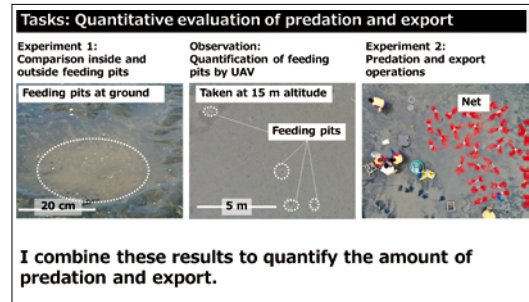
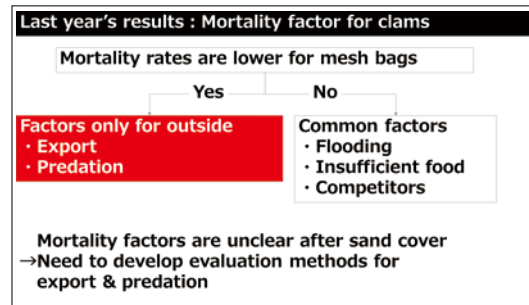
Recovery of short necked clam, *Ruditapes philippinarum*, resources by using mesh bag on the sandy tidal flats in Ariake Bay, Japan

Assoc. prof. Tomohiro Komorita
 Division of Environmental Resources
 Department of Environmental & Symbiotic Sciences
 Faculty of Environmental & Symbiotic Sciences
 Prefectural University of Kumamoto

In the tidal flats of the Ariake Bay, which is my main field of study, the catch of short-necked clams and hard clams are still at a low level. As one of the methods to recover the clam stock, sand covering of tidal flats has been promoted since around 2000. While sand is in short supply on the tidal flats, the problem is the amount of sand allowed to be deposited in the upstream dam. I would like to solve the sand mismatch problem between the dam and those tidal flats and recover the tidal flat ecosystem. To do this, I must first ask, "Where can we cover sand to effectively increase the number of the clam?" The question needs to be answered. Because of the large scale of the sand covering project, it is difficult to test the project. Therefore, I focused on a technique called mesh bags, which are nylon bags filled with gravel. This technique is inexpensive to implement and promotes the settlement of juvenile clam, that is similar in effect to sand covering. From the results of the first year's project, it was found that covering sand in areas where clams have been settling well over the past 10 years in stock survey should be highly effective.

In last year's mesh bag experiment, the clam density decreased only on the outside of the mesh bag and remained high on inside. This suggests that factors mitigated by the net bag, such as predation and tidal runoff, are the main causes of the clam decline. Therefore, in this year, I will establish an evaluation method for the tidal flat ecosystem, assuming that monitoring will be conducted after the sand covering. Specifically, I aim to quantify the amount of predation and runoff by using unmanned aerial vehicles to count feeding pits by stingrays, the difference in density between the inside

and outside of feeding pits, and experiments to mitigate predation and export by nets.



Analysis of the positive and negative effects of measures to increase nutrient loads on coastal, offshore, and adjacent seas

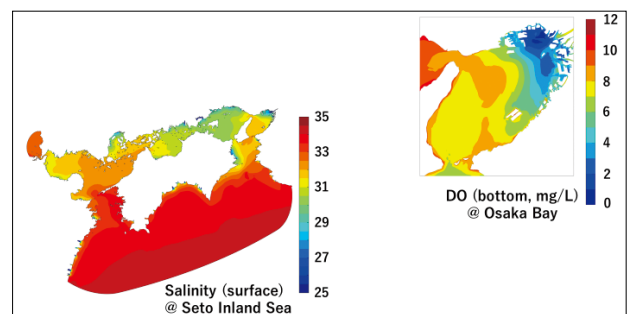
Assoc. prof. Yusuke Nakatani
 Department of Civil Engineering
 Graduate School of Engineering
 Osaka University

I am a member of the civil engineering laboratory at Osaka University and am engaged in research on the water environment of lakes, rivers, watersheds, and coastal seas (https://researchmap.jp/nakatani_civil_osaka).

