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- b) Ruang lingkup artikel ini sangat sesuai dengan bidang penulis yakni oceanografi. Pembahasan dinilai cukup baik, dimana penelitian ini menganalisis tentang total bahan tersuspensi dan informasi suhu permukaan laut di sekitar Laut Timor, Teluk Van Diemen, dan Teluk Beagle. dan didukung dengan 21 pustaka, dimana yang lebih dari 10 tahun ada 1 pustaka
- c) Artikel ilmiah ini dinilai telah memberikan data dan informasi yang mencukupi Penelitian ini menggunakan data dari tiga lokasi di Australia Utara, dimana untuk data SST dan total suspended matter (TSM) di area penelitian diperoleh dari Google Earth Engine and Open-Source Software. Data TSM yang divalidasi dengan Sentinel-3 Ocean and Land Color Instrument Earth Observation Full Resolution (OLCI EFR).
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Panidi, E.A., Rykin, I.S. (2020) InterCarto, InterGIS

^a Geoinformatics Research Group, Faculty of Computer Science, Brawijaya University, Malang, Indonesia

^b Department of Oceanography, Faculty of Fisheries and Marine Science, Universitas Diponegoro, Tembalang Campus, St. Prof. Soedarto S.H., Semarang, Central Java, Indonesia

^c Faculty of Marine Science and Fisheries, Department of Marine Science, Hasanuddin University, Makassar, South Sulawesi, Indonesia

Abstract

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The sea surface temperature and total suspended matter is important for fisheries industry to increase the opportunity to catch the fish. Traditional methods to monitor this phenomenon is by using the remote sensing techniques. However, conventional remote sensing methods is need higher computer specifications as well as larger space of hard disk drive and commercial software to process the datasets. The availability of cloud-computing platform such as Google Earth Engine that available free for public will provide benefit for researcher to increase the efficiency and effectivity of large-scale imageries processing. This study proposed the sate-of-the-art cloud-computing platform of GEE to monitor and map the sea surface temperature and total suspended matter for long periods of analysis of Timor Sea, Van Diemen Gulf, and Beagle Gulf, Australia. In total there more than 600 images of Landsat 8 Collection 1 Tier 1 calibrated top-of-atmosphere (TOA) reflectance is used and obtained within the GEE platform. The Radiative transfer equation (RTE) method is used to extract the surface temperature. To extract the total suspended matter, the Sentinel-3 Ocean and Land Color Instrument Earth Observation Full Resolution (OLCI EFR) is used. The Case-2 Regional CoastColour (C2RCC) processor within the SentiNel Application Platform (SNAP) software is used. The result show that the GEE platform is successfully captured the dynamic sea surface temperature as well as the total suspended matter with high efficiency in term of time and hard disk drive consumption. © Published under licence by IOP Publishing Ltd.

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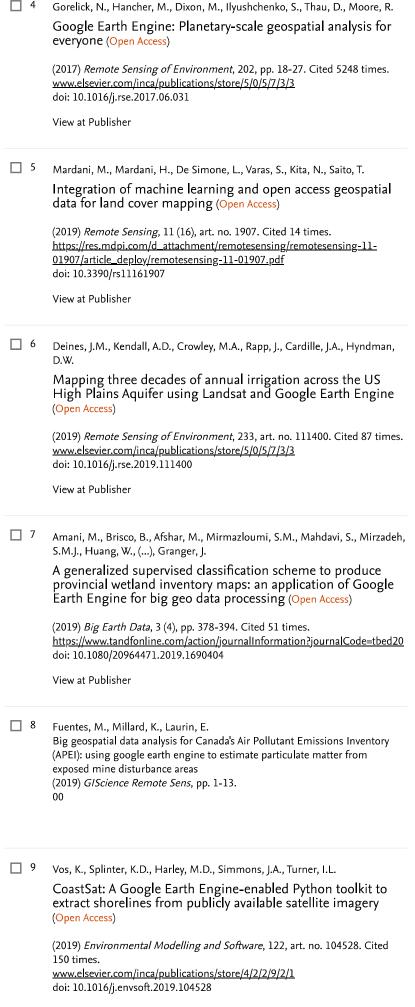
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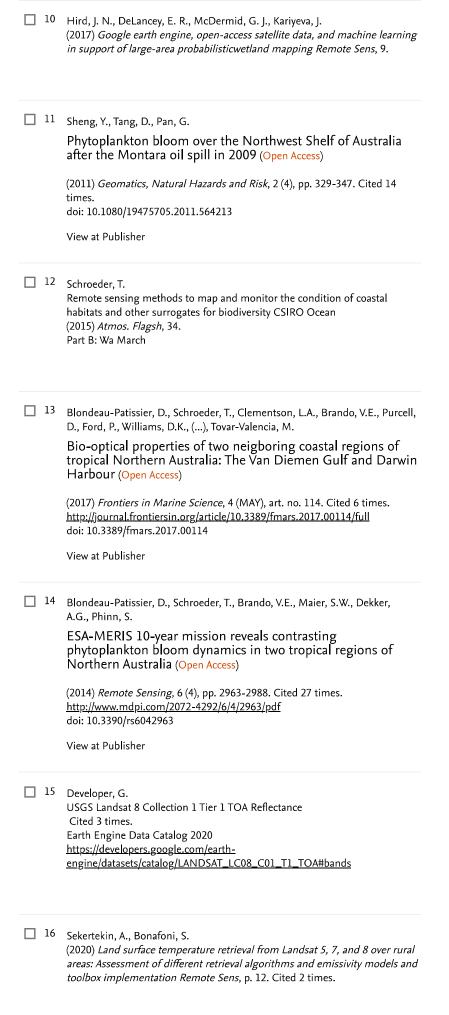
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Preface

