

DAFTAR PUSTAKA

- Abood, S. A., Lee, J. S. H., Burivalova, Z., Garcia-Ulloa, J., & Koh, L. P. (2015). Relative Contributions of the Logging, Fiber, Oil Palm, and Mining Industries to Forest Loss in Indonesia. *Conservation Letters*, 8(1), 58–67. <https://doi.org/10.1111/conl.12103>
- Afifah, K. H. (2022, Februari 13). *Eksistensi Kawasan Ekosistem Esensial : Menopang Strategi Konservasi Keanekaragaman Hayati*. <https://Forestation.Fkt.Ugm.Ac.Id/2022/02/13/Eksistensi-Kawasan-Ekosistem-Esensial-Menopang-Strategi-Konservasi-Keanekaragaman-Hayati/>.
- Ancrenaz, M., Gumal, M., Marshall, A. J., Meijaard, E., Wich, S. A., & Husson, S. (2016). Pongo pygmaeus, Bornean Orangutan. *The IUCN Red List of Threatened Species*, e.T17975A7(December), 1–22. <https://doi.org/10.2305/IUCN.UK.2016-1.RLTS.T17975A17966347.en>
- Andrianto, A., Sedik, B. F., Waridjo, H., Komarudin, H., & Obidzinski, K. (2014). The impacts of oil palm plantations on forests and people in Papua: a case study from Boven Digoel District. *CIFOR Working Paper*, 163, 24-pp.
- Arroyo-Rodriguez, V., & Mandujano, S. (2009). Conceptualization and Measurement of Habitat Fragmentation from the Primates' Perspective. *International Journal of Primatology*, 30, 497–514.
- Austin, K. G., Schwantes, A., Gu, Y., & Kasibhatla, P. S. (2019). What causes deforestation in Indonesia? *Environmental Research Letters*, 14(2). <https://doi.org/10.1088/1748-9326/aaf6db>
- Block, W. M., & Brennan, L. A. (1993). *The habitat concept in ornithology: Theory and applications*. Plenum Press.
- Breiman, L. (2001). Random Forests. *Machine Learning*, 45, 5–32. <https://doi.org/10.1201/9780367816377-11>
- Broich, M., Hansen, M., Stolle, F., Potapov, P., Margono, B. A., & Adusei, B. (2011). Remotely sensed forest cover loss shows high spatial and temporal variation across Sumatera and Kalimantan, Indonesia 2000-2008. *Environmental Research Letters*, 6(1). <https://doi.org/10.1088/1748-9326/6/1/014010>
- Brotons, L., Thuiller, W., Araújo, M. B., & Hirzel, A. H. (2004). Presence-absence versus presence-only modelling methods for predicting bird habitat

- suitability. *Ecography*, 27(4), 437–448. <https://doi.org/10.1111/j.0906-7590.2004.03764.x>
- Cushman, S. A., Macdonald, E. A., Landguth, E. L., Malhi, Y., & Macdonald, D. W. (2017). Multiple-scale prediction of forest loss risk across Borneo. Dalam *Landscape Ecology* (Vol. 32, Issue 8, hlm. 1581–1598). <https://doi.org/10.1007/s10980-017-0520-0>
- Davies, A. B., Ancrenaz, M., Oram, F., & Asner, G. P. (2017). Canopy structure drives orangutan habitat selection in disturbed Bornean forests. *Proceedings of the National Academy of Sciences of the United States of America*, 114(31), 8307–8312. <https://doi.org/10.1073/pnas.1706780114>
- Djojosedharmo, S., & van Schaik, C. P. (1992). Why are orangutans so rare in the highlands? Altitudinal changes in a Sumatran forest. *Tropical Biodiversity*, 1(1), 11–22.
- Dormann, C. F. (2011). Modelling species' distribution. Dalam F. Jopp, H. Reuter, & B. Breckling (Ed.), *Modelling Complex Ecological Dynamics* (hlm. 179–196). Springer Verlag. <https://doi.org/10.1007/978-3-642-05029-9>
- Elith, J., Phillips, S. J., Hastie, T., Dudik, M., Chee, Y. E., & Yates, C. J. (2011). A statistical explanation of MaxEnt for ecologists. *Diversity and Distributions*, 17(1), 43–57.
