DAFTAR PUSTAKA

Afdal dan Riyono, S. H. 2004. Sebaran klorofil-a kaitannya dengan kondisi hidrologi di Selat Makassar. Oseanologi & Limnologi Indonesia, 36: 69–82. http://lipi.go.id/publikasi/sebaran-klorofil-a-kaitannya-dengan-kondisi-hidrologi-di-selat-makassar/23066.

Akhir, M. F. M., Zakaria, N. Z., and Tangang, F. 2014. Intermonsoon variation of physical characteristics and current circulation along the east coast of Peninsular Malaysia. International Journal of Oceanography, 2014: 1–9.

Anderson, S. 2002. An evaluation of spatial interpolation methods on air temperature in Phoenix, AZ. Department of Geography, Arizona State University Tempe.

Andrade, H. A., Alberto, C., and Garcia, E. 1999. Skipjack tuna fishery in relation to sea surface temperature of the southern Brazilian coast. Fisheries Oceanography, 8: 245–254. https://doi.org/10.1046/j.1365-2419.1999.00107.x.

Andrade, H. A., and Teixeira Santos, J. A. 2004. Seasonal trends in the recruitment of skipjack tuna (*Katsuwonus pelamis*) to the fishing ground in the Southwest Atlantic. Fisheries Research, 66: 185–194.

Aoki, Y., Kitagawa, T., Kiyofuji, H., Okamoto, S., and Kawamura, T. 2017. Changes in energy intake and cost of transport by skipjack tuna (*Katsuwonus pelamis*) during northward migration in the northwestern Pacific Ocean. Deep-Sea Research Part II: Topical Studies in Oceanography, 140: 83–93. Elsevier. http://dx.doi.org/10.1016/j.dsr2.2016.05.012.

Ashida, H., Tanabe, T., Suzuki, N., Fukui, A., and Tanaka, S. 2008. Spawning frequency and batch fecundity of skipjack tuna *katsuwonus pelamis* in the tropical west-central Pacific Ocean. Nippon Suisan Gakkaishi, 74: 802–808. https://www.jstage.jst.go.jp/article/suisan/74/5/74_5_802/_article/-char/en.

Ashida, H. 2020. Spatial and temporal differences in the reproductive traits of skipjack tuna *Katsuwonus pelamis* between the subtropical and temperate western Pacific Ocean. Fisheries Research, 221: 105352 1–13. Elsevier. https://doi.org/10.1016/j.fishres.2019.105352.

Aswant, I. Al. 2016. Analisis perbandingan metode interpolasi untuk pemetaan pH air pada sumur bor di Kabupaten Aceh Besar berbasis SIG. 1–76 pp. http://ppids.cs.unsyiah.ac.id/ppids/wp-content/uploads/2018/11/Ilham-Al-Aswant_1208107010066_FMIPA_Informatika.pdf.

Atmadipoera, A. S., and Widyastuti, P. 2015. A numerical modeling study on upwelling mechanism in southern Makassar Strait. Jurnal Ilmu dan Teknologi Kelautan Tropis, 6: 355–372.

Attrill, M. J., and Power, M. 2002. Climatic influence on a marine fish assemblage. Nature, 417: 275–278. https://doi.org/10.1038/417275a.

Audzijonyte, A., Kuparinen, A., Gorton, R., dan Fulton, E. A. 2013. Ecological consequences of body size decline in harvested fish species: positive feedback loops in trophic interactions amplify human impact. Biology Letters, 9: 1–5. https://royalsocietypublishing.org/doi/10.1098/rsbl.2012.1103.

Avila-Alonso, D., Baetens, J. M., Cardenas, R., and De Baets, B. 2020. Spatio-temporal variability of oceanographic conditions in the exclusive economic zone of Cuba. Journal of Marine Systems, 212: 103416. Elsevier. https://doi.org/10.1016/j.jmarsys.2020.103416.

Barkley, R. A., Neill, W. H., and Gooding, R. M. 1978. Skipjack tuna, *Katsuwonus pelamis*, habitat based on temperature dan oxygen requirements. Fishery Bulletin, 76: 653–662.

Beaugrand, G., Lindley, J. A., and Edwards, M. 2002. Reorganization of North Atlantic marine copepod biodiversity and climate. Science, 296: 1692–1694. https://science.sciencemag.org/content/296/5573/1692.

Behrenfeld, M. J., Malley, R. T. O., Siegel, D. A., Mcclain, C. R., Sarmiento, J. L.,

