

DAFTAR PUSTAKA

- Alamsyah, M., Marhento, G., & Siburian, M. F. 2022. Keanekaragaman jenis echinodermata pada zona intertidal di Pesisir Selatan Pulau Tidung Kecil Kepulauan Seribu DKI Jakarta. *EduBiologia: Biological Science and Education Journal*, 2(1), 41- 47.
- Alkautsar, M. D., Suryono, C. A., & Pratikto, I. 2022. Korelasi antara ukuran butir sedimen non pasir dengan kandungan bahan organik di perairan Morodemak, Kabupaten Demak. *Journal of Marine Research*, 11(3), 391-398.
- Amini Tabrizi, R., Dontsova, K., Graf Grachet, N., & Tfaily, M. M. 2022. Elevated temperatures drive abiotic and biotic degradation of organic matter under oxic conditions. *Science of The Total Environment*, 45(1), 13-22.
- Anggara, B., Tanjung, A., & Nasution, S. 2021. Macrozoobenthos community structure in intertidal zone of Sambungo Village Pesisir Selatan Regency of West Sumatera Province. *Asian Journal of Aquatic Sciences*, 4(2), 106-111.
- Arfan, A., Saleh, M.A.M.A., Juanda, M.F., Vera, M., Najibullah, Muhsi, M.H. dan Fahira, L., 2025. Dinamika spasial parameter kimia-oseanografi terkait angin permukaan di kawasan perairan sekitar Pulau Saugi, Pangkajene dan Kepulauan. *Jurnal Environmental Science*, 7(2), 57-71.
- Arikunto, S. 2010. Prosedur penelitian suatu pendekatan praktik. Jakarta: Rineka Cipta.
- Asmoro, A. J., Suryanti, S., & Ruswahyuni. 2017. Hubungan kandungan bahan organik sedimen dengan kepadatan sand dollar di Pulau Cemara Kecil, Kepulauan Karimunjawa. *Journal of Marine Research*, 6(4), 368–375.
- Atekwana, E. A., Ramatlapeng, G. J., Ali, H. N., Njilah, I. K., & Ndong, G. R. 2022. Tide-salinity patterns reveal seawater-freshwater mixing behavior at a river mouth and tidal creeks in a tropical mangrove estuary. *Journal of African Earth Sciences*, 147(2).
- Aziza, N., Bengen, D. G., Prartono, T., & Rastina, R. 2026. Decadal shifts in sediment dynamics and organic matter accumulation in a highly anthropogenic tropical bay: Banten Bay, Indonesia. *Acta Aquatica: Aquatic Sciences Journal*, 13(1), 67-72.
- Bania, J. K., Nath, A., Sileshi, G. W., Paul, A., Kumari, T., Das, A. K., & Nath, A. J. 2026. Variations and drivers of biomass and soil carbon stocks in planted forests across India. *Environmental and Sustainability Indicators*, 29, 101101.
- Bridier, G., Meziane, T., Grall, J., Chauvaud, L., Donnet, S., Lazure, P., & Olivier, F. 2021. Sources, quality and transfers of organic matter in a

- highly-stratified sub-Arctic coastal system (Saint-Pierre-et-Miquelon, NW Atlantic). *Progress in Oceanography*, 190, 102483.
- Brower, J. E., & Zar, J. H. 1990. *Field and laboratory methods for general ecology*. 3rded. Dubuque: Wm. C. Brown Publication.
- Cui, P., Li, H., Cui, L., & Su, F. 2025. Sediment particle size distribution, source of organic matter and environmental implications in the Liao River, northeast China. *Catena*, 249, 108696.
- Daulat, A., Yulianda, F., & Fahrudin, A. 2014. Kandungan bahan organik sedimen dan hubungannya dengan kepadatan makrozoobentos. *Jurnal Ilmu dan Teknologi Kelautan Tropis*, 6(2), 345–356.
- Dharma, B. 1998. *Siput dan kerang Indonesia*. Jakarta: PT Sarana Graha.
