



**Literature for MESB02, Earth Systems Science applies from
autumn semester 2023**

Literature established by The Board of the Lund University Centre for
Sustainability Studies on 2023-06-07 to apply from 2023-06-07

See appendix.



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MESB02 LITERATURE LIST

2023-06-07

Dnr STYR 2023/1235

Biogeovetenskap, 7,5 högskolepoäng

Earth Systems Science, 7.5 credits

MESB02 litteraturlista fastställd av LUCSUS styrelse den 7 juni 2023.

Course literature

Armstrong McKay, D. I., Staal, A., Abrams, J. F., Winkelmann, R., Sakschewski, B., Loriani, S., Fetzer, I., Cornell, S. E., Rockström, J., & Lenton, T. M. (2022). Exceeding 1.5°C global warming could trigger multiple climate tipping points. *Science*, 377(6611). [11 pages]

Arneth, A., Olsson, L., Cowie, A., Erb, K.H., Hurlbert, M., Kurz, W.A., Mirzabaev, A. and Rounsevell, M.D., 2021. Restoring degraded lands. *Annual Review of Environment and Resources*, 46, pp. 569-599. [30 pages]

Ban, N. C., Davies, T. E., Aguilera, S. E., Brooks, C., Cox, M., Epstein, G., Evans, L. S., Maxwell, S. M., & Nenadovic, M. (2017, 2017/03/01/). Social and ecological effectiveness of large marine protected areas. *Global Environmental Change*, 43, 82-91. [10 pages]

Bellard, C., Leclerc, C., Leroy, B., Bakkenes, M., Veloz, S., Thuiller, W., & Courchamp, F. (2014). Vulnerability of biodiversity hotspots to global change. *Global Ecology and Biogeography*, 23(12), 1376-1386. [11 pages]

Benítez-López, A., Santini, L., Schipper, A. M., Busana, M., & Huijbregts, M. A. J. (2019). Intact but empty forests? Patterns of hunting-induced mammal defaunation in the tropics [Article]. *PLOS Biology*, 17(5). [18 pages]

Bennett, E. M., W. Cramer, A. Begossi, G. Cundill, S. Díaz, B. N. Egoh, I. R. Geijzendorffer, C. B. Krug, S. Lavorel & E. Lazos (2015) Linking biodiversity, ecosystem services, and human well-being: three challenges

for designing research for sustainability. *Current opinion in environmental sustainability*, 14, 76-85. [9 pages]

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Bond, W. J., Stevens, N., Midgley, G. F., & Lehmann, C. E. (2019). The trouble with trees: afforestation plans for Africa. *Trends in ecology & evolution*, 34(11), 963-965. [2 pages]

Booth, H., Clark, M., Milner-Gulland, E. J., Amponsah-Mensah, K., Antunes, A. P., Brittain, S., Castilho, L. C., Campos-Silva, J. V., Constantino, P. d. A. L., Li, Y., Mandoloma, L., Nneji, L. M., Iponga, D. M., Moyo, B., McNamara, J., Rakotonarivo, O. S., Shi, J., Tagne, C. T. K., van Velden, J., & Williams, D. R. (2021). Investigating the risks of removing wild meat from global food systems. *Current Biology*, 31(8), 1788-1797.e1783. [10 pages]

Breitburg, D., Levin, L. A., Oschlies, A., Grégoire, M., Chavez, F. P., Conley, D. J., ... & Jacinto, G. S. (2018). Declining oxygen in the global ocean and coastal waters. *Science*, 359(6371). [13 pages]

Campbell, B. M., D. J. Beare, E. M. Bennett, J. M. Hall-Spencer, J. S. Ingram, F. Jaramillo, R. Ortiz, N. Ramankutty, J. A. Sayer & D. Shindell (2017) Agriculture production as a major driver of the Earth system exceeding planetary boundaries. *Ecology and Society*, 22. [11 pages]

Coombes, M. A. (2016). Biogeomorphology: diverse, integrative and useful. *Earth Surface Processes and Landforms*, 41(15), 2296-2300. [5 pages]