In FY2022, I will address the research topic of "Analysis of the positive and negative effects of measures to increase nutrient loads on coastal, offshore, and adjacent waters". In the Seto Inland Sea, measures to reduce the pollution load have been implemented for many years to resolve organic pollution and eutrophication. As a result, in many seas, oligotrophication has been observed in recent years, including damage to the Nori culture and there is concern that this may degrade the productivity and diversity of aquatic organisms. In consideration of this problem, it will be possible to take measures to increase nutrients from land to sea according to the needs of each region in 2021, and specific management plans are currently being established by each prefecture. However, the response of coastal ecosystems to increased nutrient loads is complex and remains to be elucidated in many respects.

In this study, three-dimensional hydrodynamic and

water quality simulations are conducted in the eastern Seto Inland Sea to analyze the positive and negative effects of increasing nutrient loads on the aquatic environment in the coastal, offshore, and adjacent seas. Does the increased nutrient load directly contribute to increased production of fishery resources? Is it feasible to achieve harmony and compatibility with environmental conservation in the surrounding sea? To answer these questions, I will conduct this research using state-of-the-art numerical models and supercomputers.





Historical changes of the supply of silica in the coastal areas and its effects on community structure in tidal flat ecosystems (Second year)

Asst. prof. Megumu Fujibayashi
 Department of Urban and Environmental Engineering
 Faculty of Engineering
 Kyushu University

I would like to offer my sincere gratitude regarding my selection for EMECS Grants-in-Aid for young researchers, following last year. I am interested in the dynamics of dissolved silicon (DSi), which is an essential nutrient for diatoms, which is a supplier of eicosapentaenoic acid (EPA) in aquatic ecosystems. In the research project adopted last year, I investigated the dynamics of DSi in the Zuibaiji River, which flows through Fukuoka Prefecture. As a result, I found that a dam in the upper reaches of the river removes about 10% of DSi from the river water (Figure 1). In addition, a core sample taken from the Imazu tidal flat indicated that decrease in DSi supply to the Imazu tidal flat after the start of dam operation (Figure 2). In the second year of this research project, our goal is to quantitatively evaluate the DSi budget at the Zuibaiji River. For this calculation, I will also consider the effects of paddy fields and diatoms attached to reeds. I will also evaluate the impact of changes in DSi loading to the Imazu tidal flat on the production of benthic diatoms at the tidal flat. In the future, I hope to increase diatom production by DSi loading management, and contribute to the conservation of the ecosystems through stable supply of EPA.