- Fahrig, L. (2003). Effects of Habitat Fragmentation on Biodiversity. *Annual Review of Ecology, Evolution, and Systematics*, 34(1), 487–515. <https://doi.org/10.1146/annurev.ecolsys.34.011802.132419>
- Fick, S. E., & Hijmans, R. J. (2017). WorldClim 2: new 1-km spatial resolution climate surfaces for global land areas. *International Journal of Climatology*, 37(12), 4302–4315. <https://doi.org/10.1002/joc.5086>
- Fuller, D. O., Hardiono, M., & Meijaard, E. (2011). Deforestation projections for carbon-rich peat swamp forests of Central Kalimantan, Indonesia. *Environmental Management*, 48(3), 436–447. <https://doi.org/10.1007/s00267-011-9643-2>
- Fuller, D. O., Jessup, T. C., & Salim, A. (2004). Loss of Forest Cover in Kalimantan, Indonesia, Since the 1997-1998 El Niño. *Conservation Biology*, 18(1), 249–254. <https://doi.org/10.1111/j.1523-1739.2004.00018.x>
- Gaveau, D. L. A., Locatelli, B., Salim, M. A., Husnayaen, Manurung, T., Descals, A., Angelsen, A., Meijaard, E., & Sheil, D. (2022). Slowing deforestation in Indonesia follows declining oil palm expansion and lower oil prices. *PLoS ONE*, 17(3 March), 1–19. <https://doi.org/10.1371/journal.pone.0266178>

- Gaveau, D. L. A., Locatelli, B., Salim, M. A., Yaen, H., Pacheco, P., & Sheil, D. (2018). Rise and fall of forest loss and industrial plantations in Borneo (2000–2017). *Conservation Letters*, November 2018, 1–8. <https://doi.org/10.1111/conl.12622>
- Gaveau, D. L. A., Sheil, D., Husnayaen, Salim, M. A., Arjasakusuma, S., Ancrenaz, M., Pacheco, P., & Meijaard, E. (2016). Rapid conversions and avoided deforestation: Examining four decades of industrial plantation expansion in Borneo. *Scientific Reports*, 6(September), 1–13. <https://doi.org/10.1038/srep32017>
- Gaveau, D. L. A., Sloan, S., Molidena, E., Yaen, H., Sheil, D., Abram, N. K., Ancrenaz, M., Nasi, R., Quinones, M., Wielaard, N., & Meijaard, E. (2014). Four decades of forest persistence, clearance and logging on Borneo. *PLoS ONE*, 9(7). <https://doi.org/10.1371/journal.pone.0101654>
- Gaveau, D. L. A., Wich, S., Epting, J., Juhn, D., Kanninen, M., & Leader-Williams, N. (2009). The future of forests and orangutans (*Pongo abelii*) in Sumatra: Predicting impacts of oil palm plantations, road construction, and mechanisms for reducing carbon emissions from deforestation. *Environmental Research Letters*, 4(3). <https://doi.org/10.1088/1748-9326/4/3/034013>
- Geist, H. J., & Lambin, E. F. (2002). Proximate Causes and Underlying Driving Forces of Tropical Deforestation. *BioScience*, 52(2), 143. [https://doi.org/10.1641/0006-3568\(2002\)052\[0143:pcaudf\]2.0.co;2](https://doi.org/10.1641/0006-3568(2002)052[0143:pcaudf]2.0.co;2)
- Goossens, B., Chikhi, L., Jalil, M. F., Ancrenaz, M., Lackman-Ancrenaz, I., Mohamed, M., Andau, P., & Bruford, M. W. (2005). Patterns of genetic diversity and migration in increasingly fragmented and declining orang-utan (*Pongo pygmaeus*) populations from Sabah, Malaysia. *Molecular Ecology*, 14(2), 441–456. <https://doi.org/10.1111/j.1365-294X.2004.02421.x>
- Gorelick, N., Hancher, M., Dixon, M., Ilyushchenko, S., Thau, D., & Moore, R. (2017). Google Earth Engine: Planetary-scale geospatial analysis for everyone. *Remote Sensing of Environment*, 202(2016), 18–27. <https://doi.org/10.1016/j.rse.2017.06.031>
