JSPS

JSPS Core-to-core

CREPSUM

Collaborative Research and Education Project in Southeast Asia for Sustainable Use of Marine Ecosystems

Agenda

1. Welcome
2. Report of 2020 activity
   - 2.1 Activity report in 2020: Hiroaki Saito
     Additional information from NCs and group leaders
   - 2.2 Status of COVID-19 in each country:
     NCs/counties representative (brief report)
   - 2.3 Introduction of PhD thesis of Suhila Binti Rusni: Targeted mutagenesis of the CYP1A gene in Javanese medaka, *Oryzias javanicus*, to understand the metabolism of organic pollutants
3. Discussion for 2021 activities under COVID-19.
   - 3.1 Budget and activity policy under COVID-19 pandemic: Hiroaki Saito
   - 3.2 Potential joint activities:
     (Discussion + Report/proposal from Toshihiko Fujita, Aileen Tan Shau Hwai, Mitsutaku Makino and other attendees)
4. Contribution to UN Ocean Decade and SDGs
5. Other items
6. Closing

Goals of CREPSUM

1. Establish an international science and educational network for the Southeast Asia marine ecosystem
2. Progress marine ecosystem studies on emergent issues for conservation and sustainable use of marine ecosystem services in Southeast Asia.
3. Contribute to UN Decade of Ocean Sciences and UN SDG 14 “Life below water” by preparing best scientific knowledge.

JSPS Predecessor Activities

- Coastal Marine Science 2001-10
- Asian Core COMSEA 2011-15
- Core-to-core RENSEA 2016-18

Collaborative Research and Education Project in Southeast Asia for Sustainable Use of Marine Ecosystems (Core-to-Core CREPSUM) 2020-2022

Scientific Collaboration

JAPAN
AORI,UTokyo
National network

Collaboration work at INOSs, Workshop(WS)

Philippines
UP,Visayas
National network

Indonesia
RCO-LIPI
National network

Education, TMT

WS, training course, exchange young scientist

Thailand
Chulalongkorn Univ.
National network

Malaysia
UMT
National network

Integration

Joint Seminar

Vietnam
IMER
National network

Future Earth & other Int. Projects, Marine Policy

⇔

Sci. knowledge for sustainable use of marine ecosystem services
Int. Education core for marine ecosystem studies in SEAsia

UN SDGs | IPBES | IOC/WESTPAC | Policy makers | Public, NGO

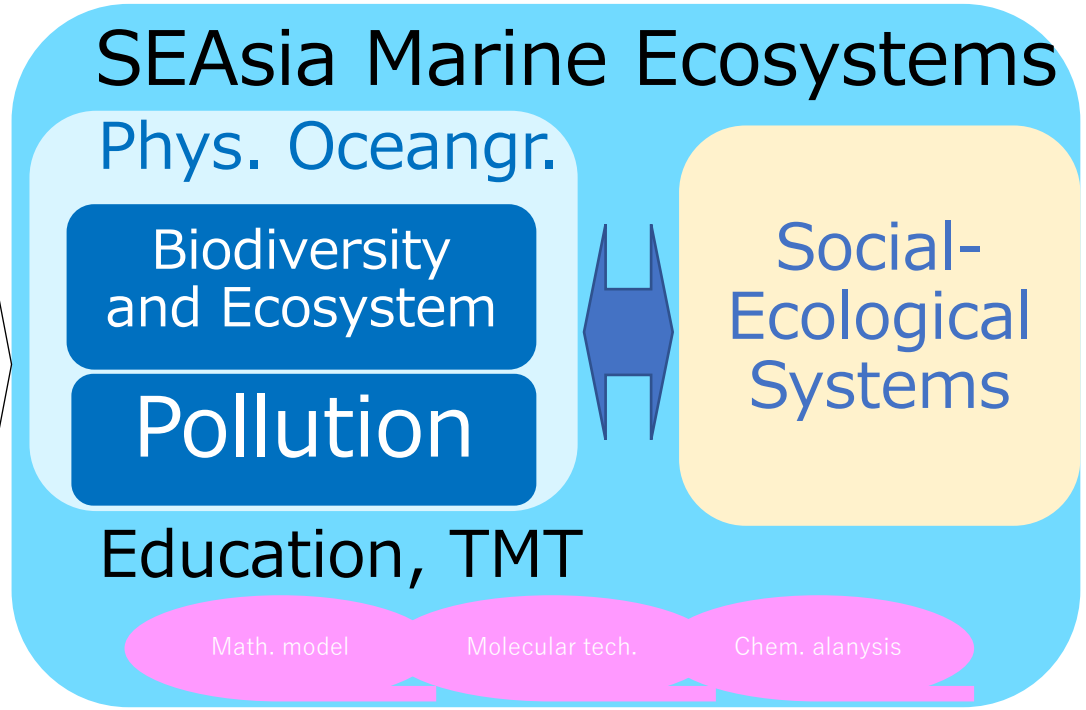
Core Research Institution: Atmosphere and Ocean Research Institute, the University of Tokyo
Coordinator : Hiroaki Saito
Secretary office of CREPSUM : Center for Int. Collaboration, AORI, UTokyo