Dunn, F. E., Darby, S. E., Nicholls, R. J., Cohen, S., Zarfl, C., & Fekete, B. M. (2019). Projections of declining fluvial sediment delivery to major deltas worldwide in response to climate change and anthropogenic stress. *Environmental Research Letters*, 14(8), 084034. [10 pages]

Ellis, E. C. (2019). Sharing the land between nature and people. *Science*, 364(6447), 1226-1228. [3 pages]

Friis, C. (2019). Telecoupling: A New Framework for Researching Land-Use Change in a Globalised World. In *Telecoupling* (pp. 49-67). Palgrave Macmillan, Cham. [18 pages]

Giakoumi, S., McGowan, J., Mills, M., Beger, M., Bustamante, R. H., Charles, A., Christie, P., Fox, M., Garcia-Borboroglu, P., Gelcich, S., Guidetti, P., Mackelworth, P., Maina, J. M., McCook, L., Micheli, F., Morgan, L. E., Mumby, P. J., Reyes, L. M., White, A., Grorud-Colvert, K., & Possingham, H. P. (2018). Revisiting “Success” and “Failure” of Marine

Protected Areas: A Conservation Scientist Perspective [Perspective].
Frontiers in Marine Science, 5(223). [5 pages]

Gordon, L. J., Bignet, V., Crona, B., Henriksson, P. J., Van Holt, T., Jonell, M., ... & Folke, C. (2017). Rewiring food systems to enhance human health and biosphere stewardship. *Environmental Research Letters*, 12(10), 100201. [13 pages]

Keesstra, S. D., J. Bouma, J. Wallinga, P. Tittonell, P. Smith, A. Cerdà, L. Montanarella, J. N. Quinton, Y. Pachepsky & W. H. Van Der Putten (2016). The significance of soils and soil science towards realization of the United Nations Sustainable Development Goals. *Soil*. [18 pages]

Krause, T., & Tilker, A. (2021). How the loss of forest fauna undermines the achievement of the SDGs. *Ambio*. [11 pages]

Konar, M., Evans, T. P., Levy, M., Scott, C. A., Troy, T. J., Vörösmarty, C. J., & Sivapalan, M. (2016). Water resources sustainability in a globalizing world: who uses the water?. *Hydrological Processes*, 30(18), 3330-3336. [6 pages]

Lenton, T. M., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W., & Schellnhuber, H. J. (2019). Climate tipping points—too risky to bet against. [1 page]

Liu, J., Herzberger, A., Kapsar, K., Carlson, A. K., & Connor, T. (2019). What Is Telecoupling?. In *Telecoupling* (pp. 19-48). Palgrave Macmillan, Cham. [29 pages]

Llovel, W., Purkey, S., Meyssignac, B., Blazquez, A., Kolodziejczyk, N., & Bamber, J. (2019). Global ocean freshening, ocean mass increase and global mean sea level rise over 2005–2015. *Scientific reports*, 9(1), 1-10. [10 pages]

Malhi, Y., Lander, T., le Roux, E., Stevens, N., Macias-Fauria, M., Wedding, L., Girardin, C., Kristensen, J. Å., Sandom, C. J., Evans, T. D., Svenning, J.-C., & Canney, S. (2022). The role of large wild animals in climate change mitigation and adaptation. *Current Biology*, 32(4), [16 pages]

Meyfroidt, P., de Bremond, A., Ryan, C. M., Archer, E., Aspinall, R., Chhabra, A., Camara, G., Corbera, E., DeFries, R., Díaz, S., Dong, J., Ellis, E. C., Erb, K.-H., Fisher, J. A., Garrett, R. D., Golubiewski, N. E., Grau, H. R., Grove, J. M., Haberl, H., . . . zu Ermgassen, E. K. H. J. (2022). Ten facts about land systems for sustainability. *Proceedings of the National Academy of Sciences*, 119(7). [12 pages]

Nicholls, R. J., Lincke, D., Hinkel, J., Brown, S., Vafeidis, A. T., Meyssignac, B., Hanson, S.E., Merkers, J.L., & Fang, J. (2021). A global

analysis of subsidence, relative sea-level change and coastal flood exposure. *Nature Climate Change*, 11(4), 338-342. [5 pages]