Feldman, G. C., Milligan, A. J., Falkowski, P. G., Letelier, R. M., dan Boss, E. S. 2006. Climate-driven trends in contemporary ocean productivity. Nature, 444: 752–755. https://doi.org/10.1038/nature05317.
Boehlert, G. W., and Mundy, B. C. 1994. Vertical and onshore-offshore distributional patterns of tuna larvae in relation to physical habitat features. Marine Ecology Progress Series, 107: 1–13.
Chambers, R. C., and Leggett, W. C. 1987. Size and age at metamorphosis in marine fishes: an analysis of laboratory-reared winter flounder (*Pseudopleuronectes americanus*) with a review of variation in other species. Canadian Journal of Fisheries and Aquatic Sciences, 44: 1936–1947. https://cdnsciencepub.com/doi/10.1139/f87-238.
Chanda, A., Das, S., Mukhopadhyay, A., Ghosh, A., Akhand, A., Ghosh, P., Ghosh, T., Mitra, D., and Hazra, S. 2018. Sea surface temperature and rainfall anomaly over the bay of bengal during the el niño-southern oscillation and the extreme indian ocean dipole events between 2002 and 2016. Remote Sensing Applications: Society and Environment, 12: 10–22. Elsevier B.V. https://doi.org/10.1016/j.rsase.2018.08.001.
Cheung, W. W. L., Sarmiento, J. L., Dunne, J., Frölicher, T. L., Lam, V. W. Y., Palomares, M. L. D., Watson, R., and Pauly, D. 2012. Shrinking of fishes exacerbates impacts of global ocean changes on marine ecosystems. Nature Climate Change, 3: 254–258. Nature Publishing Group. http://dx.doi.org/10.1038/nclimate1691.
Deser, C., Phillips, A. S., and Alexander, M. A. 2010. Twentieth century tropical sea surface temperature trends revisited. Geophysical Research Letters, 37: 1–6.
Dizon, A. E., Neill, W. H., and Magnuson, J. J. 1977. Rapid temperature compensation of volitional swimming speeds and lethal temperatures in tropical tunas (Scombridae). Environmental Biology of Fishes, 2: 83–92.
DKP. 2016. Data Statistik Perikanan Sulawesi Selatan. Marine and Fisheries Services.
Drinkwater, K. F., Beaugrand, G., Kaeriyama, M., Kim, S., Ottersen, G., Perry, R. I., Pörtner, H. O., Polovina, J. J., and Takasuka, A. 2010. On the processes linking climate to ecosystem changes. Journal of Marine Systems, 79: 374–388. Elsevier B.V. http://dx.doi.org/10.1016/j.jmarsys.2008.12.014.
Dueri, S., Bopp, L., and Maury, O. 2014. Projecting the impacts of climate change on skipjack tuna abundance and spatial distribution. Global Change, 20: 742–753.
Fan, W., Jian, Z., Bassinot, F., and Chu, Z. 2013. Holocene centennial-scale changes of the Indonesian and South China Sea throughflows: evidences from the Makassar Strait. Global and Planetary Change, 111: 111–117. Elsevier B.V. http://dx.doi.org/10.1016/j.gloplacha.2013.08.017.
FAO. 2016. The State of World Fisheries and Aquaculture 2016 (SOFIA): Contributing to Food Security and Nutrition for All. Food and Agriculture Organization of the United Nations. Rome. 200pp.
Feldman, G. C. 2021. OBPG Data Compositing Periods. https://oceancolor.gsfc.nasa.gov/data/compositing-periods/.
Froese, R., and Pauly, D. 1994. Fishbase as a tool for comparing the life history patterns of flatfish. Netherlands Journal of Sea Research, 32: 235–239. https://doi.org/10.1016/0077-7579(94)90001-9.
Fromentin, J. M., Reygondeau, G., Bonhommeau, S., and Beaugrand, G. 2014. Oceanographic changes and exploitation drive the spatio-temporal dynamics of atlantic bluefin tuna (*Thunnus thynnus*). Fisheries Oceanography, 23: 147–156.
Fu, C., Travers-Trolet, M., Velez, L., Grüss, A., Bundy, A., Shannon, L. J., Fulton, E. A., Akoglu, E., Houle, J. E., Coll, M., Verley, P., Heymans, J. J., Jhon, E., and Shin, Y-J. 2018. Risky business: the combined effects of fishing and changes in primary productivity on fish communities. Ecological Modelling, 368: 265–276. Elsevier B.V. http://dx.doi.org/10.1016/j.ecolmodel.2017.12.003.
García, A., Cortés, D., Quintanilla, J., Rámirez, T., Quintanilla, L., Rodríguez, J. M., and Alemany, F. 2013. Climate-induced environmental conditions influencing