International collaboration (Core Institutions, Nat. Coordinators)

- Malaysia — UMT, Ghaffar
- Indonesia — LIPI, Arifin
- Philippines — UP, Campos
- Thailand — CU, Viyakarn
- Vietnam — IMER, Tran

- Field study at INOSs
- Seminar
- Group meeting/ workshop
- Use & transfer of new tech.
- Education, capacity building

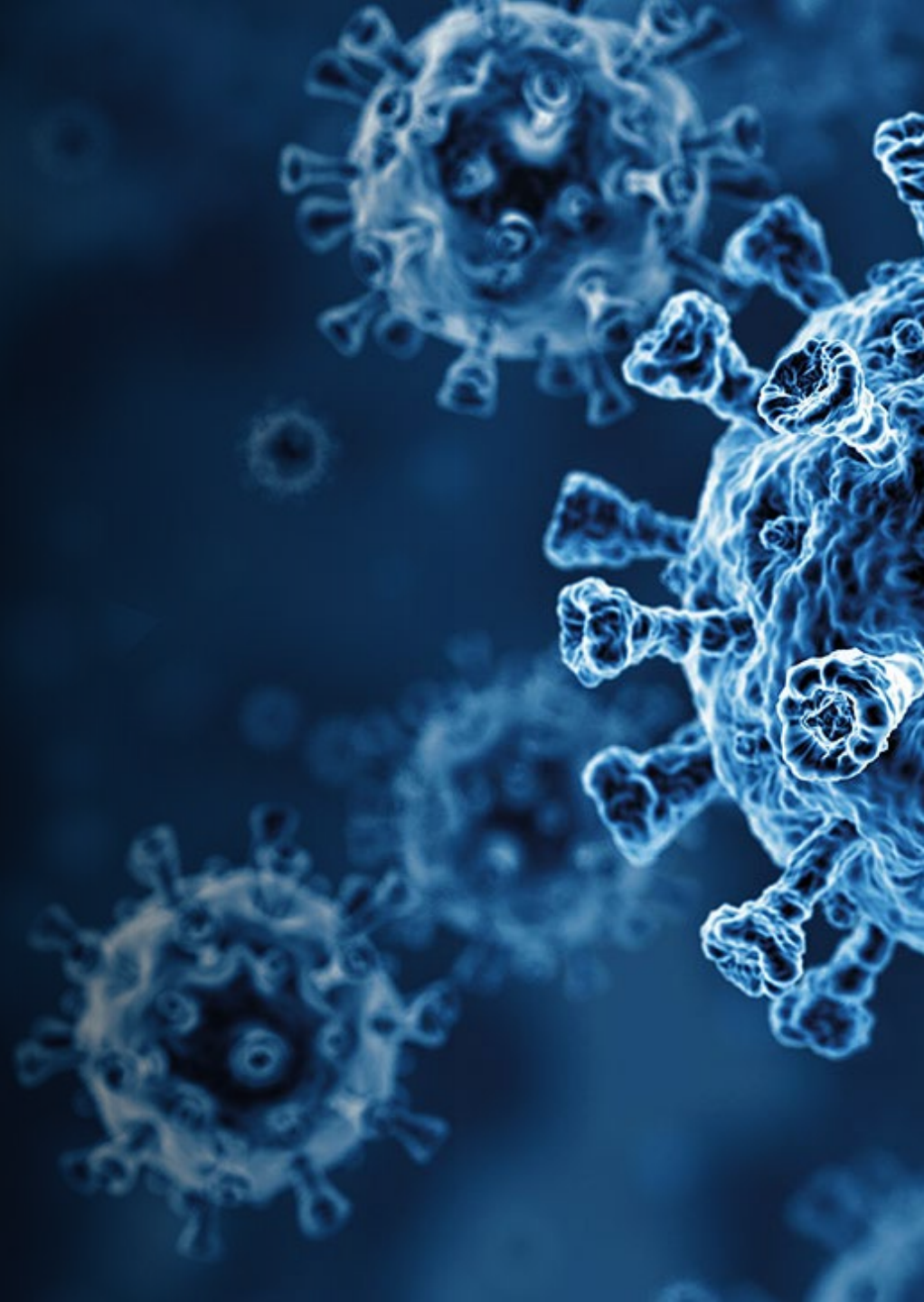
Research Groups



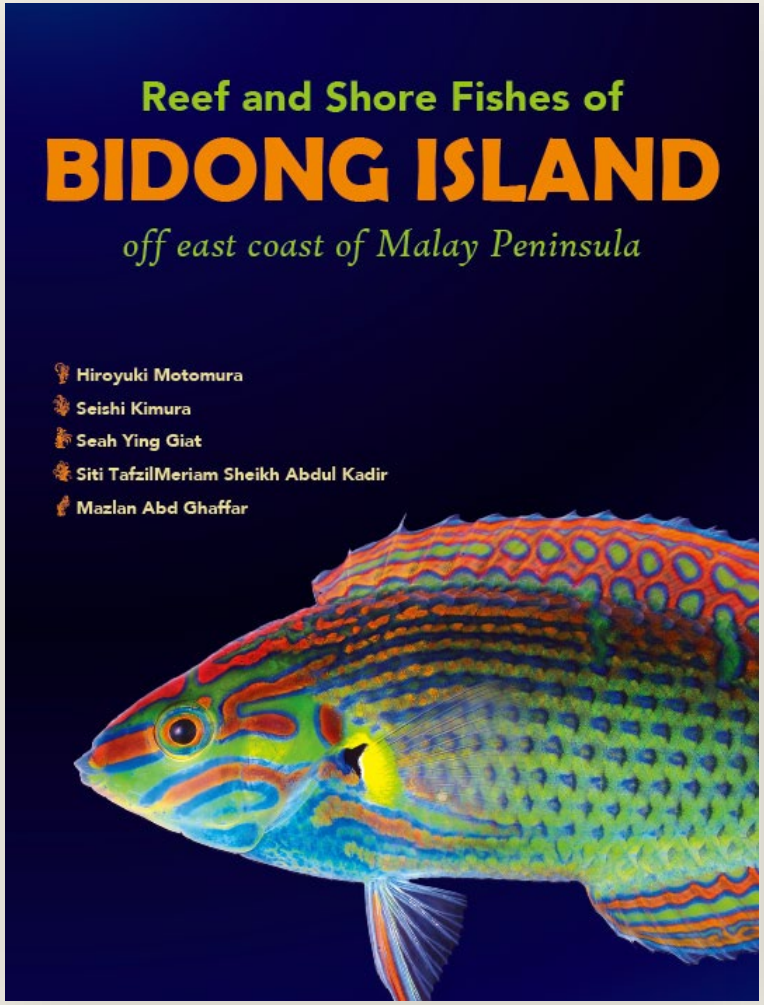
COVID-19 pandemic

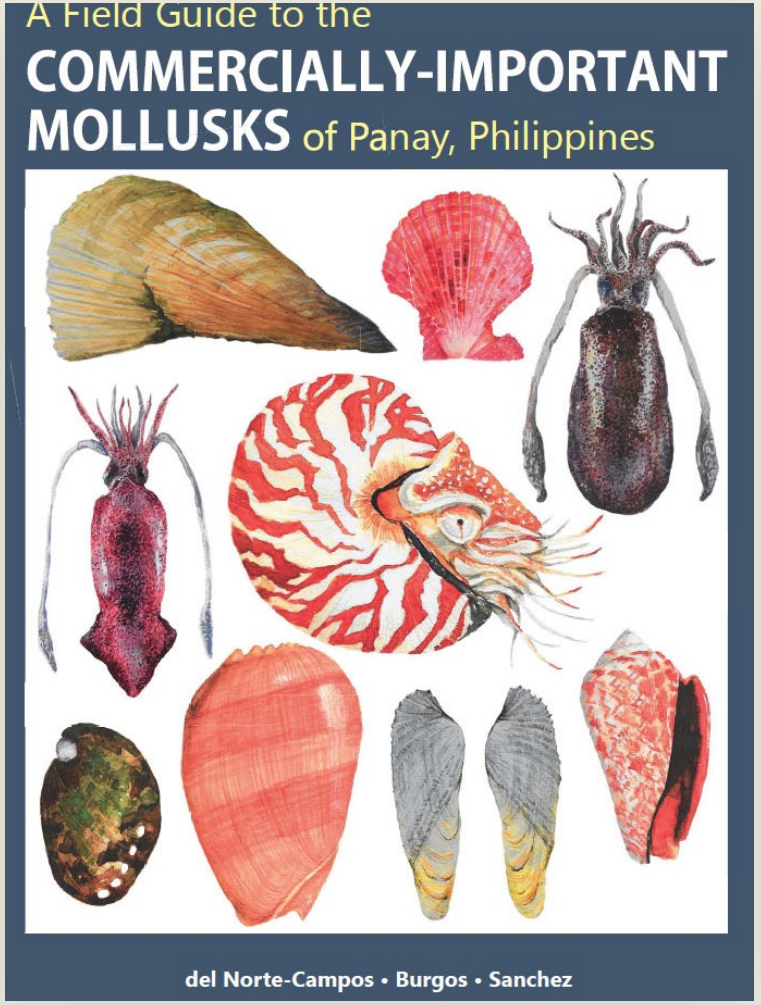
- Lockdown
- Travel ban/quarantine
- Delay of business process

- Extra time for writing?
- Developing technology for virtual/on-line activities
- Budget usage change (e.g., printing)