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doi:10.1088/1755-1315/750/1/011001

PREFACE

On behalf of the Organizing Committee, I would like to extend our warmest regards to all participants of the 6th International Conference on Tropical and Coastal Region Eco-Development (ICTCRED) 2020. This annual conference was held on 27-28 October 2020, organized by the Faculty of Fisheries and Marine Science, Universitas Diponegoro, Semarang, Central Java, Indonesia.

We brought an essential global topic the *Sustainable Development in Coastal Area*. The conference aims to provide a forum to exchange ideas and their current achievements for researchers, academicians, professionals, and industries to expose and exchange innovative ideas, methods, and experiences in the areas related to tropical life sciences and coastal development.

We have accepted 107 abstracts for oral and poster presentations coming from different universities and research centers from Indonesia, Japan, USA, UK, Netherlands, South Korea, Belgium, and Malaysia, which were consisted of 15 big interests. Besides, we have cordially invited ten highly respected researchers as keynote speakers with different fields to share their knowledge and expertise. We are grateful for each one of them for setting aside their valuable time to participate in this conference.

The 6th ICTCRED 2020 was firstly planned to be held offline in Semarang, Indonesia. However due to the pandemic COVID-19 situation, we had to adapt the new normal regulation which restrict the face to face meeting to avoid the massive virus transmission. Therefore, the 6th ICTCRED 2020 was held in virtual format using Zoom application. This event could not be postponed since it has become the annual event of the Faculty of Fisheries and Marine Science, Universitas Diponegoro. Despite virtual event, we guarantee that the 6th ICTCRED 2020 was held professionally, following the rule of scientific conference. Starting with the plenary session with the presentation from the keynote speakers, the participants have their presentation in the panel sessions with 10 minute presentation and 10 minute discussion. The presentation of participant was in video recording format to avoid the technical problems during the presentation. However, the presence of participant was an obligation to answer the questions emerging during discussion session. The recording of the plenary session in the first and second day of the 6th ICTCRED 2020 can be seen on https://www.youtube.com/watch?v=j7uZx6ebRQg&t=3094s https://www.youtube.com/watch?v=UQqZrAsvEJg&t=2990s, respectively.

The committee extent very kind thank all participants for the success of the conference. They were Rector of Universitas Diponegoro, Dean of Faculty of Fisheries and Marine Science, the keynote speakers. We also would like to acknowledge the Institute of Physics (IOP) for the collaboration in publishing the conference proceedings, our sponsors the Universitas Diponegoro, COREM Undip, ICZM Center Undip, WCU Undip, ISOI, NIOZ, NWO, Tufts University, and TU Delft.