interannual variability of mediterranean bluefin (*Thunnus thynnus*) larval growth. Fisheries Oceanography, 22: 273–287.
Gordon, A. L., Susanto, R. D., and Vranes, K. 2003. Cool Indonesian throughflow as a consequence of restricted surface layer flow. Nature, 425: 824–828. https://doi.org/10.1038/nature02038%0A%0ADownload citation.
Gordon, A. L. 2005. Oceanography of the Indonesian seas and their throughflow. Oceanography, 18: 14–27. https://doi.org/10.5670/oceanog.2005.01.
Gordon, A. L., Susanto, R. D., Ffield, A., Huber, B. A., Pranowo, W., and Wirasantosa, S. 2008. Makassar Strait throughflow, 2004 to 2006. Geophysical Research Letters, 35: 3–7.
Gordon, A. L., Sprintall, J., Van Aken, H. M., Susanto, R. D., Wijffels, S., Molcard, R., Ffield, A., Pranowo, W., and Wirasantosa, S. 2010. The Indonesian throughflow during 2004-2006 as observed by the INSTANT program. Dynamics of Atmospheres and Oceans, 50: 115–128. Elsevier B.V. http://dx.doi.org/10.1016/j.dynatmoce.2009.12.002.
Grande, M., Murua, H., Zudaire, I., and Korta, M. 2012. Oocyte development and fecundity type of the skipjack , *Katsuwonus pelamis* , in the western Indian Ocean. Journal of Sea Research, 73: 117–125. Elsevier B.V. http://dx.doi.org/10.1016/j.seares.2012.06.008.
Grande, M., Murua, H., Zudaire, I., Arsenault-Pernet, E. J., Pernet, F., and Bodin, N. 2016. Energy allocation strategy of skipjack tuna *Katsuwonus pelamis* during their reproductive cycle. Journal of Fish Biology, 89: 2434–2448. https://onlinelibrary.wiley.com/doi/abs/10.1111/jfb.13125.
Hall, M., and Roman, M. 2013. Bycatch and Non-Tuna Catch in the Tropical Tuna Purse Seine Fisheries of the World. FAO Fisheries and Aquaculture Technical Paper, Rome. 249 pp. http://www.fao.org/docrep/field/003/ab825f/AB825F00.htm#TOC.
Heath, M. R. 1992. Field investigations of the early life stages of marine fish. Advances in Marine Biology, 28: 1–174. https://www.sciencedirect.com/science/article/abs/pii/S0065288108600395?via%3Dihub.
Hermida, M., Cavaleiro, B., Gouveia, L., and Saraiva, A. 2019. Seasonality of skipjack tuna parasites in the Eastern Atlantic provide an insight into its migratory patterns. Fisheries Research, 216: 167–173. Elsevier. https://doi.org/10.1016/j.fishres.2019.04.010.
Hidayat, R., Zainuddin, M., Safruddin, S., Mallawa, A., and Farhum, S. A. 2019a. Skipjack tuna (*Katsuwonus pelamis*) catch in relation to the thermal and chlorophyll-a fronts during May - July in the Makassar Strait. IOP Conference Series: Earth and Environmental Science, 253: 012045. https://www.scinapse.io/papers/2939932405.
Hidayat, R., Zainuddin, M., Putri, A. R. S., and Safruddin. 2019b. Skipjack tuna (*Katsuwonus pelamis*) catches in relation to chlorophyll-a front in Bone Gulf during the southeast monsoon. AACL Bioflux, 12: 209–218.
Hidayat, R., Zainuddin, M., Mallawa, A., Mustapha, M. A., and Putri, A. R. S. 2019c. Comparing skipjack tuna catch and oceanographic conditions at FAD locations in the Gulf of Bone and Makassar Strait. IOP Conference Series: Earth and Environmental Science, 370: 012038. https://iopscience.iop.org/article/10.1088/1755-1315/370/1/012038/meta.
IATTC. 2016. Tunas, Billfishes and other Pelagic Species in the Eastern Pacific Ocean in 2015, 02. https://www.wcpfc.int/node/27348.
Inaku, D. F. 2011. Analisis pola sebaran dan perkembangan area upwelling di bagian selatan Selat Makassar (Analysis of upwelling distribution and area enlargement in the southern of Makassar Strait). Torani Journal of Fisheries and Marine Science, 25: 67–74. https://media.neliti.com/media/publications/105533-ID-analisis-pola-sebaran-dan-perkembangan-a.pdf.
International Hydrographic Organization. 1953. Limits of Oceans and Seas. *In*