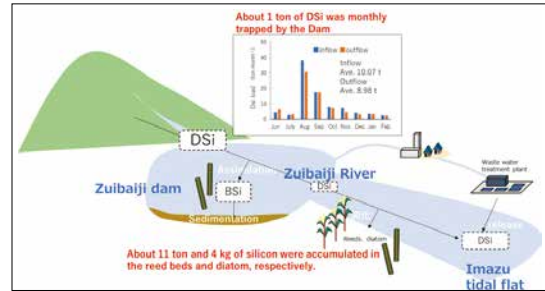


Figure 1 Dynamics of DSi in Zuibaiji River

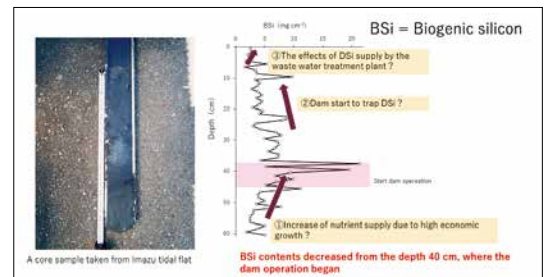


Figure 2 Vertical distribution of BSi in the core sample

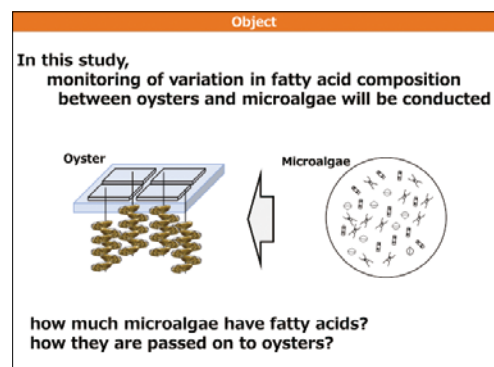
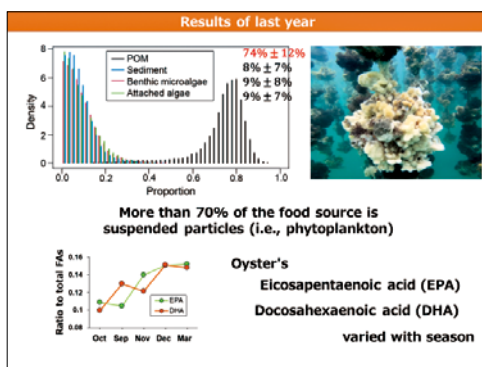


Relationships in seasonal fatty acid composition between oysters and microalgae

Masatoshi Nakakuni
 Faculty of Agriculture
 Kagawa University

I am a postdoctoral research associate at the Faculty of Agriculture, Kagawa University. The theme of this research is " Relationships in seasonal fatty acid composition between oysters and microalgae ". Essential fatty acids such as EPA and DHA are important for fish growth and are known to improve the growth rate

of fish. Even if the amount of food is high, if the food does not contain sufficient nutrients, the organisms that eat the food are not expected to grow well. In this study, I will evaluate prey quality and follow changes in predator nutrients in more detail by analyzing fatty acid compositions in oysters and microalgae.





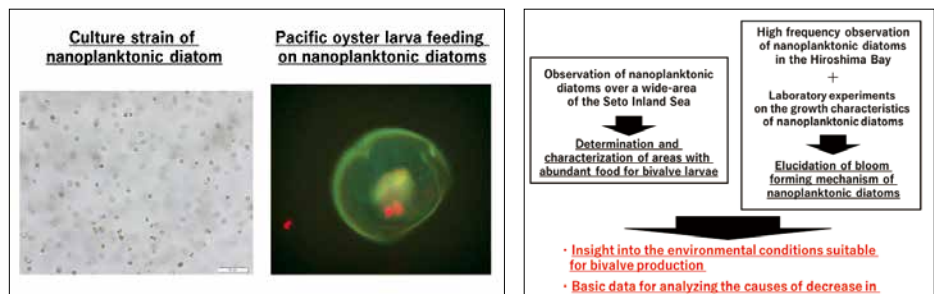
Studies on the distribution and growth characteristics of nanoplanktonic diatoms, the food for bivalve larvae, in the Seto Inland Sea, Japan

Tomohiro Okamura

Coastal Productivity Research Group
Coastal and Inland Fisheries Ecosystems Division
Environmental Fisheries Applied Techniques Research Department
Fisheries Technology Institute
National Research and Development Agency
Japan Fisheries Research and Education Agency

Bivalve, a filter feeder, provides us not only food, but also clean and healthy coastal environment. However, in the Seto Inland Sea, production of bivalves has been decreasing over the long-term. Changes in the feeding environment have been pointed out as one of the reasons for the decrease in the bivalve production, but little is known in this regard. Our previous study showed that the abundance of $<10\mu\text{m}$ sized diatoms (nanoplanktonic diatoms, larval food) was important effect on oyster production, suggesting that the feeding environment during the larval stage is important for bivalve production. However, in the Seto Inland Sea, knowledge of the feeding environment for bivalve larvae is lacking and it is unclear whether this sea is currently suitable for bivalve production. In this study, to determine and characterize the areas where food for bivalve larvae is abundant, we will investigate the distribution and biomass of nanoplanktonic diatoms, the food for bivalve

larvae, in the Seto Inland Sea. Our previous study also indicated that nanoplanktonic diatoms formed a bloom after a bloom of $>10\mu\text{m}$ sized diatoms (medium-sized diatoms). Therefore, we hypothesized that nanoplanktonic diatoms grew up by using organic matter derived from medium-sized diatoms. We will test this hypothesis through high frequency observations in the Hiroshima Bay and laboratory experiments to reveal the bloom formation mechanism of nanoplanktonic diatoms. We believe this study will contribute to the sustainable use of bivalve resources and the maintenance of a healthy environments in coastal areas around the world.