Finally, we proudly present 62 selected papers in IOP Conference Series: Earth and Environmental Science. We do hope that the 6th ICTCRED 2020 event brings a fruitful knowledge and be a memorable event not only from the scientific perspective but also in the joy of meeting with other scientists for mutual collaboration.

doi:10.1088/1755-1315/750/1/011001

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Coastal Area"

ONLINE SEMINAR

It is a pleasure to invite you to the 6" ICTCRED which will be held in Semarang, 27 - 28 October 2020. The 6 ICTCRED is organized by The Faculty of Fisheries and Marine Science, Diponegoro University, Indonesia. The ICTCRED is an annual conference intended to promote and disseminate scientific findings within the scope of Tropical and Coastal Region Eco Development. The 5 ICTCRED was held succesfully last year in Semarang and the selected articles was published by IOP Proceeding, Biodiversitas, Bioflux, Research Journal of Chemistry and Environment WRA(World Researchers Associations) and Disaster Advance WRA (World Researchers Associations).

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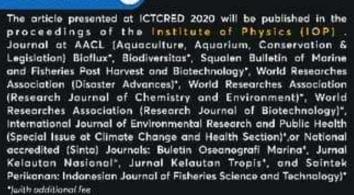


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TIMELINE

Non Presenter Registration: 15 June - 12 October 2020 Abstract Submission : 15 June - 28 August 2020

Acceptance Notification : 25 September 2020

Full Text and Poster

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: 27 October 2020 : 27 - 28 October 2020 : 25 Sept - 5 October 2020

: 5 - 12 October 2020 Normal Rate

The conference will cover main theme Sustainable Development in Coastal Area includes the following topics:

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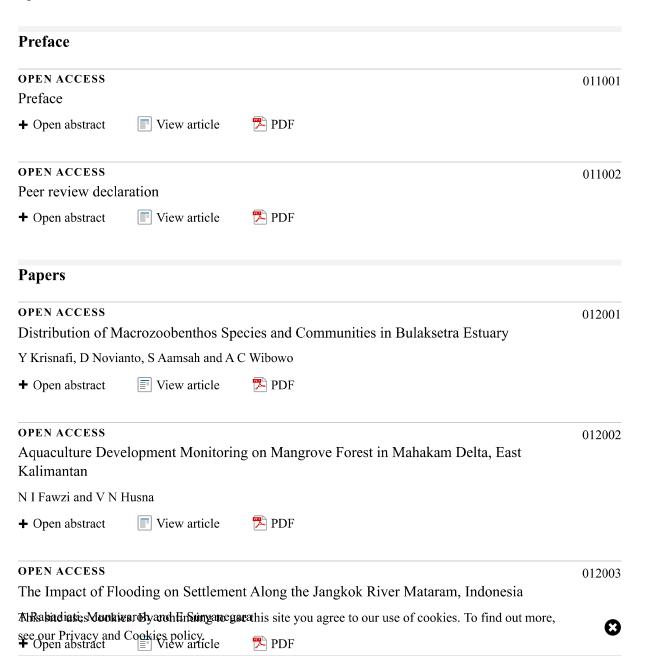
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Distribution of DO (Dissolved Oxygen) and BOD (Biological Oxygen Demand) in the Waters of Karimunjawa National Park using Two-Dimensional Model Approach

N Rizki^{1*}, L Maslukah¹, D N Sugianto^{1,2}, A Wirasatriya^{1,2}, M Zainuri¹, A Ismanto¹, A R Purnomo³ and A D Ningrum⁴

Email: nabilahrizki@gmail.com

Abstract. Massive mangrove conversion into intensive pond farming has become environmental problem in Kemujan Island and Karimunjawa Island which affect the water quality. This research aimed to examine the dispersion of DO and BOD related to the current pattern in the seas west of Kemujan Island and Karimunjawa Island by using two-dimensional modelling simulations. Quantitative and descriptive methods were used to provide interpretation and analysis of the modelling simulation results. Modelling simulations were conducted in September 2019. The validation results show that the model and the field measurements has a very good. The results show that the current characteristics are dominated by tidal current, which moves westward with an average magnitude of 0.078 m/s. Furthermore, divergence, convergence and turbulence are also identified. Based on the simulation results, the prediction of DO and BOD concentrations fluctuate in Lagoon Mrican. During spring tide, the DO concentration changes from 7.95 - 8.1 mg/L into 8.55 - >9.45 mg/L and during neap tide, it changes from 8.55 - 8.7 mg/L into 9.15 - >9.45 mg/L. On the other hand, the BOD concentration increases from 0 - 0.08 mg/L to 0.88 - 0.96 mg/L during spring tide and neap tide.

