Indo-Pacific Journal of Ocean Life

| Indo Pac J Ocean Life | vol. 7 | no. 1 | June 2023 |
| P-ISSN: 2775-1961 | E-ISSN: 2775-1953 |

Special Issue on:
Photo-physiology of marine organisms

Acropora muricata bleaching photo by Dr. Kristen Brown

Indo-Pacific Journal of
Ocean Life

| Indo Pac J Ocean Life | vol. 7 | no. 1 | June 2023 | P-ISSN: 2775-1961 | E-ISSN: 2775-1953 |

Published semiannually **PRINTED IN INDONESIA**

P-ISSN: 2775-1961 E-ISSN: 2775-1953

Indo-Pacific Journal of
Ocean Life

| Indo Pac J Ocean Life | vol. 7 | no. 1 | June 2023 |

ONLINE
http://smujo.id/ol

p-ISSN: 2775-1961; **e-ISSN:** 2775-1953

PUBLISHER
Society for Indonesian Biodiversity

CO-PUBLISHER
Universitas Papua, Manokwari, Indonesia

OFFICE ADDRESS
Research Center for Pacific Marine Resources, Institute for Research and Community, Universitas Papua.
Old Rectorat Complex Block III No. 7-8, Jl. Gunung Salju, Amban, Manokwari 98314, Papua Barat, Indonesia
Tel./fax.: +62-986-212156/211455, email: editors@smujo.id

PERIOD OF ISSUANCE
June, December

Society for Indonesian Biodiversity

Universitas Papua, Manokwari, Indonesia

Published by Smujo International for The Society for Indonesian Biodiversity and Universitas Papua Manokwari, Indonesia

GUIDANCE FOR AUTHORS

Aims and Scope: ***Indo Pacific Journal of Ocean Life*** (**Indo Pac J Ocean Life**) (*formerly Ocean Life*) encourages submission of manuscripts dealing with all aspects of maritime and marine resources in estuaries, coastal zones, continental shelves, the seas and oceans, including marine biodiversity and fisheries resources, biochemistry, physiology, behavior, and genetics of marine life, socio-economic and cultural aspects, conservation and management, as well as biogeochemistry, marine pollution, and climate change.

Article types The journal seeks for: (i) **Research papers**, (ii) **Reviews**, and (iii) **Short communications**. Original full-length research manuscripts are limited to 8,000 words (including tables and figures) or proportional to articles in this publication number (beyond that, it should be with notice). Review articles are also limited to 8,000 words, while Short communications should be less than 2,500 words, except for pre-study (can be more).

Submission The journal only accepts online submissions through the open journal system **(https://smujo.id/ol/about/submissions)** or, for login problems, email the editors at unsjournals@gmail.com (or editors@smujo.id). Submitted manuscripts should be the original works of the author(s). Please ensure that the manuscript is submitted using the template, which can be found at (https://biodiversitas.mipa.uns.ac.id/D/template.doc). The manuscript must be accompanied by a cover letter containing the article title, the first name and last name of all the authors, and a paragraph describing the claimed novelty of the findings versus current knowledge. Please also provide a list of five potential reviewers in your cover letter. They should come from outside your institution and better from three different countries. Submission of a manuscript implies the submitted work has not been published (except as part of a thesis or report, or abstract) and is not being considered for publication elsewhere. When a group writes a manuscript, all authors should read and approve the final version of the submitted manuscript and its revision; and agree on the submission of manuscripts for this journal. All authors should have made substantial contributions to the concept and design of the research, acquisition of the data and its analysis, drafting the manuscript, and correcting the revision. All authors must be responsible for the work's quality, accuracy, and ethics.

Ethics Author(s) must be obedient to the law and/or ethics in treating the object of research and pay attention to the legality of material sources and intellectual property rights.

Copyright If the manuscript is accepted for publication, the author(s) still hold the copyright and retain publishing rights without restrictions. For the new invention, authors must manage its patent before publication.

Open Access The journal is committed to free-open access that does not charge readers or their institutions for access. Readers are entitled to read, download, copy, distribute, print, search, or link to the full texts of articles, as long as not for commercial purposes. The license type is CC-BY-NC-SA.