Montecarlo, 3rd edn, pp. 1–123. https://epic.awi.de/id/eprint/29772/1/IHO1953a.pdf.
IPCC. 2014. Global Warming of 1.5°C an IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change. Cambridge. 688pp. https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf.
Irianto, H. E., Wudianto, W., Nugraha, B., Widodo, A. A., Satria, F., and Sadiyah, L. 2015. Indonesia National Report to the Scientific Committee of the Indian Ocean Tuna Commission , 2015. Indian Ocean Tuna Commissiom, IOTC-2015-: 1–27.
Isa, N. S., Akhir, M. F., Kok, P. H., Daud, N. R., Khalil, I., and Roseli, N. H. 2020. Spatial and temporal variability of sea surface temperature during el-niño southern oscillation and indian ocean dipole in the Strait of Malacca and Andaman Sea. Regional Studies in Marine Science, 39: 1–11. Elsevier B.V. https://doi.org/10.1016/j.rsma.2020.101402.
Iwatani, H., Yasuhara, M., Rosenthal, Y., and Linsley, B. K. 2018. Intermediate-water dynamics and ocean ventilation effects on the indonesian throughflow during the past 15,000 years : ostracod evidence. Geology, 46: 567–570. https://doi.org/10.1130/G40177.1.
Jung, S., Pang, I. C., Lee, J. ho, and Lee, K. 2016. Climate-change driven range shifts of anchovy biomass projected by bio-physical coupling individual based model in the marginal seas of East Asia. Ocean Science Journal, 51: 563–580. https://doi.org/10.1007/s12601-016-0055-3.
Kamus Besar Bahasa Indonesia. 2021. Tersedia di https://kbbi.kemdikbud.go.id/entri/teluk. Diakses 23 Juni 2021. [online].
Kelly, P., Clementson, L., Davies, C., Corney, S., and Swadling, K. 2016. Zooplankton responses to increasing sea surface temperatures in the southeastern Australia global marine hotspot. Estuarine, Coastal and Shelf Science, 180: 242–257. Elsevier Ltd. http://dx.doi.org/10.1016/j.ecss.2016.07.019.
Khan, A. M. A., Nasution, A. M., Purba, N. P., Rizal, A., Zahidah, Hamdani, H., Dewanti, L. P., Junianto, Nurruhwati, I., Sahidin, A., Supriyadi, D., Herawati, H., Apriliani, I. M., Ridwan, M., Gray, T. S., Jiang, M., Arief, H., Mill, A. C., and Polunin, N. V. C. 2020. Oceanographic characteristics at fish aggregating device sites for tuna pole-and-line fishery in eastern Indonesia. Fisheries Research, 225: 105471. Elsevier. https://doi.org/10.1016/j.fishres.2019.105471.
Kirby, R. R., Beaugrand, G., and Lindley, J. A. 2009. Synergistic effects of climate and fishing in a marine ecosystem. Ecosystems, 12: 548–561.
Kiyofuji, H., Aoki, Y., Kinoshita, J., Okamoto, S., Masujima, M., Matsumoto, T., Fujioka, K., Ogata, R., Nakao, T., Sugimoto, N., and Kitagawa, T. 2019. Northward migration dynamics of skipjack tuna (*Katsuwonus pelamis*) associated with the lower thermal limit in the western Pacific Ocean. Progress in Oceanography, 175: 55–67. Elsevier Ltd. https://doi.org/10.1016/j.pocean.2019.03.006.
KKP. 2014. Peraturan Menteri Kelautan dan Perikanan Republik Indonesia No.18/PERMEN-KP/2014 tentang Wilayah Pengelolaan Perikanan Negara Republik Indonesia. http://jdih.kkp.go.id/peraturan/18-permen-kp-2014-ttg-wilayah-pengelolaan-perikanan-negara-republik-indonesia.pdf.
Laevastu, T., and Hayes, M. L. 1981. Fisheries Oceanography and Ecology. Fishing News Book Ltd, London. 1–199 pp.
Lee, Z., Marra, J., Perry, M. J., and Kahru, M. 2015. Estimating oceanic primary productivity from ocean color remote sensing: a strategic assessment. Journal of Marine Systems, 149: 50–59. Elsevier B.V. http://dx.doi.org/10.1016/j.jmarsys.2014.11.015.
Lehodey, P., Bertignac, M., Hampton, J., Lewis, A., and Picaut, J. 1997. El nino southern oscillation and tuna in the western Pacific. Nature, 389: 715–718.

https://doi.org/10.1038/39575.
Li, M., Gordon, A. L., Wei, J., Gruenburg, L. K., and Jiang, G. 2018. Multi-decadal timeseries of the indonesian throughflow. Dynamics of Atmospheres and Oceans, 81: 84–95. Elsevier B.V. http://dx.doi.org/10.1016/j.dynatmoce.2018.02.001.
Linus, Y., Salwiyah, dan Irawati, N. 2016. Status kesuburan perairan berdasarkan kandungan klorofil-a di perairan Bungkutoko kota Kendari. Manajemen Sumber Daya Perairan, 2: 101–111.
Liu, H., Mi, Z., Lin, L., Wang, Y., Zhang, Z., Zhang, F., Wang, H., Liu, L., Zhu, B., Cao, G., Zhao, X., Sanders, N. J., Classen, A. T., Reich, P. B., and He, J-S. 2018. Shifting plant species composition in response to climate change stabilizes grassland primary production. Proceedings of the National Academy of Sciences of the United States of America, 115: 4051–4056.
Macfadyen, G. 2010. Potential impacts of climate change on fisheries trade. Background paper produced for the ICTSD meeting on 'Fisheries, Trade and Development,' held in Geneva on 16 June 2010.
Mackas, D. L., Batten, S., and Trudel, M. 2007. Effects on zooplankton of a warmer ocean : Recent evidence from the Northeast Pacific. Progress in Oceanography, 75: 223–252. 11.
Matsumoto, W., Skillman, R., and Dizon, A. 1984. Synopsis of biological data on skipjack tuna, *Katsuwonus pelamis*. 92pp. http://www.fao.org/docrep/017/ap940e/ap940e.pdf.
McKechnie, S., Hampton, J., Pilling, G. M., and Davies, N. 2016. Stock assessment of skipjack tuna in the western and central Pacific Ocean. Western and Central Pacific Fisheries Commission- Scientific Committee, SC12: 1–120.
Medina, A., Abascal, F. J., Megina, C., and Garcia, A. 2002. Stereological assessment of the reproductive status of female atlantic northern bluefin tuna during migration to Mediterranean spawning grounds through the Strait of Gibraltar. Journal of Fish Biology, 60: 203–217.
Mugo, R., Saitoh, S. I., Nihira, A., and Kuroyama, T. 2010. Habitat characteristics of skipjack tuna (*Katsuwonus pelamis*) in the western North Pacific: a remote sensing perspective. Fisheries Oceanography, 19: 382–396. https://doi.org/10.1111/j.1365-2419.2010.00552.x.
Muhammad, S., Memon, A. A., Muneeb, M., and Ghauri, B. 2016. Seasonal and spatial patterns of SST in the northern Arabian Sea during 2001-2012. Egyptian Journal of Remote Sensing and Space Science, 19: 17–22. Authority for Remote Sensing and Space Sciences. http://dx.doi.org/10.1016/j.ejrs.2015.12.007.
Muhling, B. A., Liu, Y., Lee, S.-K., Lamkin, J. T., Roffer, M. A., Muller-Karger, F., and Walter, J. F. 2015. Potential impact of climate change on the Intra-Americas Sea: Part 2. Implications for atlantic bluefin tuna and skipjack tuna adult and larval habitats. Journal of Marine Systems, 148: 1–13. Elsevier B.V. http://dx.doi.org/10.1016/j.jmarsys.2015.01.010.
Nababan, B., Rosyadi, N., Manurung, D., Natih, N. M., and Hakim, R. 2016. The seasonal variability of sea surface temperature and chlorophyll-a concentration in the south of Makassar Strait. Procedia Environmental Sciences, 33: 583–599. Elsevier B.V.
Nieto, K., and Mélin, F. 2017. Variability of chlorophyll-a concentration in the Gulf of Guinea and its relation to physical oceanographic variables. Progress in Oceanography, 151: 97–115. http://dx.doi.org/10.1016/j.pocean.2016.11.009.
Nontji, A. 2005. Laut Nusantara. Djambatan, Jakarta. 372 pp.
Novianto, D., Osawa, T., and Nuarsa, I. W. 2018. Study of albacore tuna (*Thunnus alalunga*) abundance using Regional Ocean Modeling System (ROMS) data in Indian Ocean. International Journal of Environment and Geosciences, 2(2): 76-88.
Nurani, T. W., Wahyuningrum, P. I., Wisudo, S. H., Arhatin, R. E., and Gigentika, S. 2016. The dynamics of fishing season and tuna fishing in the Indian Ocean waters (FMA 573). International Journal of Development Research, 6: 8288–8294.

