

DAFTAR PUSTAKA

- [DJMGB] Direktorat Jenderal Minyak dan Gas Bumi. 2026. Lebih jauh tentang tumpahan minyak di laut. Diakses pada <https://migas.esdm.go.id/post/Lebih-Jauh-Tentang-Tumpahan-Minyak-di-Laut>.
- [PPRI] Peraturan Pemerintah Republik Indonesia Nomor 22 Tahun 2021. Lampiran VIII, tentang penyelenggaraan perlindungan dan pengelolaan lingkungan hidup. Baku Mutu Air Laut.
- Abousnina, R., Ghaffour, N., & Nghiem, L. D. 2025. Mitigating offshore oily wastewater pollution: Sustainable strategies for treatment, disposal, and reuse. *Marine pollution bulletin*, 219, 118240
- Ageli, M. K., Hamilton, P. B., Bramburger, A. J., Russell, J., Vogel, H., Bijaksana, S., & Haffner, G. D. 2024. Morphological variation in extinct Aulacoseira (Bacillariophyta) species from Lake Towuti, with a description of novel species. *Journal of Great Lakes Research*, 50(3), 102230.
- Akmatul, H. 2020. Komunitas fitoplankton di Sungai Kreung Mane Aceh Utara. *Jurnal Ilmiah Studi Perairan*. 3(2), 167-179.
- Annisa, N. 2024. Distribusi diatom epifit secara vertikal pada batang mangrove indukan *Avicennia* sp. di ekosistem mangrove Desa Cut Mamplam Kota Lhokseumawe [skripsi]. Program Studi Ilmu Kelautan Fakultas Pertanian Universitas Malikussaleh. Aceh, Indonesia.
- Arifa, D. 2025. Analisis produktivitas primer di perairan kota Lhokseumawe dan faktor yang mempengaruhinya [skripsi]. Program Studi Ilmu Kelautan. Fakultas Pertanian. Universitas Malikussaleh. Aceh, Indonesia.
- Arulananthan, A., Scholz, B., Karsten, U., Grossart, H. P., Sigurbjörnsdóttir, A., Rolfsson, Ó., Joerss, H., Duarte, B., & Vilhelmsson, O. Þ. 2025. Arctic and sub-Arctic marine diatom responses to PFAS exposure: Understanding physiological changes and resilience. *Aquatic Toxicology*, 107562.
- Azwandari, A. 2018. Keanekaragaman plankton sebagai indikator kualitas air di wilayah perairan Teluk Hurun Kabupaten Pesawaran [skripsi]. Program studi pendidikan Biologi. Universitas Islam Negeri Raden Intan. Lampung, Indonesia.
- Barus, T. A. 2004. Faktor-faktor lingkungan abiotik dan keanekaragaman plankton sebagai indikator kualitas perairan danau toba (Environmental abiotic factors and the diversity of plankton as water quality indicators in lake toba, North Sumatera, Indonesia). *Journal of People and Environment*, 11(2), 64-72.
- Bec, B., Soudant, D., Hernández-Fariñas, T., Serais, O., Caillard, E., & Derolez, V. 2026. Long-term impacts of climate change on the seasonal trajectories of