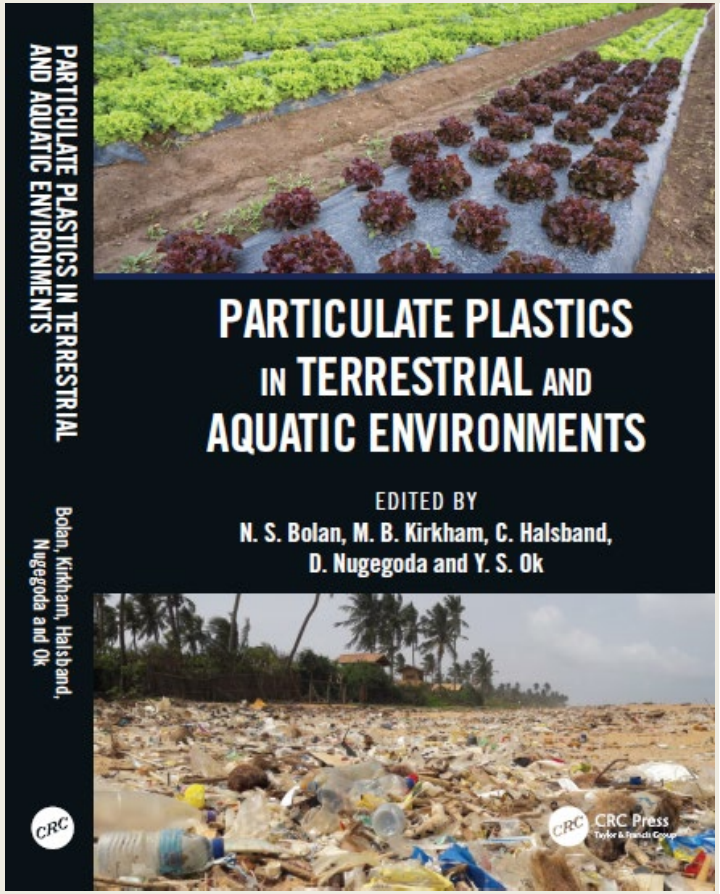


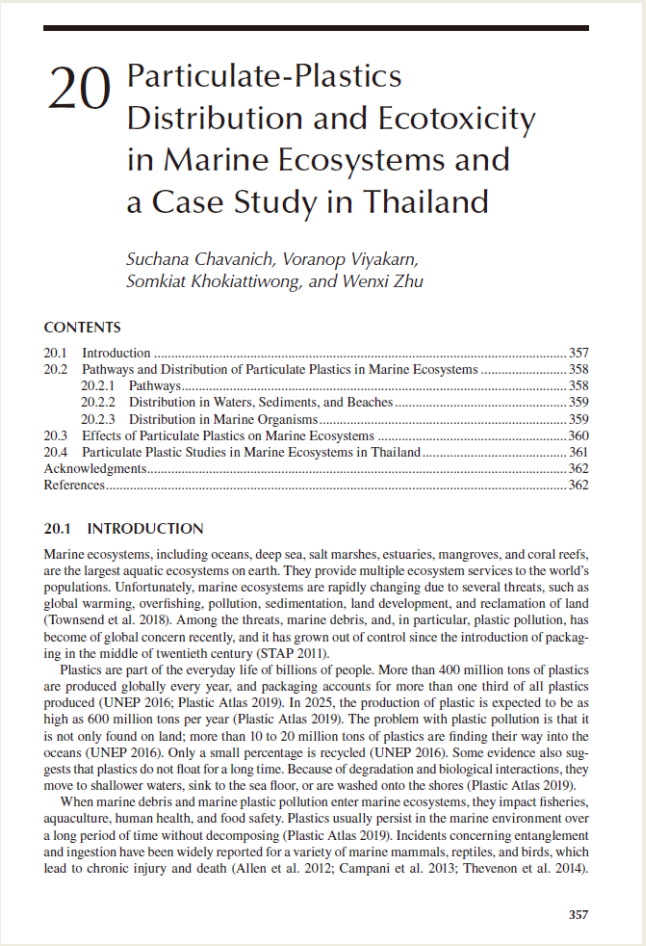
Field guides





Book and book chapter





20 Particulate-Plastics Distribution and Ecotoxicity in Marine Ecosystems and a Case Study in Thailand

Suchana Chavanich, Voranop Viyakarn, Somkiat Khokiattiwong, and Wenxi Zhu

CONTENTS

20.1 INTRODUCTION

Marine ecosystems, including oceans, deep sea, salt marshes, estuaries, mangroves, and coral reefs, are the largest aquatic ecosystems on earth. They provide multiple ecosystem services to the world's populations. Unfortunately, marine ecosystems are rapidly changing due to several threats, such as global warming, overfishing, pollution, sedimentation, land development, and reclamation of land (Townsend et al. 2018). Among the threats, marine debris, and, in particular, plastic pollution, has become of global concern recently, and it has grown out of control since the introduction of packaging in the middle of twentieth century (STAP 2011).

Plastics are part of the everyday life of billions of people. More than 400 million tons of plastics are produced globally every year, and packaging accounts for more than one third of all plastics produced (UNEP 2016; Plastic Atlas 2019). In 2025, the production of plastic is expected to be as high as 600 million tons per year (Plastic Atlas 2019). The problem with plastic pollution is that it is not only found on land; more