



Literature for MESB02, Earth Systems Science applies from the autumn semester 2025

**Literature established by The Board of the Lund University Centre for
Sustainability Studies on 2025-06-04 to apply from 2025-06-04**

See appendix.



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Sustainability Studies

Biogeovetenskap, 7,5 högskolepoäng

Earth Systems Science, 7.5 credits

MESB02 litteraturlista fastställd av LUCSUS styrelse den 4 juni 2025.

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. & 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). Social and ecological effectiveness of large marine protected areas. *Global Environmental Change*, 43, 82-91. [10 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]

Boakes, E. H., Dalin, C., Etard, A., & Newbold, T. (2024). Impacts of the global food system on terrestrial biodiversity from land use and climate change. *Nature Communications*, 15(1), 5750. [16 pages]

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]

Breitbart, 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]

Cooke, R., Sayol, F., Andermann, T., Blackburn, T. M., Steinbauer, M. J., Antonelli, A., & Faurby, S. (2023). Undiscovered bird extinctions obscure the true magnitude of human-driven extinction waves. *Nature Communications*, 14(1), 8116. [14 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]

Flores, B. M., Montoya, E., Sakschewski, B., Nascimento, N., Staal, A., Betts, R. A., Levis, C., Lapola, D. M., Esquivel-Muelbert, A., Jakovac, C., Nobre, C. A., Oliveira, R. S., Borma, L. S., Nian, D., Boers, N., Hecht, S. B., ter Steege, H., Arieira, J., Lucas, I. L., . . . Hirota, M. (2024). Critical transitions in the Amazon forest system. *Nature*, 626(7999), 555-564. [10 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]

Johnston, A., Rodewald, A. D., Strimas-Mackey, M., Auer, T., Hochachka, W. M., Stillman, A. N., Davis, C. L., Ruiz-Gutierrez, V., Dokter, A. M., Miller, E. T., Robinson, O., Ligocki, S., Jaromczyk, L. O., Crowley, C., Wood, C. L., & Fink, D. (2025). North American bird declines are greatest where species are most abundant. *Science*, 388(6746), 532-537. [6 pages]

Keck, F., Peller, T., Alther, R., Barouillet, C., Blackman, R., Capo, E., Chonova, T., Couton, M., Fehlinger, L., Kirschner, D., Knüsel, M., Muneret, L., Oester, R., Tapolczai, K., Zhang, H., & Altermatt, F. (2025). The global human impact on biodiversity. *Nature*. [20 pages]

Keesstra, S. D., Bouma, J., Wallinga, J., Tittonell, P., Smith, P., Cerdà, A., Montanarella, L., Quinton, J. N., Pachepsky, Y. & Van Der Putten, W. H. (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]

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]

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., Merkens, 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]

Pironon, S., Ondo, I., Diazgranados, M., Allkin, R., Baquero, A. C., Cámara-Leret, R., Canteiro, C., Dennehy-Carr, Z., Govaerts, R., Hargreaves, S., Hudson, A. J., Lemmens, R., Milliken, W., Nesbitt, M., Patmore, K., Schmelzer, G., Turner, R. M., van Andel, T. R., Ulian, T., . . .

Willis, K. J. (2024). The global distribution of plants used by humans. *Science*, 383(6680), 293-297. [5 pages]

Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., Drüke, M., Fetzer, I., Bala, G., von Bloh, W., Feulner, G., Fiedler, S., Gerten, D., Gleeson, T., Hofmann, M., Huiskamp, W., Kummu, M., Mohan, C., Nogués-Bravo, D., . . . Rockström, J. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, 9(37). [16 pages]

Rockström, J., Gupta, J., Qin, D., Lade, S. J., Abrams, J. F., Andersen, L. S., Armstrong McKay, D. I., Bai, X., Bala, G., Bunn, S. E., Ciobanu, D., DeClerck, F., Ebi, K., Gifford, L., Gordon, C., Hasan, S., Kanie, N., Lenton, T. M., Loriani, S., . . . Zhang, X. (2023). Safe and just Earth system boundaries. *Nature*, 619(7968), 102-111. [10 pages]

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. (2020). European Agricultural Policy Requires a Stronger Performance Framework to Achieve the Sustainable Development Goals. *Global Sustainability* 3. [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]

Soga, M., & Gaston, K. J. (2018). Shifting baseline syndrome: causes, consequences, and implications. *Frontiers in Ecology and the Environment*, 16(4), 222-230. [9 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]

Tóth, G., Hermann, T., da Silva, M. R. & Montanarella, L. (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]

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

Zhu, R., Zhang, Z., Zhang, N., Zhong, H., Zhou, F., Zhang, X., Liu, C., Huang, Y., Yuan, Y., Wang, Y., Li, C., Shi, H., Rillig, M. C., Dang, F., Ren, H., Zhang, Y., & Xing, B. (2025). A global estimate of multiecosystem photosynthesis losses under microplastic pollution. *Proceedings of the National Academy of Sciences*, 122(11), e2423957122. [9 pages]

Zurui A., et al. (2024). A national-scale assessment of land subsidence in China's major cities. *Science* 384, 301-306. (6 pages)

Total number of pages

742 pages. (proposed changes = (-75) + 67)

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

11/40 = 27,5% 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/>