Spawning and migration ecology of anadromous Japanese grenadier anchovy in the Ariake Sea

Asst. prof. Hikaru Itakura

Atmosphere and Ocean Research Institute,
University of Tokyo

I'm Hikaru Itakura working at Atmosphere and Ocean Research Institute (AORI), University of Tokyo. I received my PhD from Graduate School of Frontier Science, University of Tokyo in 2014, and then worked at Graduate School of Science, Kobe University and University of Maryland Center for Environmental Science (UMCES), Chesapeake Biological Laboratory (CBL) in USA as a JSPS Research Fellow. My research topic is understanding response mechanisms of fisheries resources to environmental change, with primary interest of how diversity in migration and life history contribute to resilience in exploited fishes under environmental change.

In this research project, I will study about spawning and migration ecology of anadromous Japanese grenadier anchovy (*Coilia nasus*) inhabiting Ariake Sea and its inflowing rivers, to contribute to the conservation for enclosed coastal seas and resources management of the species. Fishes of genus *Coilia* (family Engraulidae), which are widely distributed in East Asia,

strongly depend on enclosed coastal seas, especially the estuarine turbidity maximum (ETM) zones, and migrate between the sea and rivers. Thus, they have a potential to be an indicator species for conservation of health of ETM zones and connectivity between rivers and enclosed coastal seas. I will explore locations of potential spawning rivers and nursery grounds, migration patterns, and spatial distribution in the Ariake Sea of the anchovy using otolith stable-isotopic ratio and environmental DNA analyses, in order to clarify environmental characteristics that the fish represents along their life history.

Japanese grenadier anchovy (*Coilia nasus*)

- The genus of *Coilia* are widely distributed in East Asia
- In Japan, Japanese grenadier anchovy is distributed only in the Ariake Sea
- Anadromous fish species that spawn in rivers and grow in the sea
- Strongly depend on the enclosed coastal sea, especially the estuarine turbidity maximum (ETM)

Indicator species for conservation of health of ETM zones and connectivity between rivers and enclosed coastal seas

Objectives

Explore habitat of the anchovy along their life history in order to contribute to the conservation for enclosed coastal seas and resource management of the species



Dynamics of Transparent Exopolymer Particles (TEPs) in eelgrass beds of Akkeshi-ko estuary, Japan

Assoc. Prof. Tomonori Isada
Akkeshi Marine Station
Field Science Center for Northern Biosphere
Hokkaido University

Macroalgae beds and seagrass meadows in estuarine and shallow coastal areas have a significant role in carbon burial and sequestration to mitigate climate change as blue carbon. Especially, Japan is considered to be a major blue carbon area because Japan has the sixth longest coastline in the world. It is therefore important to understand the carbon cycle of macroalgae beds and seagrass meadows in estuarine and shallow coastal areas.

In this project, we focus on the Transparent Exopolymer Particles (TEPs) dynamics in eelgrass meadows in Akkeshi-ko estuary. TEPs consist of acid polysaccharides and is sticky particles with $> 0.4 \mu\text{m}$ diameter, resulting in particle aggregation like a marine snow. TEPs significantly contributes to the carbon flux

into deep waters. TEPs stem from dissolved organic matter (DOC) released by aquatic organisms. However, little is known about the concentration of TEPs and its controlling factors in seagrass meadows. Since seagrass produces the large amount of DOC, TEP also could be produced in the seagrass meadows. Although the root and leaf litter of seagrass are a main fraction of carbon burial and sequestration, the evaluation of carbon storage by TEPs in the seagrass meadows is required. Therefore, we aim to investigate the spatio-temporal changes in TEPs concentration and clarify the factor regulating TEPs in the eelgrass meadows of Akkeshi-ko estuary for environmental conservation and sustainable management of aquaculture and fisheries.



