

Ecosystem services provided by wetlands: Anthropogenic impacts and Environmental chemistry
Lectures / Case Studies

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TIME TABLE 2019

	9:00	10:30	10:45	12:00	14:00	15:30	15:45-17:30
Monday, 03	Welcome/ Wetlands classification, importance and function as ecotones (A.I. Lillebø)	Coffee break	Ecosystem services concept and classification methods (A.I. Lillebø)	Lunch break	Processes supporting ecosystem services/ Case studies (A.I. Lillebø)	Coffee break	Anthropogenic impacts on wetlands/ Case studies (A.I. Lillebø)
Tuesday, 04	ES assessment endpoints for Ecological Risk Assessment (A.I. Lillebø)	Coffee break	Application of the DPSIR framework for environmental assessment combined with ES and ERA/ Introduction to the practical exercise (A.I. Lillebø)	Lunch break	Legal protection of wetlands/ Case studies (Ricardo Lopes)	Coffee break	Wetlands restoration; suitable habitats for water birds/Case studies (Ricardo Lopes)
Wednesday, 05	Case studies (A.I.lillebø)	Coffee break	Short introduction to Baixo Vouga Lagunar case study/ Threats and Management (P Maia)	Lunch break	Visit to Baixo Vouga Lagunar		
Thursday, 06	Coastal wetlands Multiple stressors / Case studies (A.I. Sousa)	Coffee break	Coastal wetlands Threats to ES Risk assessment /Case studies (A.I. Sousa)	Lunch break	Role play exercise on ES assessment endpoints for Ecological Risk Assessment (ERA) using Baixo Vouga Lagunar case study (A.I.lillebø)	Coffee break	Bibliography research for the theoretical exercise/ Preparation of presentations
Friday, 07	Wetlands, amphibians: Services Threats /Case studies (Isabel Lopes)	Coffee break	Wetlands, amphibians: Risk assessment /Case studies (Isabel Lopes)	Lunch break	Wetlands, insects: Services Threats Risk assessment /Case studies (Olga Ameixa)	Coffee break	Presentations and discussion of the theoretical exercise

Book references

- Naiman R.J. and Décamps (editors) Ecology and management of aquatic-terrestrial ecotones. Man and Biosphere Series, vol 4. Series editor J.NR. Jeffers. Published by UNESCO, Paris, France and The Parthenon Publishing Group, Lancs, UK and New Jersey, USA.
- Odum, E.P. 1988 Princípios e conceitos relativos aos ciclos biogeoquímicos. In: Fundamentos de Ecologia, 4ª Edição, Fundação Calouste Gulbenkian, Lisboa. Chapter 4, pp. 133-162.
- Wetzel, R.G. 1993. Limnologia. 2ª Edição, Fundação Calouste Gulbenkian, Lisboa.
- The Ramsar Convention Manual: a Guide to the Convention on Wetlands (Ramsar, Iran, 1971), 4th ed. Gland, Switzerland: Ramsar Convention Secretariat, 2006.
- Segner, E., 2007. Ecotoxicology – How to assess the impact of toxicants in a Multi-Factorial Environment? In: Mothersill, C.; Mosse, I.; Seymour, C. (Eds.) Multiple Stressors: A Challenge for the Future 484pp.
- D. W. Sparling, Greg Linder, Christine A. Bishop, Sherry Krest. 2010. Ecotoxicology of Amphibians and Reptiles. CRC Press, 944 pages.
- Florence Landsberg, Jo Treweek, M. Mercedes Stickler, Norbert Henninger, Orlando Venn (2013) WEAVING ECOSYSTEM SERVICES INTO IMPACT ASSESSMENT: A Step-By-Step Method | Version 1.0 ISBN 978-1-56973-811-5

Book chapters

- Ameixa, O.M.C.C; Soares, A.M.V.M., Soares, A.O., Lillebø, A (2018). Ecosystem services provided by the little things that run the world In: Selected Studies in Biodiversity. Bulent Sen [Ed]. InTech ISBN 978-953-51-5442-6.

Reports (links)

- Millennium Ecosystem Assessment, 2005. Ecosystems and human well-being: wetlands and water Synthesis. World Resources Institute, Washington, DC. 68p. URL: <http://www.millenniumassessment.org/documents/document.358.aspx.pdf>
- MEA (2003), Ecosystems and Human Well-being: A Framework for Assessment, Millennium Ecosystem Assessment Series, Washington, DC (Island Press). URL: http://pdf.wri.org/ecosystems_human_wellbeing.pdf
- Haines-Young RH, Potschin MB (2018) Common International Classification of Ecosystem Services (CICES) V5.1 and Guidance on the Application of the Revised Structure. Fabis Consulting Ltd [In English]. URL: <https://cices.eu/content/uploads/sites/8/2018/01/Guidance-V51-01012018.pdf>
- McVittie A., Hussain S. S. (2013) The Economics of Ecosystems and Biodiversity - Valuation Database Manual. 26pp. URL: http://img.teebweb.org/wp-content/uploads/2014/03/TEEB-Database-and-Valuation-Manual_2013.pdf
- Maes J., Teller A., Erhard M., Murphy P., Paracchini M.L., Barredo J.I., Grizzetti B., Cardoso A., Somma F., Petersen J.E., Meiner A., Gelabert E.R., Zal N., Kristensen P., Bastrup-Birk A., Biala K., Romao C., Piroddi C., Egoh B., Fiorina C., Santos F., Narusevicius V., Verboven J., Pereira H., Bengtsson J., Kremena G., Marta-Pedroso C., Snäll T., Estreguil C., Miguel J.S., Braat L., Grêt-Regamey A., Perez-Soba M., Degeorges P., Beaufaron G., Lillebø A., Malak D.A., Liqueste C., Condé S., Moen J., Östergård H., Czúcz B., Drakou E.G., Zulian G., Lavallo C. (2014). Mapping and Assessment of Ecosystem and their Services. Indicators for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020. Publications office of the European Union, Luxembourg. ISBN 978-92-79-36161-6. Doi: 10.2779/75203. URL: http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/MAESWorkingPaper2013.pdf

Papers

Será disponibilizada a lista de todos os artigos científicos considerados

Documentary

<https://www.youtube.com/watch?v=gvYj6MM5qtM>

https://www.ted.com/talks/pavan_sukhdev_what_s_the_price_of_nature/transcript?language=en#t-964617

Web pages

<http://www.ramsar.org/>

<http://epaedia.eea.europa.eu/>

<http://portal.icn.pt/>

<http://ian.umces.edu/imagelibrary/>

<http://water.epa.gov/type/wetlands/>

<http://www.millenniumassessment.org/en/index.html>

<http://www.unwater.org/watercooperation2013.html>

<http://www.iucnredlist.org/initiatives/amphibians>

http://www.pacificbio.org/initiatives/ESIN/News/global_amphibian_assessment.htm

<https://amphibiaweb.org/>

<http://biodiversity.europa.eu/maes>

<https://www.ipbes.net/>

<https://www.eea.europa.eu/soer-2015/europe/natural-capital-and-ecosystem-services>

<https://aquacross.eu>