- phytoplankton in a coastal lagoon (western Mediterranean Sea). *Journal of Sea Research*, 102678.
- Beer, S., & Beardall, J. 2025. Inorganic carbon acquisition and photosynthetic metabolism in marine photoautotrophs: a summary. *Plants*, 14(6), 904.
- Beyer, J., Goksøyr, A., Hjermann, D. Ø., & Klungsøyr, J. 2020. Environmental effects of offshore produced water discharges: A review focused on the Norwegian continental shelf. *Marine environmental research*, 162, 105155.
- Botes, L. 2003. Phytoplankton: Identification catalogue: Saldanha Bay, South Africa. International Maritime Organization (IMO).
- Breitbart, D., Levin, L. A., Oschlies, A., Grégoire, M., Chavez, F. P., Conley, D. J., Garçon, V., Gilbert, D., Gutiérrez, D., Isensee, K., Jacinto, G. S., Limburg, K. E., Montes, I., Naqvi, S. W. A., Pitcher, G. C., Rabalais, N. N., Roman, M. R., Rose, K. A., Seibel, B. A., Telszewski, M., Yasuhara, M., & Zhang, J. 2018. Declining oxygen in the global ocean and coastal waters. *Science*, 359(6371), 7240.
- Camargo, J. A., & Alonso, Á. 2006. Ecological and toxicological effects of inorganic nitrogen pollution in aquatic ecosystems: a global assessment. *Environment international*, 32(6), 831-849.
- Cardoso, D. S. N., de Oliveira Pereira, K. R., Simonelli, G., & dos Santos, L. C. L. 2026. Microemulsions for produced water treatment: A review of mechanism, performance, and industrial challenges. *Separation and Purification Technology*, 137714.
- Cloern, J. E., Foster, S. Q., & Kleckner, A. E. 2014. Phytoplankton primary production in the world's estuarine-coastal ecosystems. *Biogeosciences*, 11(9), 2477-2501.
- Diaz, R. J., & Rosenberg, R. 2008. Spreading dead zones and consequences for marine ecosystems. *science*, 321(5891), 926-929.
- Dionfriski, A., Sofyan, H.S. & Irvina, N. 2021. Epilithic diatom community structure in the intertidal zone mengkapan waters, sungai apit district, siak regency. *Journal of Coastal and Ocean Sciences*, 2(3), 207-216.
- Eljaiek-Urzola, M., Romero-Sierra, N., Segre-Cabarcas, L., Valdelamar-Martínez, D., & Quiñones-Bolaños, É. 2019. Oil and grease as a water quality index parameter for the conservation of marine biota. *Water*, 11(4), 856.
- Elliott, M., & Whitfield, A. K. 2011. Challenging paradigms in estuarine ecology and management. *Estuarine, Coastal and Shelf Science*, 94(4), 306-314.
- Francis, P. K., Estim, A., & Sidik, M. J. 2024. Oil and grease pollution in the west coast of sabah and water quality index for the conservation of marine biota. *Environment and Natural Resources Journal*, 22(4), 321-334.
- Ghurri, M. A. 2022. Kelimpahan dan keanekaragaman diatom epilithik di sub-das sungai dem Kecamatan Wagir Kabupaten Malang [skripsi]. Program Studi

Biologi Fakultas Sains Dan Teknologi. Universitas Islam Negeri Maulana Malik Ibrahim. Malang, Indonesia.