Report on FY2021 Grants-in-Aid for Young Researcher presentation

The FY2021 Grants-in-Aid for Young Researcher presentation was held at the Sannomiya Training Center on May 18, 2022, in a hybrid format with both on-site and online participation.

The six grant recipients for FY2021 presented the results of their research in Ariake Sea, the Seto Inland Sea, Tokyo Bay, and other areas under the proposed theme of "Defining the Ideal Abundant Coastal Ecosystem," and engaged in a lively Q&A session with the International EMECS Center's advisors and the participants.

Please visit the EMECS Center website for details of the 2021 grant recipients' research.
<https://www.emecs.or.jp/en/topics/edu2021>



Report on attending PEMSEA Annual Partnership Meeting

The Partnership for Environmental Management of the Seas of East Asia (PEMSEA; Manila, Philippines), with which the International EMECS Center is affiliated as a Non-Country partner, held its annual Partnership Meeting online on July 27-28, 2022.

The meeting focused on the Sustainable Development Strategic Implementation Plan for the East Asian Seas (hereinafter referred to as "SDS-SEA IP") and discussed related policies, programs, projects, and possible areas of cooperation that could help facilitate the implementation of the Plan at the regional, national, and local levels.

Recommendations on the SDS-SEA IP were made by Country partners from Japan, China, the Philippines, Korea, and other countries, and comments were also made by Non-Country partners.

The Center introduced the "FY2022 Presentation workshop on marine environmental conservation for high school students" held on August 26 this year, and stated that it would like to contribute to the SDS-SEA IP and future marine environmental conservation in East Asia by fostering young researchers in the future. Please refer to page 8 of this newsletter for a report on the meeting.

Passing of Professor Tetsuo Yanagi, Board member of EMECS

Prof. Tetsuo Yanagi (Professor Emeritus, Kyushu University), who served as a board member and a member of the Scientific and Policy Committee of the International EMECS Center (hereinafter referred to as "EMECS"), and also served as a Head Researcher of the project "Development of Coastal Management Method to Realize the Sustainable Coastal Sea" (S-13) funded by the Ministry of the Environment from FY 2014 to FY 2018

as a Principal Researcher of the Center, passed away on July 2, 2022.

Professor Yanagi made great contributions not only to EMECS' s projects and research activities, but also to coastal oceanography domestically and internationally. We would like to express our deepest condolences to his family and friends.

Mourning the sudden passing of Professor Tetsuo Yanagi and praying for his soul

Osamu Matsuda

Vice Chair of the Board of Directors, International EMECS Center

It is with great regret that Prof. Tetsuo Yanagi (Professor Emeritus, Kyushu University; Photo 1) passed away suddenly on July 2, 2022. He served for many years as a member of the Board of Directors, International EMECS Center and a member of its Scientific & Policy Committee, and was a leading figure in the activities of the International EMECS Center, both inside and outside Japan. He also served in leadership roles in various organizations and groups, including Chair of the NPO Research Institute for Seto Inland Sea and Vice Chair of the NPO Satoumi Research Institute both of which have close ties to the International EMECS Center. He passed away at the age of 74. It was unexpected and sudden sad news, as he had been active in various fields until very recently. On behalf of the Board of Directors of the International EMECS Center, I hereby express my sincere condolences and pray for the repose of his soul.