Nurdin, S., Mustapha, M. A., Lihan, T., and Zainuddin, M. 2017. Applicability of remote sensing oceanographic data in the detection of potential fi shing grounds of *Rastrelliger kanagurta* in the archipelagic waters of Spermonde , Indonesia. Fisheries Research, 196: 1–12. Elsevier. http://dx.doi.org/10.1016/j.fishres.2017.07.029.

Nybakken, J. W. 1992. Biologi Laut. Suatu Pendekatan Ekologis. PT Gramedia, Jakarta.

Ottersen, G., Planque, B., Belgrano, A., Post, E., Reid, P. C., and Stenseth, N. C. 2001. Ecological effects of the North Atlantic oscillation. Oecologia, 128: 1–14.

Palacios, D. M., Bograd, S. J., Foley, D. G., and Schwing, F. B. 2006. Oceanographic characteristics of biological hotspots in the North Pacific: A remote sensing perspective. Deep-Sea Research Part II: Topical Studies in Oceanography, 53: 250–269. https://doi.org/10.1016/j.dsr2.2006.03.004.

Paramasivam, C. R., and Venkatramanan, S. 2019. An Introduction to Various Spatial Analysis Techniques. Elsevier Inc. 23–30 pp. http://dx.doi.org/10.1016/B978-0-12-815413-7.00003-1.

Paramitha, A., Utomo, B., dan Desrita, D. 2011. Studi klorofil-a di Kawasan Perairan Belawan Sumatera Utara. Aqua Coast Marine, 2(2): 1-8.

Pauly, D., and Cheung, W. W. L. 2017. Sound physiological knowledge and principles in modeling shrinking of fishes under climate change. Global Change Biology, 24: e15–e26. https://doi.org/10.1111/gcb.13831.

Pecl, G. T., Araújo, M. B., Bell, J. D., Blanchard, J., Bonebrake, T. C., Chen, I., Clark, T. D., Colwell, R. K., Danielsen, F., Evengard, B., Falconi, L., Ferrier, S., Frusher, S., Garcia, R. A., Griffis, R. B., Hobday, A. J., Janion-Scheepers, C., Jarzyna, M. A., Jennings, S., Lenoir, J., Linnetved, H. I., Martin, V. Y., McCormack, P. C., McDonald, J., Mitchell, N. J., Mustonen, T., Pandolfi, J. M., Pettorelli, N., Popova, E., Robinson, S. A., Scheffers, B. R., Shaw, J. D., Sorte, C. J. B., Strugnell, J. M., Sunday, J. M., Tuanmu, M-N., Verges, A., Villanueva, C., Wernberg, T., Wapstra, E., and Williams, S. E. 2017. Biodiversity redistribution under climate change: Impacts on ecosystems and human well-being. Science, 355: 1–9. https://science.sciencemag.org/content/355/6332/eaai9214.

Perry, A. L., Low, P. J., Ellis, J. R., and Reynolds, J. D. 2005. Climate change and distribution shifts in marine fishes. Science, 308: 1912–1915. doi: 10.1126/science.1111322.

Perry, R. I., and Smith, S. J. 1994. Identifying habitat associations of marine fishes using survey data: An application to the northwest Atlantic. Canadian Journal of Fisheries and Aquatic Sciences, 51: 589–602.

Pinsky, M. L., and Fogarty, M. 2012. Lagged social-ecological responses to climate and range shifts in fisheries. Climatic Change, 115: 883–891. https://doi.org/10.1007/s10584-012-0599-x.

Polovina, J. J., and Howell, E. A. 2005. Ecosystem indicators derived from satellite remotely sensed oceanographic data for the North Pacific. ICES Journal of Marine Science, 62: 319–327. https://doi.org/10.1016/j.icesjms.2004.07.031.