- Dian, R., Pribadi, R., & Zainuri, M. 2005. Keanekaragaman sand dollar di Pulau Cemara Besar, Kepulauan Karimunjawa. *Ilmu Kelautan*, 10(1), 1–10.
- Diao, J., Chen, Z., Su, C., Wang, J., Zheng, Z., Sun, Q., Wang, L., Bi, R., & Wang, T. 2023. Legacy and novel perfluoroalkyl substances in major economic species of invertebrates in South China Sea: Health implication from consumption. *Marine Pollution Bulletin*, 192, 115112.
- Dixon-Anderson, B., & Smith, A. B. 2025. Skeletal morphology and evolution of irregular echinoids. *Palaeontology*, 68(1), 1–22.
- Dobo, J. 2009. *Tipologi komunitas lamun kaitannya dengan populasi bulu babi di Pulau Hatta Kepulauan Banda, Maluku* [tesis]. Sekolah Pascasarjana Institut Pertanian Bogor. Bogor, Indonesia.
- Ekamaida, E., Hariyadi, S., Nurilmala, M., Kusmana, C., Krisanti, M., & Syahril, S. 2025. Penilaian kondisi ekologi perairan untuk pengembangan budidaya tiram (Moluska: Ostreidae) di Selat Cunda Kota Lhokseumawe. *Buletin Oseanografi Marina*, 14(1), 101-111.
- Emery, K. A., Rivera, S. G., Pettit, A., Madden, J. R., Schooler, N. K., Hubbard, D. M., & Dugan, J. E. 2025. Spatial patterns of sandy beach habitat use by mobile invertebrates vary with wrack type and tide phase. *Estuarine, Coastal and Shelf Science*, 326, 109510.
- Ezhova, O. V., & Malakhov, V. V. 2022. Origin of echinodermata. *Paleontological Journal*, 56(8), 938-973.
- Farias, L., Martínez-López, N., García, M. R., Rode, M., Schäfer, R. B., & Yen Le, T. T. 2026. Mechanistic prediction of dissolved oxygen concentrations in surface water considering the influence of salinity and temperature. *Hydrology Research*, 57(4), 643-675.
- Feng, X., & Chen, J. 2023. Impacts of environmental factors and freshwater discharges from multiple river outlets on estuarine salinity variation in rainy season: A case study of the Pearl River Estuary in China. *Journal of Hydrology*, 623, 129784.

- Feng, Y., Yang, M., Chen, H., Zhang, K., Ran, F., Chen, Z., & Yang, H. 2025. Synergistic effects of environmental factors on benthic diversity: machine learning analysis. *Water Research*, 282, 123789.
- França, A. D., da Silva, P. M., & Marques-Santos, L. F. 2026. Immune cell profiling in the sand dollar *Mellita quinquiesperforata* Leske, 1778 (Echinodermata: Echinoidea): morphology, phagocytosis, and ABC transporters activity. *Developmental and Comparative Immunology*, 177, 105579.
- Handayani, N. 2020. Fungsi ekologis kawasan intertidal sebagai penyangga ekosistem pesisir. *Jurnal Sumberdaya Pesisir*, 8(1), 15–26.
- Hasibuan, B. E. 2015. Ilmu tanah. Medan: USU Press.
- Hernández-Zaltrón, V., León-Deniz, L. V., & Ahuatzin-Hernández, J. M. 2026. Biodiversity distribution patterns of echinoderms from the Gulf of Mexico and adjacent waters: species richness, beta diversity and endemism. *Hydrobiologia*, 853(4), 1171–1186.
- Junior, R. S. 2024. Hubungan bahan organik sedimen dengan komposisi morfotipe sand dollar di Kepulauan Karimunjawa. *Jurnal Biologi Laut Tropis*, 7(1), 55–63.