(Photo 1) Prof. Yanagi looking smart in his "Satoumi" cap (in Hinase, Bizen City, Okayama Prefecture)

Activities at the International EMECS Center

Prof. Yanagi was a great authority on coastal oceanography, with remarkable achievements and contributions to various fields. In particular, he was very active in a wide variety of activities of the International EMECS Center (hereinafter referred to as "EMECS"). Among his achievements, the following two are particularly noteworthy and highly appreciated. One is that he first proposed the term and concept of "Satoumi," and spread the idea and philosophy to the world through the EMECS activities. The other is that, as Head Researcher of the "Development of Coastal Management Method to Realize the Sustainable Coastal Sea" (abbreviated as "S-13"), the first large-scale comprehensive



(Photo 2) Prof. Yanagi presenting the achievements of the S-13 project at the EMECS11 Conference held in St. Petersburg, Russia

research project undertaken by EMECS with the support of the Environment Research and Technology Development Fund, he led and promoted this project from start to finish (Photo 2).

Prof. Yanagi's activities to promote Satoumi internationally through the EMECS activities began in 2006 at the EMECS7 Conference (the 7th International Conference on the Environmental Management of Enclosed Coastal Seas) held in Caen, France. At the New Concept Session of this conference, he presented the concept of Satoumi, followed by my proposal of practical plans, etc. for creating Satoumi. Other practical examples of Satoumi creation were also reported. As a result, the idea of Satoumi was highly evaluated during the summary on the last day by the speaker, Prof. Özhan, which led to subsequent developments. Even today, the development of Satoumi remains an important theme for the EMECS activities.

The S-13 project, in which Prof. Yanagi demonstrated outstanding leadership from planning to the compilation of results, was implemented for five years from FY2014 to FY2018. During this time, he had an office for this project in EMECS as its Principal Researcher. This project was aimed at studying the future coastal use and management to "make coastal seas beautiful, bountiful, sustainable, and brimming with vitality." I believe that it brought about new achievements and had a significant impact on the way EMECS conducted its research.

Honoring his memory

I have had the pleasure of interacting with Prof. Yanagi for over 45 years, starting in the mid-1970s. We have been together in so many activities for such a long time that I cannot recall them all, but I am reminded of many of them in the wake of his unexpected passing. We first met during a joint research project using the *Toyoshio Maru*, a training ship of Hiroshima University. I was appointed at Hiroshima University in 1971, and Prof. Yanagi at Ehime University in 1975, both as research assistants. Around that time, the Seto Inland Sea was facing a major problem of red tide caused by eutrophication. The *Toyoshio Maru* was frequently used for surveys and research by Hiroshima University, Ehime University, Kagawa University, and other institutions.

Of the many cruises aboard the *Toyoshio Maru*, one of the most impressive was the four-season research cruise series on biological resources and the environment throughout the Seto Inland Sea, conducted in the early 1990s. Each cruise of 11 to 12 days was conducted four times, in spring, summer, autumn and winter, and I remember that Prof. Yanagi and I participated in all of them. In the Kii Channel in winter, warm seawater from the Kuroshio Current System and cooler water masses from the Seto Inland Sea formed a

front, and I can clearly recall the vapor rising from the surface of the warm Kuroshio Current System, as if I were watching a video.

On our research cruise, although we were busy, sometimes we would fish, sometimes we would start drinking with our catch, and sometimes we would have discussions through the night. Since life on a ship is a kind of communal living, relationships naturally develop as if you were “living under the same roof” after a certain number of trips or days aboard.

We often took overseas business trips together, including to EMECS Conferences and to meetings of the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), of which EMECS is a member. For example, at the 2009 PEMSEA Satoumi workshop held in Manila, Philippines, we had heated discussions. I was the chair for this session and here is a commemorative photo including Prof. Yanagi, Prof. Anne McDonald, and myself as part of the chair group (Photo 3).

On the return flight from the EMECS9 Conference (Baltimore, U.S., 2011), we were seated next to each other and talked for a long time. At a PEMSEA congress (Da Nang, Vietnam, 2015), where the Satoumi and ICM (Integrated Coastal Management) workshop was held, we enjoyed discussions with those involved every evening at a seaside restaurant over local seafood.