1. Introduction

1.1. Background

Karimunjawa Islands have a coastal area that is dominated by mangrove ecosystems. In Karimunjawa was found that the phenomenon of mangrove deforestation in the Karimunjawa National Park area was 20.69 ha, which was dominated by the conversion of mangrove land to aquaculture ponds [1,2]. There is urgent need to develop of sustainable management in the utilization of mangrove forests [3], as well as corals [4], seagrass [5] and other ecosystems. In fact, marine and coastal ecosystems are part of the biodiversity and the most vulnerable globally [6]. One of the factors affecting the condition of the coastal ecosystem is the activity of utilizing coastal resources, such as the waters of the Karimunjawa

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Coastal Buffer Zone Management in Banten Province Coastal Region During The December 2018

The Effect of ENSO and IOD on The Variability of Sea Surface Temperature and Rainfall in The Natuna Sea

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Abstract. The Natuna Sea is located at the northwestern part of Indonesia. Previous studies had showed that ENSO has a stronger impact on SST than chlorophyll-a. According to several studies, Indonesian oceans are heavily impacted by IOD. This study uses SST data with high-resolution satellite imagery (MODIS and Pathfinder) and rainfall and wind data from the Reanalysis Model (ERA-5) which is processed using a composite method and correlation grid. This research results, when *La-Niña* negative IOD SST will decrease 1°C and rainfall rises 7 mm/day while when *El-Niña* IOD positive SST will increase by 1°C while in rainfall will decrease by 3 mm/day. The variation of SST and rainfall is more influenced by ENSO than IOD.

1. Introduction

Indonesian oceans are located between two large oceans, namely the Pacific Ocean and the Indian Ocean. Natuna Sea, which is located in the northwestern part of the Indonesian oceans is thought to be affected by the two oceans. One aspect of climate variability related to sea surface temperature is the *El-Niño* Southern Oscillation (ENSO), where ENSO is an anomaly of sea surface temperature at the equator of the Pacific Ocean. ENSO has three phenomena including normal ENSO, El-Niño, and La-Niña. SST anomaly does not only occur in the Pacific Ocean but also occurs in the Indian Ocean. IOD or Indian Ocean Dipole is an SST anomaly that occurs in the Indian Ocean which affects Indonesian oceans as well as being affected by IOD [1].

Previous research conducted by several researchers [2,3,4,5] has studied extensively the climate variability of ENSO and IOD, but the research that assessing the simultaneous impact of ENSO and IOD on SST and rainfall has yet to be carried out, particularly in the Natuna Sea. Continuing from previous research, [5] stated that ENSO greatly affects SST in the Natuna Sea and [3] found that IOD

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Astrogorgia sp. from Saparua, Maluku: Phytochemical Content, Antimicrobial, Antioxidant, and Cytotoxicity Properties

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Abstract. Gorgonian is one of marine invertebrates that is still underexplored as a source of bioactive compounds. This study aimed to discover the biological properties of *Astrogorgia* sp. and its phytochemical content. A consecutive extraction method using *n*-hexane, ethyl acetate and methanol was conducted to obtain secondary metabolites from the sample. Antimicrobial assay was performed against ESBL *E. coli*, MRSA, *C. albicans*, and *M. furfur*; cytotoxicity against P388 Murine Leukaemia Cancer Cells, antioxidant was tested using DPPH method. The consecutive extraction method gave yield (%) as follows: 0.21 ± 0.22 from *n*-hexane; 0.67 ± 0.17 from acetyl acetate; and 1.20 ± 0.50 from methanol. All fractions gave positive results on antibacterial assay against all pathogens while only gave antifungal activity against *C. albicans*. Methanol fraction had the highest antioxidant activity, while *n*-hexane fraction showed the best cytotoxicity.

1. Introduction

Sessile marine invertebrates produce unique chemical substances to protect themselves from predator and environmental stresses [1]–[3]. These chemical substances steal attention due to their beneficial biological activity for humans. It is proven by the FDA's approval of several drugs that are originated from marine invertebrate such as ascidian, bryozoan, and sponge [4]. Among all reports, sponge has been emphasized as the most profiling marine invertebrate since many studies successfully isolated bioactive compounds from it [5]. Nonetheless, other invertebrates such as gorgonian become neglected.

Gorgonian is a member of Alcyonacea (soft corals), which is characterized by always have eight tentacles (octocoral) in their polyps with rows of pinnules along both sides of the tentacles [6]. This animal is commonly found in almost all marine environments from shallow-water, mesophotic to the deep sea; therefore, plenty of studies were conducted to discover their biodiversity in Indonesia [6], [7]. However, the study of biological activity of Indonesia's gorgonian is rarely reported. The latest study

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