- Kenconoajati, H., Ulkhaq, M. F., Anggreani, S. F., Santanumurti, M. B., Kadim, M. K., Arbi, U. Y., Amran, R. H., & Imlani, A. H. 2024. Profile of Pangpang Bay (Banyuwangi, Indonesia) based on water, sediment type, and macrobenthic diversity. *Egyptian Journal of Aquatic Research*, 50(3), 414–423.
- Korwa, M. R., Yulianda, F., & Fahrudin, A. 2013. Kepadatan dan distribusi sand dollar pada perairan berpasir. *Jurnal Ilmu dan Teknologi Kelautan Tropis*, 5(1), 155–164.
- Kroh, A. 2020. Phylogeny and classification of echinoids. *Developments in Aquaculture and Fisheries Science*. 43, 1–17.
- Lawrence, J. M. (Ed.). 2020. *Sea Urchins: Biology and Ecology* (4th ed.). Elsevier.
- Lee, S.-J., Mongiardino Koch, N., Kroh, A., Mooi, R., & Janies, D. 2023. Phylogeny, ancestral ranges and reclassification of sand dollars. *Scientific Reports*, 13, 10182.
- Lee, Y., Kroh, A., & Mooi, R. 2023. Functional morphology of lunules in sand dollars. *Zoomorphology*, 142(2), 287–301.
- Lin, J. P., Tsai, M. H., Kroh, A., Trautman, A., Machado, D. J., Chang, L. Y., Reid, R., Lin, K. T., Bronstein, O., Lee, S. J., & Janies, D. 2020. The first complete mitochondrial genome of the sand dollar *Sinaechinocyamus mai* (Echinoidea: Clypeasteroidea). *Genomics*, 112(2), 1686–1693.

- Liu, Y., He, H., Zhou, J., Fan, H., Wu, Q., & Delang, C. O. 2024. Understanding thermal stratification and circulation dynamics in Fuxian Lake: insights from EFDC simulation study. *Ecological Indicators*, 165, 112202.
- Liu, Y., Wang, Z., & Zhang, L. 2020. Organic matter enrichment and coastal water quality degradation. *Marine Pollution Bulletin*, 158, 111402.
- Lopo, M. Y., Djalo, A., & Sepe, F. Y. 2023. Keanekaragaman jenis echinodermata di zona litoral pantai oesina Kecamatan Kupang Barat Kabupaten Kupang. *JBIOEDRA: Jurnal Pendidikan Biologi*, 1(2), 101-111.
- Ma, S., Cao, Y., Lu, J., Lu, Z., Zhu, J., Zhang, W., & Li, X. 2026. Organic amendment increases soil carbon sequestration by altering carbon stabilization pathways within soil aggregates. *Soil and Tillage Research*, 256, 106868.
- Mandal, A., Dutta, A., Das, R., & Mukherjee, J. 2021. Role of intertidal microbial communities in carbon dioxide sequestration and pollutant removal: A review. *Marine Pollution Bulletin*, 170, 112626.
- Meijer, K. J., El-Hacen, E. H. M., Govers, L. L., Lavaleye, M., Piersma, T., & Olff, H. 2021. Mangrove-mudflat connectivity shapes benthic communities in a tropical intertidal system. *Ecological Indicators*, 130, 108030.
- Miñana-Albanell, C., Ryu, D., & Pérez-Martín, M. Á. 2024. Water temperature model to assess impact of riparian vegetation on Jucar River and Spain. *Water*, 16(21), 3121.
- Mooi, R., & van Noordenburg, H. 2021. Feeding structures and food grooves in clypeasteroid echinoids. *Zoological Journal of the Linnean Society*, 192(3), 707–728.
- Mooi, R., Martinez, S. A., & Del Rio, C. J. 2016. A new South American Miocene species of one-holed sand dollar (Echinoidea: Clypeasteroida: Monophorasteridae). *Zootaxa*, 4173(1), 45-54.
- Mowidu, I. 2001. Pengaruh pemberian bahan organik terhadap sifat fisik tanah. *Jurnal Agroteknologi*, 2(1), 45–52.