(Photo 3) Commemorative photo after the Satoumi workshop in Manila, Philippines. In the center of the front row is Prof. Yanagi. Prof. Anne McDonald is on his left and the author (Matsuda) is on his right. Although a commemorative photo shooting was not planned, it was taken at the initiative of the presenters, who said, “It was a good workshop, so let’s take a commemorative photo.”

During those interactions, I sensed Prof. Yanagi’s slightly shy, bashful, mischievous, and extremely charming personality. Some people’s impression of Prof. Yanagi as an expert was that of a harsh, critical teacher, but I thought differently as I was close to him. He may have seemed tough at first glance, but actually he was very sensitive, charming, and lovable. I don’t mean to be disrespectful, but he also had a certain cuteness.

Photo 4 is a rare shot of Prof. Yanagi, showing a gentle expression with his grandchild in his arms. To learn more about his activities and relationships outside of his professional career, I recommend *Taishoku Rojin Nikki* (Diary of an Elderly Retiree, 2020) and *Zoku Taishoku Rojin Nikki* (Diary of an Elderly Retiree Part 2, 2022), which he wrote after his retirement from Kyushu University. The frankness of his writing reflects his personality well.



(Photo 4) Prof. Yanagi, holding his grandchild with a gentle expression (Courtesy of his son, Mr. Masayuki Yanagi)

Career history, etc.

Prof. Yanagi was born in 1948 in Tokuyama City, Yamaguchi Prefecture. After graduating from the Faculty of Science, Kyoto University, he worked as an assistant, lecturer, associate professor, and professor at the Faculty of Engineering, Ehime University, before serving as a professor at the Research Institute for Applied Mechanics, Kyushu University. After serving as Director of the Institute, he retired in 2013. In academic circles, he served as a board member and an editorial board member of the Oceanographic Society of Japan, the Société Franco-Japonaise d’Océanographie, the Marine Meteorological Society, and others. He also received awards from the Oceanographic Society of Japan and the Société Franco-Japonaise d’Océanographie.

His publications are surprisingly numerous, but since it is not the purpose of this article to describe them in detail, I will only briefly mention a few examples. *Choseki Choryu no Hanashi* (Story of Tides and Currents, Sofusha Publishing, 1989); *Engan Kaiyogaku* (Coastal Oceanography, Kouseisha-kouseikaku Co., Ltd., 1991); *Shiome no Kagaku* (Science of Fronts, Kouseisha-kouseikaku Co., Ltd., 1992); *Setonaikai no Seibutsu Shigen to Kankyo* (Biological Resources and Environment of the Seto Inland Sea, Kouseisha-kouseikaku Co., Ltd., 1996); *Satoumiron* (Satoumi Theory, Kouseisha-kouseikaku Co., Ltd., 2006); *Setonaikai wo Satoumi ni* (Making the Seto Inland Sea into a Satoumi, Kouseisha-kouseikaku Co., Ltd., 2007); *Satoumigaku no Susume* (Recommendation of Satoumi Studies, Benseisha Publishing Inc., 2018); etc. He also has quite a few publications in English.

Making use of his legacy

I was astonished when I heard the sudden news of the loss of Prof. Yanagi. To be honest, I could not accept the reality, or rather, I could not really feel it. Perhaps it is because we had met face-to-face and enjoyed eating and drinking together exactly one month before his passing, and we had talked in an online meeting just one week before. However, as the months passed, I felt a growing sense of loss that he was really gone, and at the same time, I began to think about ways to make use of what he has left for us.

As remaining members of EMECS, we must carry on his legacy of the outstanding deceased. There are many ways to achieve this, but one of the major themes left behind is to further advance the international development of Satoumi as mentioned above, not only as a philosophy and concept, but also as a practical concept to nurture bountiful seas around the globe.