Portner, H. O., and Peck, M. A. 2010. Climate change effects on fishes and fisheries : Towards a cause-and-effect understanding. Journal of Fish Biology, 77: 1745–1779. https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1095-8649.2010.02783.x.

Purwandana, A., Cuypers, Y., Bouruet-Aubertot, P., Nagai, T., Hibiya, T., and Atmadipoera, A. S. 2020. Spatial structure of turbulent mixing inferred from historical CTD datasets in the Indonesian seas. Progress in Oceanography, 184: 102312. Elsevier. https://doi.org/10.1016/j.pocean.2020.102312.

Putri, A. R. S., Zainuddin, M., and Putri, R. S. 2018a. Effect of climate change on the distribution of skipjack tuna *Katsuwonus pelamis* catch in the Bone Gulf, Indonesia, during the southeast monsoon. AACL Bioflux, 11: 439–451.

Putri, A. R. S., and Zainuddin, M. 2019. Impact of climate changes on skipjack tuna (*Katsuwonus pelamis*) catch during May-July in the Makassar Strait. IOP Conference Series: Earth and Environmental Science, 253: 012046 1–9.

https://doi.org/10.1088/1755-1315/253/1/012046.
Putri, A. R. S., Zainuddin, M., Musbir, M., Mustapha, M. A., and Hidayat, R. 2019. Effect of oceanographic conditions on skipjack tuna catches from FAD versus free-swimming school fishing in the Makassar Strait. IOP Conference Series: Earth and Environmental Science.
Putri, A. R. S., Zainuddin, M., Musbir, M., Mustapha, M. A., Hidayat, R., and Putri, R. S. 2021a. Impact of increasing sea surface temperature on skipjack tuna habitat in impact of increasing sea surface temperature on skipjack tuna habitat in the Flores Sea , Indonesia. IOP Conf. Series: Earth and Environmental Science, 763: 1–8.
Putri, A. R. S., Zainuddin, M., Mustapha, M. A., and Hidayat, R. 2021b. Mapping potential fishing zones for skipjack tuna in the southern Makassar Strait , Indonesia , using Pelagic Habitat Index (PHI). Biodiversitas, 22: 3037–3045. https://smujo.id/biodiv/article/view/8837.
Putri, R. S., Jaya, I., Pujiyati, S., Priatna, A., Makmun, A., and Suman, A. 2018b. Acoustic approach for estimation of Skipjack (*Katsuwonus pelamis*) abundance in Bone Bay. IOP Conference Series: Earth and Environmental Science, 176.
Raven, J., Caldeira, K., Elderfield, H., Hoegh-Guldberg, O., Liss, P., Riebesell, U., Shepherd, J., Turley, C., and Watson, A. 2005. Ocean acidification due to increasing atmospheric carbon dioxide. *In* Science Policy Section, pp. 1–68. The Royal Society. https://royalsociety.org/~/media/royal_society_content/policy/publications/2005/9634.pdf.
Regos, A., Arenas-Castro, S., Tapia, L., Domínguez, J., and Honrado, J. P. 2021. Using remotely sensed indicators of primary productivity to improve prioritization of conservation areas for top predators. Ecological Indicators, 125:107503.
Saitoh, S. I., Mugo, R., Radiarta, I. N., Asaga, S., Takahashi, F., Hirawake, T., Ishikawa, Y., Awaji, T., In, T., and Shima, S. 2011. Some operational uses of satellite remote sensing and marine GIS for sustainable fisheries and aquaculture. ICES Journal of Marine Science, 68: 687–695. https://doi.org/10.1093/icesjms/fsq190.
Saji, N. H., Goswami, P. N., Vinayachandran, P. N., and Yamagata, T. 1999. Dipole mode in the tropical Indian Ocean. Nature, 401: 360–363. http://www.nature.com/doifinder/10.1038/43854%0Apapers3://publication/doi/10.1038/43854.
Sampels, S. 2014. Journal of fisheries & towards a more sustainable production of fish as an important protein source for human nutrition. Journal of Fisheries & Livestock Production, 2(2):1000119, 1-2.
Sartimbul, A., Nakata, H., Rohadi, E., Yusuf, B., and Kadarisman, H. P. 2010. Variations in chlorophyll-a concentration and the impact on *Sardinella lemuru* catches in Bali Strait, Indonesia. Progress in Oceanography, 87: 168–174. Elsevier Ltd. http://dx.doi.org/10.1016/j.pocean.2010.09.002.
Schaefer, K. M. 1987. Reproductive biology of black skipjack, *Euthynnus lineatus*, an eastern Pacific tuna. Inter-American Tropical Tuna Commission Bulletin, 19: 166–260. http://aquaticcommons.org/3537/.
Schaefer, K. M., and Fuller, D. W. 2019. Spatiotemporal variability in the reproductive dynamics of skipjack tuna (*Katsuwonus pelamis*) in the eastern Pacific Ocean. Fisheries Research, 209: 1–13. Elsevier. https://doi.org/10.1016/j.fishres.2018.09.002.
Setiawan, R. Y., and Kawamura, H. 2011. Summertime phytoplankton bloom in the South Sulawesi sea. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 4: 241–244.
Sigman, D. M., and Hain, M. P. 2012. The biological productivity of the ocean. Nature Education, 3: 1–16. https://www.researchgate.net/publication/267325133_The_Biological_Productivity_of_the_Ocean.
Silva, C., Andrade, I., Yáñez, E., Hormazabal, S., Barbieri, M. Á., Aranis, A., and Böhm,

G. 2016. Predicting habitat suitability and geographic distribution of anchovy (*Engraulis ringens*) due to climate change in the coastal areas off Chile. Progress in Oceanography, 146: 159–174. Elsevier Ltd. http://dx.doi.org/10.1016/j.pocean.2016.06.006.