- Gregory, S. D., Brook, B. W., Goossens, B., Ancrenaz, M., Alfred, R., Ambu, L. N., & Fordham, D. A. (2012). Long-Term Field Data and Climate-Habitat Models Show That Orangutan Persistence Depends on Effective Forest Management and Greenhouse Gas Mitigation. *PLoS ONE*, 7(9), 1–10. <https://doi.org/10.1371/journal.pone.0043846>

- Grinand, C., Rakotomalala, F., Gond, V., Vaudry, R., Bernoux, M., & Vieilledent, G. (2013). Estimating deforestation in tropical humid and dry forests in Madagascar from 2000 to 2010 using multi-date Landsat satellite images and the random forests classifier. *Remote Sensing of Environment*, 139, 68–80. <https://doi.org/10.1016/j.rse.2013.07.008>
- Guisan, A., Tingley, R., Baumgartner, J. B., Naujokaitis-Lewis, I., Sutcliffe, P. R., Tulloch, A. I. T., Regan, T. J., Brotons, L., Mcdonald-Madden, E., Mantyka-Pringle, C., Martin, T. G., Rhodes, J. R., Maggini, R., Setterfield, S. A., Elith, J., Schwartz, M. W., Wintle, B. A., Broennimann, O., Austin, M., ... Buckley, Y. M. (2013). Predicting species distributions for conservation decisions. *Ecology Letters*, 16(12), 1424–1435. <https://doi.org/10.1111/ele.12189>
- Hadian, O., Fahmi, K., Pratama, M. P., & Sucipto, D. (2019). *Project Methodology and Results Report: An approach for mapping and assessment of The Katingan Corridor Landscape for orangutan conservation*.
- Hall, L. S., Krausman, P. R., & Morisson, M. L. (1997). The habitat concept and a plea for standard terminology. *Wildl. Soc. Bull.*, 25, 173–182.
- Hansen, M. C., Potapov, P. v, Moore, R., Hancher, M., Turubanova, S. A., Thau, D., Stehman, S. v, Goetz, S. J., Loveland, T. R., Kommareddy, A., Chini, L., Justice, C. O., & Townshend, J. R. G. (2013). High-Resolution Global Maps of 21st-century Forest Cover Change. *Science*, 342(6160), 850–853.
- Hardus, M. E., Lameira, A. R., Menken, S. B. J., & Wich, S. A. (2012). Effects of logging on orangutan behavior. *Biological Conservation*, 146(1), 177–187. <https://doi.org/10.1016/j.biocon.2011.12.014>
- Hijmans, R. J. (2021). *raster: Geographic Data Analysis and Modeling* (R package version 3.4-13). <https://cran.r-project.org/package=raster>
- Husson, S. J., Wich, S. A., Marshall, A. J., Dennis, R. D., Ancrenaz, M., Brassey, R., Gumal, M., Hearn, A. J., Meijaard, E., Simorangkir, T., & Singleton, I. (2009). Orangutan distribution, density, abundance and impacts of disturbance. Dalam S. A. Wich, S. S. U. Atmoko, T. Mitra Setia, & C. P. van Schaik (Ed.), *Orangutans: Geographic Variation in Behavioral Ecology and Conservation* (hlm. 77–96). Oxford University Press Inc. <https://doi.org/10.1093/acprof:oso/9780199213276.003.0006>
- IPCC. (2003). *Climate Change 2001: Synthesis Report. A Contribution of Working Groups I, II, and III to the Third Assessment Report* (Vol. 40, Issue 08). <https://doi.org/10.5860/choice.40-4660>

- Johnson, D. H. (1980). The Comparison of Usage and Availability Measurements for Evaluating Resource Preference. *Ecology*, 61(1), 65–71.
<https://doi.org/10.2307/1937156>
- Kelompok Kerja Pengelolaan KEE Bentang Alam Wehea-Kalay. (2016). *Koridor Orangutan Bentang Alam Wehea-Kalay di Kabupaten Kutai Timur dan Kabupaten Berau Kalimantan Timur*.
- KLHK. (2018). *Data Dan Informasi Pemetaan Tematik Kehutanan Indonesia*.