In addition, although the S-13 project was implemented in Japan, its purpose to “make coastal seas beautiful, bountiful, sustainable and brimming with vitality” is a desired goal throughout the world. This direction raised in the S-13 project must also be promoted internationally through the EMECS activities, taking advantage of regional characteristics.

In this connection, Prof. Yanagi and I co-authored “Restoration of Estuaries and Bays In Japan - What’s Been Done So Far, and Future Perspectives,” in the voluminous book *COASTS AND ESTUARIES, THE FUTURE*, published by Elsevier in 2019. The first half, mainly written by myself, introduces practical examples of Satoumi creation, etc. The second half, mainly written by Prof. Yanagi, presents how to realize sustainable coastal seas, using the achievements of S-13 as a framework. Although this has now become Prof. Yanagi’s legacy, I, as a person left behind, would like to use it as an important guideline for our future course of action.

Finally, I would like to pray for his soul as I remember as a person, would like his personality, and renew my determination to make the best use of his legacy. May he rest in peace.

Report on FY2022 Presentation workshop on marine environmental conservation for high school students

The International EMECS Center (hereinafter referred to as "EMECS")'s new project for this fiscal year, the "FY2022 Presentation workshop on marine environmental conservation for high school students" was held at the Seminar House of Kobe International House on Friday, August 26, 2022.

The International Conference on Environmental Management of Enclosed Coastal Seas (EMECS Conference), hosted by EMECS, has held the Students and Schools Partnership Sessions for high school and university students to disseminate their research and activities related to marine environment in Japan and abroad.

To further promote the development of the next generation of human resources who will be responsible for the environmental conservation of enclosed coastal

sea areas, this workshop was held as an opportunity for high school students conducting research to receive advice directly from experts.

From mid-April to mid June, we recruited participants who research on environmental conservation of enclosed sea areas, such as surveys, research, and conservation activities related to the environment in the Seto Inland Sea and other coastal areas or their watersheds, and received applications from a total of 14 schools from Hokkaido, Tohoku, Kansai, Chugoku, and Shikoku regions.

After a rigorous screening process by the presentation advisory committee, 11 schools were selected to participate, and the following research presentations were given in two separate rooms at the presentation session.

(Provisional translation by EMECS)

Research topics	School names
Sea Forest Project on seawalls to improve marine environment	Hokkaido Otaru Fisheries High School
Removal of marine pollutants with onion flower head	Ehime Prefectural Matsuyama Minami High School
Biological Survey of Matsubara Beach	Miyagi Prefecture Shizugawa High School
Marine Plastic Waste Stuck in the Seto Inland Sea	Hyogo Prefectural Kobe Commercial High School
Germination Conditions of Eelgrass in Artificial Environment	Okayama Gakugeikan High School
Investigations on the Benthic Biota of Tidal Flats in the Coastal Area of Mukaishima, Onomichi City, Japan, and the Formation of Mother Clam Habitat	Onomichi Senior High School
Importance of wide-area river ecosystems as indicated by Japanese mitten crab run	Ehime Prefectural Imabari West High School
Investigation of the current status of microplastics and their effective use	Hyogo Prefectural Amagasaki Oda High School
Survey of Nudibranchs in Hiroshima Bay	Sanyo Girl's High School
Survey of Microplastics Originating from Chemical Fertilizers-A Case Study of Shioya Beach, Matsumae Town, Ehime Prefecture	Ehime Prefectural Iyo Agricultural High School
Water purification ability of clams	Hiroshima Prefectural Hiroshima Kokutaiji Senior High School

In the participant questionnaire, we received very positive feedback such as, "The guidance provided by the experts of the presentation advisory committee was constructive and useful for the future research." "We received concrete suggestions for improvement in research methods," and "We learned various viewpoints from listening to presentations by other schools."

We hope to hold this workshop in the coming year and beyond.



Presentation by Hokkaido Otaru Fisheries High School



Presentation by Onomichi High School



Overall summary

Call for Articles

Contributions from readers (reports of research on enclosed coastal seas, conference information, etc) would be greatly appreciated.

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