Sprintall, J. 2019. Indonesian throughflow. Elsevier Ltd. 77–82 pp. http://dx.doi.org/10.1016/B978-0-12-813081-0.00602-9.

Sukresno, B., Hartoko, A., and Sulistyo, B. 2015. Empirical Cumulative Distribution Function (ECDF) analysis of *Thunnus* sp. using ARGO float sub-surface multilayer temperature data in Indian Ocean south of Java. Procedia Environmental Sciences, 23: 358–367. Elsevier B.V. http://dx.doi.org/10.1016/j.proenv.2015.01.052.

Susanto, R. D., and Gordon, A. L. 2005. Velocity and transport of the Makassar Strait throughflow. Journal of Geophysical Research: Oceans, 110: 1–10.

Susanto, R. D., II, T. S. M., and Marra, J. 2006. Ocean color variability in the Indonesian Seas during the SeaWiFS era. Geochemistry, Geophysics, Geosystems, 7: 1–16. https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2005GC001009.

Sweijd, N. A., and Smit, A. J. 2020. Trends in sea surface temperature and chlorophyll-a in the seven African Large Marine Ecosystems. Environmental Development, 36: 100585. Elsevier B.V. https://doi.org/10.1016/j.envdev.2020.100585.

Syahdan, M., Atmadipoera, A. S., Budi, S., and Jonson, L. 2014. Variability of surface chlorophyll-a in the Makassar Strait–Java Sea , Indonesia. International Journal of Sciences: Basic and Applied Research (IJSBAR), 103–116: 103–116. http://gssrr.org/index.php?journal=JournalOfBasicAndApplied.

Syamsuddin, M., Saitoh, S.-I., Hirawake, T., Syamsudin, F., and Zainuddin, M. 2016. Interannual variation of bigeye tuna (*Thunnus obesus*) hotspots in the eastern Indian Ocean off Java. International Journal of Remote Sensing, 37: 2087–2100. https://doi.org/10.1080/01431161.2015.1136451.

Tacon, A. G. J., and Metian, M. 2013. Fish matters : Importance of aquatic foods in human nutrition and global food supply. Reviews in Fisheries Science, 21: 22–38.

Tanner, S. E., Vieira, A. R., Vasconcelos, R. P., Dores, S., Azevedo, M., Cabral, H. N., and Morrongiello, J. R. 2019. Regional climate, primary productivity and fish biomass drive growth variation and population resilience in a small pelagic fish. Ecological Indicators, 103: 530–541. Elsevier. https://doi.org/10.1016/j.ecolind.2019.04.056.

Tian, C., Yue, X., Zhou, H., Lei, Y., Ma, Y., and Cao, Y. 2021. Projections of changes in ecosystem productivity under 1.5 °C and 2 °C global warming. Global and Planetary Change, 205: 103588. Elsevier B.V. https://doi.org/10.1016/j.gloplacha.2021.103588.

Trenkel, V. M., Huse, G., MacKenzie, B. R., Alvarez, P., Arrizabalaga, H., Castonguay, M., Goñi, N., Gregoire, F., Hatun, H., Jansen, T., Jacobsen, J. A., Lehodey, P., Lutcavage, M., Mariani, P., Melvin, G. D., Neilson, J. D., Nottestad, L., Oskarsson, G. J., Payne, M. R., Richardson, D. E., Senina, I., and Speirs, D. C. 2014. Comparative ecology of widely distributed pelagic fish species in the North Atlantic: Implications for modelling climate and fisheries impacts. Progress in Oceanography, 129: 219–243. Elsevier Ltd. http://dx.doi.org/10.1016/j.pocean.2014.04.030.

Triyatmo, B., Rustadi, Djumanto, Priyono, S. B., Krismono, Sehenda, N., dan Kartamihardja, E. S. 1997. Kajian morfometri berdasarkan kondisi topografi dan estimasi potensi perikanan Waduk Sermo. Jurnal Perikanan UGM, III(2): 27-35.

Vanderwal, J., Murphy, H. T., Kutt, A. S., Perkins, G. C., Bateman, B. L., Perry, J. J., and Reside, A. E. 2013. Focus on poleward shifts in species' distribution underestimates the fingerprint of climate change. Nature Climate Change, 3: 239–243. Nature Publishing Group. http://dx.doi.org/10.1038/nclimate1688.