- Nguyen, H., Hoang, T., Hawkins, D., Allen, B. J., & Pernet, B. 2021. Temporal variation in food limitation in larvae of the sand dollar *dendraster excentricus*. *Marine Ecology Progress Series*, 665, 127-143.
- Nursasomo, M. T., & Nurcholis, M. 2025. Ability of sandy soil to retain water in various coastal sand land management practices in Bugel Village, Kulon Progo Regency: Kemampuan Lahan Pasir Menahan Air pada Berbagai Praktik Pengelolaan Lahan di Desa Bugel Kabupaten Kulon Progo. *Jurnal Tanah dan Air*, 22(1), 11-18.
- Olalde, J., Vanoli-Marfetán, V., Melissari, N., Celentano, E., Jorge-Romero, G., Rebufello-Karlon, B. A., Ihlenfeld, E. L., Licandro, J. A., Toledo, M.,

- Jorcin, S.B & Lercari, D. 2025. Tourism-induced changes in invertebrate fauna on a Southwestern Atlantic exposed sandy beach. *Marine Pollution Bulletin*, 219, 118249.
- Pett, R. J. 1993. A collection laboratory methods for selected water and sediment quality parameters - Report No. 13. Australia. International Development Program at Australia University and Colleges.
- Pratama, F. A. P., Yuniarti, M. S., Zallesa, S., & Sunarto, S. 2023. Relationship between sediment type, total organic matter, and water quality on mangrove density on Tunda Island, Serang Banten. *Acta Aquatica: Aquatic Sciences Journal*, 10(1), 15-23.
- Ramadhana, I. 2025. Analisis kesesuaian lahan rehabilitasi mangrove di kota lhokseumawe [skripsi]. Program Studi Ilmu Kelautan. Fakultas Pertanian. Universitas Malikussaleh. Aceh, Indonesia.
- Reynold, S. G. 1971. A manual of introductory soil science and simple soil analysis methods. New Caledonia: Western Samoa.
- Saengsupavanich, C., Pranzini, E., Ariffin, E. H., & Yun, L. S. 2023. Jeopardizing the environment with beach nourishment. *Science of The Total Environment*, 870, 161980.
- Salim, A., Yulianda, F., & Fahrudin, A. 2019. Analisis regresi linier dalam kajian ekologi pesisir. *Jurnal Statistika Terapan*, 3(1), 45–54.
- Saputro, S. D., Widyorini, N., & Ruswahyuni. 2016. Distribusi dan kepadatan sand dollar di perairan Jepara. *Management of Aquatic Resources Journal*, 5(3), 191–198.
- Sari, D. P., & Hartati, R. 2020. Distribusi sand dollar di Pulau Cemara Besar Jepara. *Journal of Marine Research*, 9(2), 134–142.
- Sarwono, J. 2005. Teori dan praktik analisis statistik. Yogyakarta: Andi Offset.
- Schmidt, L. M., Anderson Benaim, G., & Bronstein, O. 2026. Unravelling echinoid mass mortalities: A global overview of mechanisms, Spatio-temporal trends, and taxonomic insights. *Biological Reviews*, 101(1), 221-236.
- Setiawan, R., Amalia, R., Fajariyah, S., & Kurniawan, J. 2024. Distribution pattern of sand dollar (*Arachnoides placenta*) in the intertidal ecosystem of Duta Coastal, Probolinggo Regency. *Buletin Oseanografi Marina*, 13(3), 384-390.
- Soliman, A., Amleh, A., Kafafy, S., & Bos, A. R. 2018. Population ecology, reproduction, and locomotion of the sand dollar *Sculpisitechinus auritus* (Echinodermata: Echinoidea) in the Gulf of Suez, northern Red Sea. *Marine Biodiversity*, 48(2), 1213-1221.
- Sudjana. 1992. Metoda statistika. Bandung: Tarsito.