- Laumonier, Y. (1997). The Vegetation and Physiography of Sumatra. Dalam *The Vegetation and Physiography of Sumatra*. <https://doi.org/10.1007/978-94-009-0031-8>
- Liaw, A., & Wiener, M. (2020). Classification and Regression by randomForest. *R News*, 2(3), 18–22. <https://cran.r-project.org/doc/Rnews/>
- Litvaitis, J. A., Titus, K., & Anderson, E. M. (1994). Measuring vertebrate use of territorial habitats and foods. Dalam *Research and Management Techniques for Wildlife and Habitats* (5 ed., hlm. 254–274). The Wildlife Society.
- MacArthur, R. H., & Wilson, E. O. (1967). *The Theory of Island Biogeography*. Princeton University Press.
- Manduell, K. L., Morrogh-Bernard, H. C., & Thorpe, S. K. S. (2011). Locomotor behavior of wild orangutans (*Pongo pygmaeus wurmbii*) in disturbed peat swamp forest, Sabangau, Central Kalimantan, Indonesia. *American Journal of Physical Anthropology*, 145(3), 348–359.
<https://doi.org/10.1002/ajpa.21495>
- Margono, B. A., Potapov, P. v., Turubanova, S., Stolle, F., & Hansen, M. C. (2014). Primary forest cover loss in indonesia over 2000-2012. *Nature Climate Change*, 4(8), 730–735. <https://doi.org/10.1038/nclimate2277>
- Mcgarigal, K. (2015). Fragstats. *Fragstats, April*, 1–182.
[https://doi.org/10.1016/S0022-3913\(12\)00047-9](https://doi.org/10.1016/S0022-3913(12)00047-9)
- Meididit, A., Mulyana, T. M., Yordan, K., Ardha, M. I., Randi, A., Abraham, Rantawan, & Ariadi, A. (2018). *Survey orangutan (Pongo pygmaeus wurmbii) dan keanekaragaman hayati lainnya di Kawasan Koridor TN Sebangau – TN Bukit Baka Bukit Raya Kalimantan Tengah*.
- Meijaard, E., Wich, S., Ancrenaz, M., & Marshall, A. J. (2012). Not by science alone: Why orangutan conservationists must think outside the box. *Annals of the New York Academy of Sciences*, 1249(1), 29–44.
<https://doi.org/10.1111/j.1749-6632.2011.06288.x>

- Merow, C., Smith, M. J., & Silander, J. A. (2013). A practical guide to MaxEnt for modeling species' distributions: What it does, and why inputs and settings matter. *Ecography*, 36(10), 1058–1069.
<https://doi.org/10.1111/j.1600-0587.2013.07872.x>
- Mertens, B., & Lambin, E. F. (2000). Land-cover-change trajectories in Southern Cameroon. *Annals of the Association of American Geographers*, 90(3), 467–494. <https://doi.org/10.1111/0004-5608.00205>
- Montgomery, R. A., & Roloff, G. J. (2013). *Habitat Selection* (S. A. B. T.-E. of B. (Second E. Levin, Ed.; hlm. 59–69). Academic Press.
<https://doi.org/https://doi.org/10.1016/B978-0-12-384719-5.00384-1>
- Montgomery, R. A., & Roloff, G. J. (2017). *Habitat Selection*. Elsevier.
<https://doi.org/https://doi.org/10.1016/B978-0-12-809633-8.02383-9>
- Morrogh-Bernard, H. C., Husson, S. J., Harsanto, F. A., & Chivers, D. J. (2014). Fine-scale habitat use by orang-utans in a disturbed peat swamp forest, central Kalimantan, and implications for conservation management. *Folia Primatologica*, 85(3), 135–153. <https://doi.org/10.1159/000358251>
- Morrogh-Bernard, H., Husson, S., Page, S. E., & Rieley, J. O. (2003). Population status of the Bornean orang-utan (*Pongo pygmaeus*) in the Sebangau peat swamp forest, Central Kalimantan, Indonesia. *Biological Conservation*, 110(1), 141–152. [https://doi.org/10.1016/S0006-3207\(02\)00186-6](https://doi.org/10.1016/S0006-3207(02)00186-6)
- Orians, G. H. (2013). *Aesthetic Factors* (S. A. B. T.-E. of B. (Second E. Levin, Ed.; hlm. 37–44). Academic Press.