Acceptance Only articles written in US English are accepted for publication. Manuscripts will be reviewed by editors and invited reviewers (double-blind review) according to their disciplines. Authors will generally be notified of acceptance, rejection, or need for revision within 1 to 2 months of receipt. Manuscripts will be rejected if the content does not align with the journal scope, does not meet the standard quality, is in an inappropriate format, or contains complicated grammar, dishonesty (i.e., plagiarism, duplicate publications, fabrication of data, citations manipulation, etc.), or ignoring correspondence in three months. The primary criteria for publication are scientific quality and significance. **Uncorrected proofs** will be sent to the corresponding author by system or email as .doc or .docx files for checking and correcting typographical errors. The corrected proofs should be returned in 7 days to avoid publication delays. The accepted papers will be published online in chronological order at any time but printed at the end of each month.

Free of charge This publication is dedicated entirely to the advancement of science and technology, therefore author(s), or author institution(s) are not subject to publication fees. **Reprints** The sample journal reprint is only available by special request. Additional copies may be purchased when ordering by email and sending back the uncorrected proofs.

Manuscript preparation Manuscript is typed on A4 (210x297 mm^2) paper size, in a single column, single space, 10-point (10 pt) Times New Roman font. The margin text is 3 cm from the top, 2 cm from the bottom, and 1.8 cm from the left and right. Smaller lettering sizes can be applied in presenting tables and figures (9 pt). Word processing program or additional software can be used; however, it must be PC compatible, use the template, and be Microsoft Word based (.doc or .rtf; not .docx). **Scientific names** of species (incl. subspecies, variety, etc.) should be written in italics, except in italicized sentences. Scientific names (genus, species, author) and cultivar or strain should be mentioned completely for the first time mentioning it in the body text, especially for taxonomic manuscripts. The genus name can be shortened after the first mention, except in early sentences, or where this may generate confusion; name of the author can be eliminated after the first mention. For example, *Rhizopus oryzae* L. UICC 524 can be written hereinafter as *R. oryzae* UICC 524. Using trivial names should be avoided. **Biochemical and chemical nomenclature** should follow the order of the IUPAC-IUB. For DNA sequences, it is better to use Courier New font. Standard chemical abbreviations can be applied for common and clear used, for example, completely written butilic hydroxyl toluene (BHT) to be BHT hereinafter. **Metric measurements** should use IS denominations, and other systems should use equivalent values with the denomination of IS mentioned first. A dot should not follow abbreviations like g, mg, mL, etc. Minus index (m^{-2}, L^{-1}, h^{-1}) suggested being used, except in things like "per-plant" or "per-plot." **Mathematical equations** can be written down in one column with text; in that case, they can be written separately. **Numbers** one to ten are written in words, except if it relates to measurement, while values above them are written in number, except in early sentences. The fraction should be expressed in decimal. In the text, it should be used "%" rather than "percent." Avoid expressing ideas with complicated sentences and verbiage/phrasing, and use efficient and effective sentences.

The title of the article should be written in compact, clear, and informative sentence, preferably not more than 20 words. Name of author(s) should be completely written, especially for the first and the last name. **Name and institution** address should also be completely written with street name and number (location), postal code, telephone number, facsimile number, and email address. We choose local names in Bahasa Indonesia for universities in Indonesia. The mention of "strata" program, should be avoided. Manuscript written by a group, author for correspondence along with address is required (marked with "♥"). **The title page** (first page) should include title of the article, full name(s), institution(s) and address(es) of the author(s); the corresponding authors detailed postage and e-mail addresses (P), and phone (O) and fax numbers (O).

Abstract A concise abstract is required (about 200 words). The abstract should be informative and state briefly the aim of the research, the principal results and major conclusions. An abstract is often presented separately from the article, thus it must be able to stand alone (completely self-explanatory). References should not be cited, but if essential, then cite the author(s) and year(s). Abbreviations should be avoided, but if essential, they must be defined at their first mention. **Keywords** are about five words, covering scientific and local name (if any), research themes, and special methods used; and sorted from A to Z. **Abbreviations** (if any): All important abbreviations must be defined at their first mention there. **Running title** is about five words.

Introduction is about 600 words, covering the aims of the research and provide an adequate background, avoiding a detailed literature survey or a summary of the results. **Materials and Methods** should emphasize on the procedures and data analysis. **Results and Discussion** should be written as a series of connecting sentences, however, for a manuscript with long discussion should be divided into subtitles. Thorough discussion represents the causal effect mainly explains why and how the results of the research were taken place, and do not only re-express the mentioned results in the form of sentences. **Concluding** sentence should be given at the end of the discussion. **Acknowledgements** are expressed in a brief; all sources of institutional, private and corporate financial support for the work must be fully acknowledged, and any potential conflicts of interest are noted.