- Supriyantini, E., Widyorini, S., & Soeprbowati, T. R. 2017. Kandungan bahan organik dalam sedimen di Perairan Mangrove Kelurahan Panjang Wetan, Kota Pekalongan. *Jurnal Kelautan Tropis*, 20(2), 163-171.
- Suryanti, Ruswahyuni. 2014. Differences in the abundance of sea urchin (Echinoidea) on coral and seagrass ecosystems in Pancuran Belakang, Karimunjawa Jepara. *Saintek Perikanan* 10(1): 62–67.
- Suryanti, S., & Ruswahyuni. 2017. Hubungan kandungan bahan organik sedimen dengan kepadatan sand dollar di Pulau Cemara Kecil, Kepulauan Karimunjawa. *Journal of Marine Research*, 6(4), 368–375.
- Syawalani, A., Irawan, A., & Sari, L. I. 2024. Keanekaragaman dan kelimpahan asteroidea di zona intertidal Gusung Sapa Segajah Kota Bontang. *Tropical Aquatic Science*, 3(1), 64-70.
- Tech, T. 1986. Recommended protocols for measuring conventional sediment variabels in Puget sound final report TC-3991-04 for U. S. Environmental Protection Agency, Region 10. Seattle, USA.
- Tritama, R., Akhrianti, I., & Hudatwi, M. A. 2022. Studi keanekaragaman bivalvia pada zona intertidal di Pantai Kota Pangkalpinang. *Journal of Tropical Marine Science*, 5(1), 55-62.
- Twilley, R. R., Chen, R. H., & Hargis, T. 1992. Carbon sinks in mangroves and their implications to carbon budget of tropical coastal ecosystems. *Water, Air, and Soil Pollution*, 64(1-2), 265 – 288.
- Uboldi, T., Bridier, G., Olivier, F., Grall, J., Chauvaud, L., & Tremblay, R. 2024. Acclimation capacity of Echinarachnius parma sand dollars enduring a highly seasonal sub-Arctic coastal system. *Marine Ecology Progress Series*, 747, 83-97.
- Van der Meer, T. V., Verdonschot, P. F., Dokter, L., Absalah, S., & Kraak, M. H. 2022. Organic matter degradation and redistribution of sediment associated contaminants by benthic invertebrate activities. *Environmental Pollution*, 306, 119455.
- Van Regteren, M., Amptmeijer, D., De Groot, A. V., Baptist, M. J., & Elschot, K. 2020. Where does the salt marsh start? Field-based evidence for the lack of a transitional area between a gradually sloping intertidal flat and salt marsh. *Estuarine, Coastal and Shelf Science*, 243, 106909.
- Yang, L., Liu, X., & Qian, F. 2020. Research on water thermal effect on surrounding environment in summer. *Energy and buildings*, 207, 109613.
- Zachos, F. E., & Ziegler, A. 2024. Evolutionary biology of echinoids. *Biological Reviews*, 99(1), 1–28.
- Zainal, Z., Kushadiwijayanto, A. A., Safitri, I., & Sofiana, M. S. J. 2023.. Community of Phytoplankton as Aquatic Quality Bioindicator in Teluk Melanau Waters Lemukutan Island West Kalimantan. *Journal of Platax*, 11(2), 455- 472.

- Zebua, H., & Halawa, E. H. 2025. Strategi manajemen kualitas air di perairan umum untuk mendukung kehidupan akuatik. *Peraut*, 2(1), 128–136.
- Zeng, H., Tang, C. S., Zhu, C., Cheng, Q., Lin, Z. Z., & Shi, B. 2022. Investigating soil desiccation cracking using an infrared thermal imaging technique. *Water Resources Research*, 58(1), 30916.
- Zheng, Q., Hu, Y., Zhang, S., Noll, L., Böckle, T., Richter, A., & Wanek, W. 2019. Growth explains microbial carbon use efficiency across soils differing in land use and geology. *Soil Biology and Biochemistry*, 128, 45-55.