<https://doi.org/https://doi.org/10.1016/B978-0-12-384719-5.00003-4>
- Pekel, J., Vancutsem, C., Bastin, L., Clerici, M., Vanbogaert, E., Bartholomé, E., & Defourny, P. (2014). Remote Sensing of Environment A near real-time water surface detection method based on HSV transformation of MODIS multi-spectral time series data. *Remote Sensing of Environment*, 140, 704–716. <https://doi.org/10.1016/j.rse.2013.10.008>
- Phillips, S. J., & Dudík, M. (2015). Modeling of species distributions with Maxent: new extensions and a comprehensive evaluation. *Ecography*, 31(December 2007), 161–175. <https://doi.org/10.1111/j.2007.0906-7590.05203.x>
- Poor, E. E., Shao, Y., & Kelly, M. J. (2019). Mapping and predicting forest loss in a Sumatran tiger landscape from 2002 to 2050. *Journal of Environmental Management*, 231(March 2018), 397–404.
<https://doi.org/10.1016/j.jenvman.2018.10.065>

- Primack, R. B. (2004). *A Primer of Conservation Biology: Third edition* (3 ed.). Sinauer Associates Inc.
- Pujiono, E., Sadono, R., Hartono, & Imron, M. A. (2019). Assessment of causes and future deforestation in the mountainous tropical forest of Timor Island, Indonesia. *Journal of Mountain Science*, 16(10), 2215–2231.
<https://doi.org/10.1007/s11629-019-5480-1>
- R Core Team. (2013). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing.
- Rao, M., & van Schaik, C. P. (1997). The behavioral ecology of Sumatran orangutans in logged and unlogged forest. *Tropical Biodiversity*, 4(2), 173–185.
- Rijksen, H. D., & Meijaard, E. (1999). *Our vanishing relative: The status of wild orang-utans at the close of the twentieth century*. Kluwer Academic Publisher.
- RStudio Team. (2020). *RStudio: Integrated Development Environment for R*. RStudio, PBC.
- Seaman, D. J. I., Bernard, H., Ancrenaz, M., Coomes, D., Swinfield, T., Milodowski, D. T., Humle, T., & Struebig, M. J. (2019). Densities of Bornean orang-utans (*Pongo pygmaeus morio*) in heavily degraded forest and oil palm plantations in Sabah, Borneo. *American Journal of Primatology*, 81(8), 1–12. <https://doi.org/10.1002/ajp.23030>
- Singleton, I., Wich, S., Husson, S., Stephens, S., Utami Atmoko, S., Leighton, M., Rosen, N., Traylor-Holzer, K., Lacy, R., & Byers, O. (2004). *Orangutan PHVA Final Report Population and Habitat Viability Assessment: Final Report*. www.cbsg.org.
- Sullivan, W. (2017). *Machine Learning Beginners Guide Algorithms: Supervised & Unsupervised Learning, Decision Tree & Random Forest Intorduction*.
- Sumarto, S., & Koneri, R. (2016). *Ekologi Hewan* (G. Hadiprayitno, Ed.). Patra Media Grafindo.
- US National Research Council. (2014). *Advancing Land Change Modeling: Opportunities and Research Requirements*. The National Academies Press.
<https://doi.org/10.17226/18385>
- USGS. (2000). *Shuttle Radar Topographic Mission* (1 Arc Second). Global Land Cover Facility, University of Maryland.

- Utami-Atmoko, S. S., Traylor-Holzer, K., Rifqi, M. A., Siregar, P. G., Achmad, B., Priadjati, A., Husson, S. J., Wich, S. A., Hadisiswoyo, P., Saputra, F., Campbell-Smith, G., Kuncoro, P., Russon, A. E., Voigt, M., Santika, T., Nowak, M. G., Singleton, I., Sapari, I., Meididit, A., ... Lees, C. M. (2017). *Orangutan Population and Habitat Viability Assessment: Final Report*.