- Guiry, M. D. 2012, How many species of algae are there? *Journal of Phycology* 48, 1057-1063.
- Hambali, R., Zulkifli, Z., & Siregar, S. H. 2018. The community structure of epiphytic diatoms on seagrass leaves of (*Thalassia hemprichii*) In Nirwana Beach Waters of Padang City, West Sumatera Province. *Jurnal Online Mahasiswa Bidang Perikanan dan Ilmu Kelautan*, 5(2), 1-12.
- Han, S., Meng, F., Cai, Q., Feng, X., Zhang, N., Lu, S., Xiao, H., Liu, Y., Fan, Y., & Lu, X. 2026. Assembly of benthic diatom communities in cold region rivers: ecological drivers and mechanism differentiation of dispersal processes. *Ecological Indicators*, 182, 114534.
- Hao, T. W., Xiang, P. Y., Mackey, H. R., Chi, K., Lu, H., Chui, H. K., van Loosdrecht, M. C. M., & Chen, G. H. 2014. A review of biological sulfate conversions in wastewater treatment. *Water research*, 65, 1-21.
- Hapani, M., Salleh, N. F. M., Samsudin, K., Puad, I. A., & Zakarian, B. 2026. Efficacy of coconut coir composite filters for oil and grease removal: A qualitative ATR-FTIR pilot study. *Case Studies in Chemical and Environmental Engineering*, 101360.
- Haseeba, K. P., Vethamony, P., Veerasingam, S., Aboobacker, V. M., & Al-Khayat, J. A. 2025. A comprehensive review of oil residues in the world oceans: types, characteristics, sources and distribution. *Marine Pollution Bulletin*, 217, 118106.
- He, W., Rong, S., Wang, J., Zhao, Y., Liang, Y., Huang, J., Meng, L., & Xue, L. 2024. Different crystalline manganese dioxide and biochar co-conditioning aerobic composting: Reduced ammonia volatilization and improved organic fertilizer quality. *Journal of Hazardous Materials*, 465, 133127.
- Heinrich, C. G., Wittmann, D., & Zonneveld, K. A. F. 2019. Distribution of diatoms in different aquatic environments and their ecological significance. *Journal of Marine Systems*, 192, 1-12.
- Horiba. 2026. Various infrared gas analyzers and features. Diakses pada <https://www.horiba.com/int/process-and-environmental/measuring-principles/ndir-4/>. Tanggal 3 Agustus 2026.
- Howarth, R. W., & Marino, R. 2006. Nitrogen as the limiting nutrient for eutrophication in coastal marine ecosystems: evolving views over three decades. *Limnology and oceanography*, 51(1), 364-376.
- Hutagalung, H. P. 2010. Pengaruh minyak mineral terhadap organisme laut. Pusat penelitian oseanografi – LIPI. Jakarta. *Oseana*, 25(1), 13-27.
- Irfan, M., Jailani, & Kusumaningrum, W. 2022. Karakteristik beberapa parameter kualitas air (fisika-kimia) di perairan Pangempang Kecamatan Muara Badak Kutai Kartanegara. *Tropical Aquatic Sciences*, 1(2), 90-95.

- Kale, A., & Karthick, B. 2015. Diatoms are unique microscopic algae having intricate cell walls made up of silica. *The diatoms. Resonance*, 20(10), 919-930.
- Karina, S., Agustina, S., Nurfadillah, N., Rafsanjani, A. A., & Heriantoni, J. 2021. Analysis of chlorophyll-a and phytoplankton abundance in Ujung Pancu Waters, Aceh Besar, Indonesia. *IOP Conference Series: Earth and Environmental Science*, 674(1), 1- 6.
- Karlusich, J. J. P., Cosnier, K., Zinger, L., Henry, N., Nef, C., Bernard, G., Scalco, E., Dvorak, E., Tara Oceans Coordinators, Rocha Jimenez Vieira, F., Delage, E., Chaffron, S., Ovchinnikov, S., Zingone, A., & Bowler, C. 2025. Patterns and drivers of diatom diversity and abundance in the global ocean. *Nature Communications*, 16, 3452.
- Kennish, M. J. 2002. Environmental threats and environmental future of estuaries. *Environmental conservation*, 29(1), 78-107.
- Kusdarwati, R., Bustaman, R. H., & Arief, M. 2011. Pengaruh perbedaan warna cahaya terhadap pertumbuhan kultur. *Jurnal Ilmiah Perikanan dan Kelautan*, 3(2), 183-191.
- Larasati, C. E., Paryono, P., Damayanti, A. A., Astriana, B. H., & Wahyudi, R. 2025. Sebaran jenis diatom di perairan Teluk Bima: pasca fenomena seasnot. *Journal of Marine Research*, 14(3), 528-535.
- Lestari, S. W., & Wahono, E. P. 2022. Model prediksi kelimpahan *nitzschia* sp. di Perairan Teluk Hurun, Lampung. *Techno-fish*, 6(1), 29-41.
- Li, Y., He, Y., Guo, H., Hou, J., Dai, S., Zhang, P., Tong, Y., Ni, B. J., Zhu, T., & Liu, Y. 2024. Sulfur-containing substances in sewers: Transformation, transportation, and remediation. *Journal of Hazardous Materials*, 467, 133618.
- Li, Z., Wang, J., Zhao, Y., Liu, W., Lei, Z., Yuan, T., Zhang, Z., & Lee, D. J. 2025. Dissolved oxygen control in photosynthetic-oxygen supported algal-bacterial granule system to better coordinate microalgae with bacteria. *Journal of Environmental Chemical Engineering*, 13(3), 116728.
- Madhavi, P., Sailaja, B., & Satyavani, D. 2014. Diatoms as bio-indicators of water quality in freshwater environments. *International Journal of Current Microbiology and Applied Sciences*, 3(9), 113-120.
- Mansour, M. S., Abdel-Shafy, H. I., & Ibrahim, A. M. 2024. Petroleum wastewater: Environmental protection, treatment, and safe reuse: An overview. *Journal of environmental management*, 351, 119827.
- Mao, Y., Long, Y., Gui, J., & Sun, J. 2025. Environmental stresses on diatom and dinoflagellate morphology and community structure in the western Pacific Ocean. *Iscience*, 28(6), 112740.