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Scanlon, B. R., B. L. Ruddell, P. M. Reed, R. I. Hook, C. Zheng, V. C. Tidwell & S. Siebert (2017) The food-energy-water nexus: Transforming science for society. *Water Resources Research*, 53, 3550-3556. [6 pages]

Schumm, S. A., & Lichty, R. W. (1965). Time, space, and causality in geomorphology. *American Journal of Science*, 263(2), 110–119. [10 pages]

Scown, M. W., & K.A. Nicholas. "European Agricultural Policy Requires a Stronger Performance Framework to Achieve the Sustainable Development Goals." *Global Sustainability* 3 (2020). [11 pages]

Scown, M. W. (2020). The sustainable development goals need geoscience. *Nature Geoscience*, 13(11), 714-715. [2 pages]

Smith, C., Baker, J. C. A., & Spracklen, D. V. (2023). Tropical deforestation causes large reductions in observed precipitation. *Nature*, 615(7951), 270-275. [5 pages]

Soto-Navarro, C., Ravilious, C., Arnell, A., de Lamo, X., Harfoot, M., Hill, S. L. L., Wearn, O. R., Santoro, M., Bouvet, A., Mermoz, S., Le Toan, T., Xia, J., Liu, S., Yuan, W., Spawn, S. A., Gibbs, H. K., Ferrier, S., Harwood, T., Alkemade, R., . . . Kapos, V. (2020). Mapping co-benefits for carbon storage and biodiversity to inform conservation policy and action. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 375(1794). [13 pages]

Steffen, W., J. Rockström, K. Richardson, T. M. Lenton, C. Folke, D. Liverman, C. P. Summerhayes, A. D. Barnosky, S. E. Cornell & M. Crucifix (2018) Trajectories of the Earth System in the Anthropocene. *Proceedings of the National Academy of Sciences*, 115, 8252-8259. [7 pages]

Syvitski, J. P., Kettner, A. J., Overeem, I., Hutton, E. W., Hannon, M. T., Brakenridge, G. R., J. Day, C. Vörösmarty, Y. Saito, L. Giosan, & Nicholls, R. J. (2009). Sinking deltas due to human activities. *Nature Geoscience*, 2(10), 681-686. [6 pages]

Trew, B. T., & Maclean, I. M. D. (2021). Vulnerability of global biodiversity hotspots to climate change. *Global Ecology and Biogeography*, 30(4), 768-783. [15 pages]

Tóth, G., T. Hermann, M. R. da Silva & L. Montanarella (2018) Monitoring soil for sustainable development and land degradation neutrality. *Environmental monitoring and assessment*, 190, 57. [4 pages]

Turner, David. 2018. *The Green Marble: Earth System Science and Global Sustainability*. Columbia University Press. 328 pages. ISBN-13: 978-0231180610. [Course book: 328 pages]

Vogel, R. M., U. Lall, X. Cai, B. Rajagopalan, P. K. Weiskel, R. P. Hooper & N. C. Matalas (2015) Hydrology: The interdisciplinary science of water. *Water Resources Research*, 51, 4409-4430. [21 pages]

Zarfl, C., & Dunn, F. E. (2022). The delicate balance of river sediments. *Science*, 376(6600), 1385-1386. (2 pages)

Total number of pages

750 pages.

Reason for fewer number of references: This is the first course of the LUMES programme, and this course contains learning activities and take-home exams that demand extensive literature consultation, reading and evaluation, further increasing the amount of literature students will read. The students should select and read another 350 pages, which they can choose based on their individual assignment topic.

Author gender balance

16/41 = 38% female first-authors (in yellow).

Suggested complimentary readings (Social Science Library):

- Ouriginal (n.d.). Plagiarism Handbook – a guide for both teachers and students. Available: <https://www.ouriginal.com/plagiarism-handbook/>
- <https://www.awelu.lu.se/academic-integrity/plagiarism/>

For Kimberly Nicholas's lecture (September 20)

- Top 5 climate superpowers: <https://wecanfixit.substack.com/p/your-top-5-climate-superpowers>
- System change is a circle <https://wecanfixit.substack.com/p/circlenotwaterfall>