- Vancutsem, C., Achard, F., Vieilledent, G., Carboni, S., Simonetti, D., Marelli, A., & Gallego, J. (2020). *Long-term monitoring of tropical moist forest extent (from 1990 to 2019)*. <https://doi.org/10.2760/70243>
- Veldkamp, A., & Lambin, E. F. (2001). Editorial: Predicting land-use change. *Agriculture, Ecosystems and Environment*, 85(1–3), 1–6. [https://doi.org/10.1016/S0167-8809\(01\)00199-2](https://doi.org/10.1016/S0167-8809(01)00199-2)
- Vieilledent, G. (2021). forestatrisk: a Python package for modelling and forecasting deforestation in the tropics. *Journal of Open Source Software*, 6(59), 2975. <https://doi.org/10.21105/joss.02975>
- Vieilledent, G., Grinand, C., & Vaudry, R. (2013). Forecasting deforestation and carbon emissions in tropical developing countries facing demographic expansion: A case study in Madagascar. *Ecology and Evolution*, 3(6), 1702–1716. <https://doi.org/10.1002/ece3.550>
- Voigt, C., Hernandez-Aguilar, K., Garcia, C., & Gutierrez, S. (2019). Predictive modeling of future forest cover change patterns in southern Belize. *Remote Sensing*, 11(7). <https://doi.org/10.3390/rs11070823>
- Wartmann, F. M., Purves, R. S., & van Schaik, C. P. (2010). Modelling ranging behaviour of female orang-utans: A case study in Tuanan, Central Kalimantan, Indonesia. *Primates*, 51(2), 119–130. <https://doi.org/10.1007/s10329-009-0186-6>
- Wegmann, M., Leutner, B., & Dech, S. (2016). *Remote Sensing and GIS for Ecologists: Using Open Source Software*. Pelagic Publishing.
- Wich, S. A., Gaveau, D., Abram, N., Ancrenaz, M., Baccini, A., Brend, S., Curran, L., Delgado, R. A., Erman, A., Fredriksson, G. M., Goossens, B., Husson, S. J., Lackman, I., Marshall, A. J., Naomi, A., Molidena, E., Nardiyono, Nurcahyo, A., Odom, K., ... Meijaard, E. (2012). Understanding the Impacts of Land-Use Policies on a Threatened Species: Is There a Future for the Bornean Orang-utan? *PLoS ONE*, 7(11), e49142–e49142. <https://doi.org/10.1371/journal.pone.0049142>
- Wich, S. A., Meijaard, E., Marshall, A. J., Husson, S., Ancrenaz, M., Lacy, R. C., van Schaik, C. P., Sugardjito, J., Simorangkir, T., Traylor-Holzer, K., Dougherty, M., Supriatna, J., Dennis, R., Gumal, M., Knott, C. D., &

- Singleton, I. (2008). Distribution and conservation status of the orang-utan (Pongo spp.) on Borneo and Sumatra: How many remain? *Oryx*, 42(3), 329–339. <https://doi.org/10.1017/S003060530800197X>
- Widyastuti, S., Perwitasari-Farajallah, D., Prasetyo, L. B., Iskandar, E., & Setiawan, A. (2020). Maxent modelling of habitat suitability for the endangered javan gibbon (*Hylobates moloch*) in less-protected Dieng Mountains, Central Java. *IOP Conference Series: Earth and Environmental Science*, 457, 012014. <https://doi.org/10.1088/1755-1315/457/1/012014>
- Wilson, H. B., Meijaard, E., Venter, O., Ancrenaz, M., & Possingham, H. P. (2014). Conservation strategies for orangutans: Reintroduction versus habitat preservation and the benefits of sustainably logged forest. *PLoS ONE*, 9(7). <https://doi.org/10.1371/journal.pone.0102174>
- Wulffraat, S., Greenwood, C., Faisal, K. F., & Sucipto, D. (2017). *The Environmental Status of Borneo*. https://d2ouvy59p0dg6k.cloudfront.net/downloads/isi_full_report_hob_2016_rev__12_higres_compressed.pdf%0Ahttp://d2ouvy59p0dg6k.cloudfront.net/downloads/isi_full_report_hob_2016_rev__12_higres_compressed.pdf
- Wulffraat, S., & Morrison, J. (2013). Measuring biological indicators for status assessment of the heart of Borneo. *Environmental Conservation*, 40(3), 277–286. <https://doi.org/10.1017/S0376892913000064>
- Zanella, L., Folkard, A. M., Blackburn, G. A., & Carvaho, L. M. T. (2017). How well does random forest analysis model deforestation and forest fragmentation in the Brazilian Atlantic forest? *Environmental and Ecological Statistics*, 24, 529–549. <https://doi.org/10.1007/s10651-017-0389-8>