- Maufilda, D. 2015. Kandungan BOD, COD, TSS, pH, dan minyak atau lemak pada air limbah di inlet dan outlet industri cold storage udang [skripsi]. Universitas Jember, Indonesia.
- Mohamat-Yusuff, F., Yusoff, F. M., Kamarudin, N. A., Zainuddin, A. H., Ali, M. Y., Mohd Ekhsan, N. F., Hassan, M. Z., Aris, A. Z., & Zulkifli, S. Z. 2023. Oil and grease, nutrient and fecal coliform contents in Port Dickson coastal waters improved during the year of COVID-19 pandemic. AIP Conference Proceedings, 2683, 040022.
- Mulyani, H. R. A., & Sujarwanta, A. 2018. Buku lemak dan minyak. Lembaga Penelitian UM Metro, 1-93.
- Nontji, A. 2008. *Plankton Laut*. LIPI Press. Jakarta: 331 hlm.
- Nugroho, S. H. 2019. Karakteristik umum diatom dan aplikasinya pada bidang geosains. *Oseana*, 44(1), 70-87.
- Nurbaya. 2023. Pemanfaatan diatom sebagai bahan isolasi berbasis silika. *Jurnal Ilmu Lingkungan*, 21(2), 45-52.
- Patten, M. S. V, Li, J., & Wikfors, G. H. 2012. New York. Connecticut seagrant. a student's guide to common phytoplankton of Long Island Sound. 59 hlm.
- Pemerintah Provinsi Jawa Tengah. 2012. Peraturan Daerah Provinsi Jawa Tengah Nomor 5 Tahun 2012 tentang Baku Mutu Air Limbah. Pemerintah Provinsi Jawa Tengah.
- Prahardika, B. A., & Styawan, W. M. L. D. 2020. Studi keanekaragaman diatom epilitik serta potensinya sebagai bioindikator kualitas perairan sungai di Coban Tarzan Kabupaten Malang. *Biotropika: Journal of Tropical Biology*, 8(2), 116-124.
- Rahman, A., Haeruddin, H., Ghofar, A., & Purwanti, F. 2022. Kondisi kualitas air dan struktur komunitas diatom (bacillariophyceae) di sungai Babon. *Saintek Perikanan: Indonesian Journal of Fisheries Science and Technology*, 18(2), 125-129.
- Rambe, S. R., Nedi, S., & Nurrachmi, I. 2019. Contents of nitrates, phosphates, silicates and mistakes diatoms (epiphytic) in seagrasses (*Thalassia hemprichii*) Waters Nirwana Beach Kecamatan Teluk Nibung Kota Padang Sumatera Barnat Province. *Asian Journal of Aquatic Sciences*, 2(1), 39-48.
- Reddy, K. K., Kumar, B. S. K., & Gupta, G. V. M. 2025. Impact of land-based freshwater inflows on coastal ocean acidification in the Arabian Sea. *Marine Pollution Bulletin*, 221, 118571.
- Roito, M., Siregar, Y. I., & Mubarak. 2014. Analisis struktur komunitas diatom planktonik di Perairan Pulau Topang, Kabupaten Kepulauan Meranti, Provinsi Riau. *Jurnal perikanan dan kelautan*, 19(2), 22-32.
- Round, F. E., Crawford, R. M., & Mann, D. G. 1990. The diatoms: biology and morphology of the genera. Cambridge university press.