Figures and Tables of a maximum of three pages should be clearly presented. The title of a picture is written down below the picture, while the title of a table is written above the table. Colored figures can only be accepted if the information in the manuscript can lose without those images; the chart is preferred to use black and white images. The author could consign any picture or photo for the front cover, although it does not print in the manuscript. All images property of others should be mentioned the source. Author is suggested referring to Wikipedia for international boundaries and Google Earth for satellite imagery. If not specifically mentioned, it is assumed to refer to these sources. **There is no appendix**, all data or data analysis is incorporated into Results and Discussions. For broad data, it can be displayed on the website as a supplement.

References Preferably 80% of it comes from scientific journals published in the last 10 years. In the text, give the author names followed by the year of publication and arrange from oldest to newest and from A to Z; in citing an article written by two authors, both of them should be mentioned; however, for three and more authors only the first author is mentioned followed by et al. For example, Saharjo and Nurhayati (2006) or (Boonkerd 2003a, b, c; Sugiyarto 2004; El-Bana and Nijs 2005; Balagadde et al. 2008; Webb et al. 2008). Extent citation should be avoided, as shown with the word "cit." Reference to unpublished data and personal communication should not appear in the list but should be cited in the text only (e.g., Rifai MA 2007, pers. com. (personal communication); Setyawan AD 2007, unpublished data). In the reference list, the references should be listed in alphabetical order. Names of journals should be abbreviated. Always use the standard abbreviation of a journal's name according to the **ISSN List of Title Word Abbreviations** (www.issn.org/2-22661-LTWA-online.php). Please include DOI links for journal papers. The following examples are for guidance.

Journal:

Saharjo BH, Nurhayati AD. 2006. Domination and composition structure change at hemic peat natural regeneration following burning; a case study in Pelalawan, Riau Province. Biodiversitas 7: 154-158. DOI: 10.13057/biodiv/d070213.

The usage of "et al." in long author lists will also be accepted:

Smith J, Jones M Jr, Houghton L et al. 1999. Future of health insurance. N Engl J Med 965: 325-329. DOI: 10.10007/s002149800025.

Book:

Rai MK, Carpinella C. 2006. Naturally Occurring Bioactive Compounds. Elsevier, Amsterdam.

Chapter in the book:

Webb CO, Cannon CH, Davies SJ. 2008. Ecological organization, biogeography, and the phylogenetic structure of rainforest tree communities. In: Carson W, Schnitzer S (eds.). Tropical Forest Community Ecology. Wiley-Blackwell, New York.

Abstract:

Assaeed AM. 2007. Seed production and dispersal of *Rhazya stricta*. 50th annual symposium of the International Association for Vegetation Science, Swansea, UK, 23-27 July 2007.

Proceeding:

Alikodra HS. 2000. Biodiversity for development of local autonomous government. In: Setyawan AD, Sutarno (eds.). Toward Mount Lawu National Park; Proceeding of National Seminary and Workshop on Biodiversity Conservation to Protect and Save Germplasm in Java Island. Universitas Sebelas Maret, Surakarta, 17-20 July 2000. [Indonesian]

Thesis, Dissertation:

Sugiyarto. 2004. Soil Macro-invertebrates Diversity and Inter-Cropping Plants Productivity in Agroforestry System based on Sengon. [Dissertation]. Universitas Brawijaya, Malang. [Indonesian]

Information from the internet:

Balagadde FK, Song H, Ozaki J, Collins CH, Barnet M, Arnold FH, Quake SR, You L. 2008. A synthetic *Escherichia coli* predator-prey ecosystem. Mol Syst Biol 4: 187. DOI: 10.1038/msb.2008.24. www.molecularsystembiology.com.

EDITORIAL NOTE
For Special Issue on

"Photo-physiology of marine organisms"

Indo-Pacific Journal of Ocean Life vol. 7, no. 1, June 2023

Greetings!

This special edition of "*Photo-physiology of marine organisms*" in the Indo-Pacific Journal of Ocean Life is dedicated to the late Dr. Ricardo F. Tapilatu from the Pacific Marine Resources Research Center, University of Papua (UNIPA), Manokwari, Indonesia, and the then Editor-in-Chief. Dr. Tapilatu received the request in August 2021, and the Editorial Office launched this special edition announcement in June 2023.