Venegas, R., Oliver, T., Brainard, R. E., Santos, M., Geronimo, R., and Widlansky, M. 2019. Climate-induced vulnerability of fisheries in the Coral Triangle: Skipjack tuna thermal spawning habitats. Fisheries Oceanography, 28: 117–130.

https://doi.org/10.1111/fog.12390.
Wang, B., Li, M., Fan, W., Yu, Y., and Chen, J. M. 2018a. Relationship between net primary productivity and forest stand age under different site conditions and its implications for regional carbon cycle study. Forests, 9(1): 1-27.
Wang, J., Chen, X., Staples, K. W., and Chen, Y. 2018b. The skipjack tuna fishery in the west-central Pacific Ocean: applying neural networks to detect habitat preferences. Fisheries Science, 84: 309–321. Springer Japan. https://doi.org/10.1007/s12562-017-1161-6.
Wang, L., and Wu, C. 2013. Contrasting the flow patterns in the equatorial Pacific between two types of el niño. Atmosphere-Ocean, 51: 60–74. https://doi.org/10.1080/07055900.2012.744294.
Watson, R. A., Nowara, G. B., Hartmann, K., Green, B. S., Tracey, S. R., and Carter, C. G. 2015. Marine foods sourced from farther as their use of global ocean primary production increases. Nature Communications, 6: 1–6. Nature Publishing Group. https://doi.org/10.1038/ncomms8365.
WCPFC. 2017. Tuna Fishery Yearbook 2016. 153pp. Noumea. https://www.wcpfc.int/doc/wcpfc-tuna-fishery-yearbook-2016.
Wright, P. J., and Trippel, E. A. 2009. Fishery-induced demographic changes in the timing of spawning : consequences for reproductive success. Fish and Fisheries, 10: 283–304. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-2979.2008.00322.x.
Yen, K., Wang, G., and Lu, H. 2017. Evaluating habitat suitability and relative abundance of skipjack (*Katsuwonus pelamis*) in the western and central Pacific during various el niño events. Ocean and Coastal Management, 139: 153–160. Elsevier Ltd. http://dx.doi.org/10.1016/j.ocecoaman.2017.02.011.
Yu, W., and Chen, X. 2018. Ocean warming-induced range-shifting of potential habitat for jumbo flying squid Dosidicus gigas in the Southeast Pacific Ocean off Peru. Fisheries Research, 204: 137–146. Elsevier. https://doi.org/10.1016/j.fishres.2018.02.016.
Yu, W., Guo, A., Zhang, Y., Chen, X., Qian, W., and Li, Y. 2018. Climate-induced habitat suitability variations of chub mackerel Scomber japonicus in the East China Sea. Fisheries Research, 207: 63–73. Elsevier. https://doi.org/10.1016/j.fishres.2018.06.007.
Yu, W., Chen, X., and Zhang, Y. 2019. Seasonal habitat patterns of jumbo flying squid *Dosidicus gigas* off Peruvian waters. Journal of Marine Systems, 194: 41–51. Elsevier. https://doi.org/10.1016/j.jmarsys.2019.02.011.
Yulihastin, E., Febrianti, N., and Trismidianto. 2009. Impacts of el nino and iod on the Indonesian climate. National Institute of Aeronautics and Space (LAPAN), Indonesia: 1–8.
Zainuddin, M. 2011. Skipjack tuna in relation to sea surface temperature and chlorophyll-a concentration of Bone Bay using remotely sensed satellite data. Jurnal Ilmu dan Teknologi Kelautan Tropis, 3: 82–90. https://doi.org/10.29244/jitkt.v3i1.7837.
Zainuddin, M., Nelwan, A., Farhum, S. A., N., Hajar, M. A. I., Kurnia, M., and Sudirman. 2013. Characterizing potential fishing zone of skipjack tuna during the southeast monsoon in the Bone Bay-Flores sea using remotely sensed oceanographic data. International Journal of Geosciences, 04: 259–266.
Zainuddin, M., Farhum, A., Safruddin, S., Selamat, M. B., Sudirman, S., Nurdin, N., Syamsuddin, M., Ridwan, M., and Saitoh, S-I. 2017. Detection of pelagic habitat hotspots for skipjack tuna in the Gulf of Bone-Flores Sea , southwestern Coral Triangle tuna, Indonesia. PLoS ONE, 12: 1–19. https://doi.org/10.1371/journal.pone.0185601.
Zainuddin, M., Amir, M. I., Bone, A., Farhum, S. A., Hidayat, R., Putri, A. R. S., Mallawa, A., Safruddin, and Ridwan, M. 2019a. Mapping distribution patterns of skipjack tuna during January-May in the Makassar Strait. IOP Conference Series: Earth and Environmental Science, 370(2019): 012004.

Zainuddin, M., Safruddin, Farhum, A., Ridwan, M., Putri, A. R. S., and Hidayat, R. 2019b. The effect of oceanographic factors on skipjack tuna FAD VS free school catch in the Bone Bay, Indonesia: An important step toward fishing management. Jurnal Ilmu dan Teknologi Kelautan Tropis, 11: 123–130. https://journal.ipb.ac.id/index.php/jurnalikt/article/view/24775.

Zainuddin, M., Farhum, S. A., Safruddin, S., Hidayat, R., Putri, A. R. S., and Ridwan, M. 2021. Dynamics of thermal fronts distribution in the Flores Sea, Indonesia: An implication for locating potential skipjack tuna fishing ground. IOP Conference Series: Earth and Environmental Science, 763(2021): 012045.

Zhu, K., Chiariello, N. R., Tobeck, T., Fukami, T., and Field, C. B. 2016. Nonlinear, interacting responses to climate limit grassland production under global change. Proceedings of the National Academy of Sciences of the United States of America, 113: 10589–10594.