- Sahabudin, E., Prayitno, J., Susanti, H., Admirasari, R., Anam, K., Agustini, N. W. S., Khudzari, J. M., Riyadi, F. A., & Iwamoto, K. 2024. Future trends and patterns in diatom fatty acid research from a bibliometric standpoint. *Biocatalysis and Agricultural Biotechnology*, 61, 103373.
- Sahu, G. K., Satpathy, K. K., Mohanty, A. K., & Sarkar, S. K., 2012. Variations in community structure of phytoplankton in relation to physicochemical properties of coastal waters, southeast coast of India. *Indian Journal of Geo-Marine Sciences*, 41(3), 223-241
- Sahu, K. C., Baliarsingh, S. K., Srichandan, S., Lotliker, A. A., & Kumar, T. S. 2013. Monograph on marine plankton of East Coast of India-A cruise report. INCOIS
- Samosir, R., Simanjuntak, M., & Siregar, S. H. 2022. Struktur komunitas fitoplankton dan kelimpahannya sebagai indikator kualitas perairan. *Jurnal Ilmu Perairan Indonesia*, 20(2), 85-94.
- Sari, N. P., Adiwilaga, E. M., & Pratiwi, N. T. M. 2013. Pengaruh faktor fisika dan kimia perairan terhadap struktur komunitas plankton di perairan tawar. *Jurnal Limnologi Indonesia*, 20(2), 109 -120.
- Sarwono, J. 2006. Metode penelitian kuantitatif dan kualitatif. Yogyakarta: Graha Ilmu.
- Sas, A. A., Suriyanti, S. N. P., Das, S. K., & Cob, Z. C. 2022. Effect of seawater and surface-sediment variables on epipelagic diatom diversity and abundance in the Coastal Area of Negeri Sembilan, Malaysia. *Water*, 14(19), 3187.
- Septiriono. H. N. 2019. Karakteristik umum diatom dan aplikasinya pada bidang geosains. *Oseana*, 44(1), 70 - 87.
- Sharma, K., Shah, G., Singhal, K., & Soni, V. 2024. Comprehensive insights into the impact of oil pollution on the environment. *Regional Studies in Marine Science*, 74, 103516.
- Shimakawa, G. S., & Matsuda, Y. 2025. Multiphase CO₂-dependent photosynthesis in marine diatoms. *Frontiers in Photobiology*, 3, 1571863.
- Siregar, A. S., & Telaumbanua, M. 2010. Struktur komunitas diatom sebagai indikator kualitas perairan. *Jurnal Limnologi Indonesia*, 17(2), 95-104.
- Smol, J. P., & Stoermer, E. F. 2000. The diatoms: Applications for the environmental and earth sciences. Cambridge University Press. *Journal of Botany*. Edinburgh, 57(1), 141-150
- Soeprbowati, T. R. 2011. Variabilitas keanekaragaman dan distribusi vertikal diatom danau rawa pening. *Jurnal Sains Matematika*, 19(3), 65-70.
- Soewondo, P., Iqbal Novanta, M., Widayasih Sarli, P., Diastomo, H., Fauzi, M., Fatimah, W. M., Gusmiati., & Muntalif, B. S. 2026. Pollution characteristics and decline in seawater quality with rapid change in land use: Case Study of Bima Bay, East Nusa Tenggara, Indonesia. *Pollution*, 12(1), 190-204.