than 10 to 20 million tons of plastics are finding their way into the oceans (UNEP 2016). Only a small percentage is recycled (UNEP 2016). Some evidence also suggests that plastics do not float for a long time. Because of degradation and biological interactions, they move to shallower waters, sink to the sea floor, or are washed onto the shores (Plastic Atlas 2019).

When marine debris and marine plastic pollution enter marine ecosystems, they impact fisheries, aquaculture, human health, and food safety. Plastics usually persist in the marine environment over a long period of time without decomposing (Plastic Atlas 2019). Incidents concerning entanglement and ingestion have been widely reported for a variety of marine mammals, reptiles, and birds, which lead to chronic injury and death (Allen et al. 2012; Campani et al. 2013; Thevenon et al. 2014).

Papers

https://jspscrepsum.wixsite.com/mysite/blog

Fish subgroup published 75 papers!

Please add acknowledgement, e.g., “This study is (partially) supported by JSPS Core-to-core CREPSUM JPJSCCB20200009”

Photo images are welcome!!

- Takahashi, K. et al. (2021) Toxigenic strains of *Azadinium poporum* (Amphidomataceae, Dinophyceae) from Japan and Vietnam, with first reports of *A. poporum* (ribotype A) and *A. trinitatum* in Asian Pacific. Phycological Res

Prof. Arifin and Prof. Saito gave keynote talks at ICOES, Indonesia Science Expo 2020