The team members worked under the Pole of Research Excellence in Sustainable Marine Biodiversity (PRE-SMB), led by Dr. R. Bhagooli and the Department of Biosciences & Ocean Studies, Faculty of Science at the University of Mauritius. They submitted several manuscripts related to photo-physiological studies of marine organisms around the waters of the Republic of Mauritius. The peer-reviewed papers are presented under the special issue entitled "*Photo-physiology of marine organisms*." This special issue is presented in the context that the waters of the Republic of Mauritius in the Indian Ocean possess one of the most biodiverse but fragile coral reefs and mangrove ecosystem-associated organisms. These ecosystems provide ecological goods and services supporting coastal and national economies. Still, the same ecosystems are now at peril after extreme climatic phenomena, including climate change-driven ocean warming.

This special edition includes the photo-physiological features and stress responses in several photosynthetic marine organisms and/or marine organisms in symbiotics with photosynthetic microalgae. The original article by Narrain et al. documented three macroalgae variables: photosynthetic, phytochemicals, and anti-oxidative responses. At the same time, Gopeechund et al. present photo-physiological and anti-oxidant acclimatization in macroalgae in different nutrient regimes. Using macroalgae could attract more attention, especially in developing the "Blue Economy" concept in developing countries. Fai et al. present photosynthetic responses and distribution of the ascidian *Diplosoma simile*. The opportunistic or invasive behavior of *D. simile* seems important to be characterized as mass coral bleaching/mortality events increase in severity and frequency worldwide. Jogee et al. present spatial photo-physiological responses of diseased and non-diseased coral parts, while Mundil et al. report the prevalence and photo-physiological thermal responses of the coral disease, Skeletal Eroding Band (SEB), caused by the ciliate *Halofolliculina corallasia*, in *Acropora muricata*.

Coral diseases are increasingly being reported worldwide as local and global stressors. They represent a lethal threat to the productivity and subsistence of coral reefs, especially in the wake of climate change. Ricot et al. investigate the photo-physiological responses of fish predated and non-predated parts of a thermally resilient coral, *Porites lutea*. It is important to test the impacts of other biological stressors, such as fish predation, on coral surviving ocean warming events to inform better coral management and conservation. Jeetun et al. investigated whether the thermal photosynthetic responses of *A. muricata* are enhanced following a coral field transplantation experiment, while Munbodhe et al. assessed the thermal tolerance of endemic/rare corals. As coral bleaching/mortality events appear more pronounced, it is essential to test whether corals can acclimatize or adapt to different thermal regimes. Ramah et al. documents variable photosynthetic thermal stress responses between two species of giant clams (Tridacnines), *Tridacna maxima* and *T. squamosa*, from Rodrigues Island. Although giant clams (Tridacinidae) are protected in many countries, the decline in their population is increasingly being reported. That is important to understand whether global warming is a major contributor must be determined for its conservation. Kaullysing et al. present a difference in photo-physiological responses of various parts of the salt-tolerant tropical mangrove plant, the *Rhizophora mucronata*. Therefore, it is worth understanding the photosynthetic contributions of various tree parts as they are subject to varying environmental conditions. Perrine et al. extend the thermal stress studies on Red Coralline Algae from Mauritius Island. The study on understanding the thermal photo-physiological susceptibility of *Hydrolithon onkodes*, an attractor of coral larvae, has important implications for managing the recovery of thermal stress-affected reefs. Finally, this special issue ends with findings presented by Soondur et al. relating to micro-phytoplankton density, diversity, and photophysiology from degraded and non-degraded reefs around Rodrigues Island.

The contributions of this special edition foster new insights into the photo-physiology of marine organisms through the application of chlorophyll fluorescence technique using the Pulse-Amplitude-Modulated fluorometer. Furthermore, the findings presented here may further inform decision-making for coral reefs and mangrove conservation and management in the Republic of Mauritius and the wider Indian Ocean.

Associate Professor (Dr.) Ranjeet Bhagooli
Editor-in-Chief

BSc (Hons) MPhil & MBA (MU), MSc & Ph.D. (Japan)
CMarSci (Oceanography), CSci CBiol FRSB FIMarEST FMBA (UK), Fellow (ICRS), FMAST (MU), FSB (MU)
Dept. Biosciences & Ocean Studies, Faculty of Science,
University of Mauritius, Réduit 80837, Republic of Mauritius

THIS PAGE INTENTIONALLY LEFT BLANK