- Sofiana, S., Solichin, A., & Wijayanto, D. 2016. Valuasi ekonomi manfaat langsung dan tidak langsung kawasan Waduk Malahayu, Kabupaten Brebes. *Management of Aquatic Resources Journal*, 5(3), 119-126.
- Sriadi, T. R. P. 2020. Jenis dan kelimpahan epifit pada berbagai jenis lamun di Teluk Lantangpeo Kepulauan Tanakeke Kabupaten Takalar [skripsi]. Program Studi Ilmu Kelautan. Fakultas Ilmu Kelautan dan Perikanan. Universitas Hasanudddin. Makasar, Indonesia.
- Sudjana. 1992. *Metoda statistika*. Bandung: Tarsito.
- Sugiyono, S. 2017. *Metode penelitian kuantitatif kualitatif dan R&D*. Bandung: Alfabeta. *Procrastination And Task Avoidance: Theory, Research and Treatment*.
- Suhaimi, N., Maeda, Y., Yoshino, T., & Tanaka, T. 2022. Effects of fatty acid synthase-inhibitors on polyunsaturated fatty acid production in marine diatom *Fistulifera solaris* JPCC DA0580. *Journal of bioscience and bioengineering*, 133(4), 340-346.
- Sulaiman, T. G. 2012. Struktur komunitas bacillariophyta (diatom) di area pertambakan marunda Cilincing, Jakarta Utara [skripsi]. Program Studi Biologi. Fakultas Matematika dan Ilmu Pengetahuan Alam. Universitas Indonesia. Depok, Indonesia.
- Sun, D., Jia, Y., Yang, S., Lang, S., Ye, Z., Li, Z., & Wang, S. 2025. Global patterns in primary production of marine phytoplankton taxonomic groups. *Global and Planetary Change*, 105057.
- Suseno, H. P., & Kristiyana, P. S. 2021. Penurunan konsentrasi minyak lemak dan COD pada limbah cair secara elektroflokulasi. *Jurnal Elektrikal*, 8(2), 10-16.
- Susilawati, R., Hariyadi, S., & Krisanti, M. 2019. Keanekaragaman diatom sebagai indikator kualitas perairan di Waduk Universitas Indonesia, Depok. *Jurnal Ilmu Lingkungan*, 17(2), 191-200.
- Talley, L. D. 2011. *Descriptive physical oceanography: an introduction*. Academic press.
- Tamothran, A. M., Bhubalan, K., Anuar, S. T., & Curtis, J. M. 2022. The degradation and toxicity of commercially traded vegetable oils following spills in aquatic environment. *Environmental Research*, 214, 113985.
- Teng, Y., Qi, Z., Zhou, N., Liu, J., Liu, Z., Wang, Z., Wang, T., & Xiong, D. 2026. Impacts of oil properties on the interaction between dispersed crude oil and marine diatom. *Estuarine, Coastal and Shelf Science*, 109821.
- Vincent, F., & Bowler, C. 2020. Diatoms are selective segregators in global ocean planktonic communities. *Msystems*, 5(1), 10-1128.
- Wood, M., Lu, P., Yodo, N., Yang, X., & Oduor, P. G. 2025. Multidimensional impacts of oil spills in transit: An overview of trend analysis, remediation

strategies, and community resilience. *Journal of Environmental Management*, 393, 127185.

- Wulandari, I., Yogaswara, D., Rositasari, R., & Falahudin, D. 2019. Pengukuran total petroleum hidrokarbon (TPH) melalui pendekatan kadar minyak-lemak dalam sedimen di perairan Delta Cimanuk, Jawa Barat. *OLDI (Oseanologi dan Limnologi di Indonesia)*, 4(2), 123-132.
- Yadav, A., Srivastava, A., & Verma, J. 2026. Ecotoxicological assessment of emerging pollutants and diatom vulnerability in aquatic ecosystems. *Discover Water*, 6(1), 47.
- Yi, Z., Xu, M., Di, X., Brynjólfsson, S., & Fu, W. 2017. Exploring valuable lipids in diatoms. *Frontiers in Marine Science*, 4, 17.
- Zhang, S., Han, L., & Miao, Y. 2024. Review of non-dispersive infrared sensor technology. In *IET Conference Proceedings CP889*. Stevenage, UK: The Institution of Engineering and Technology, (13), 1829-1833.