GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Terrestrial Ecology (C003223)

Course size *(nominal values; actual values may depend on programme)*

Credits 3.0 **Study time 90 h**

Course offerings and teaching methods in academic year 2025-2026

A (semester 2)	Dutch	Gent	lecture

Lecturers in academic year 2025-2026

Jacobs, Sander	WE11	lecturer-in-charge

Offered in the following programmes in 2025-2026	**crdts**	**offering**
Bachelor of Science in Biology	3	A
Master of Science in Teaching in Science and Technology(main subject Biology)	3	A

Teaching languages

Dutch

Keywords

Human and Political Ecology I: Introduction
Ecosystem services, synergies and trade-offs, plural values, stakeholders, stakeholder analysis, environmental conflicts, inter- and intra-generational sustainability, environmental justice, procedural justice, policy, instruments, institutions, science-policy interface, privileges, dicrimination, legitimacy, reflexivity

Position of the course

Deepening of human and political aspects of ecology and the linked societal challenges:
Scientific: ecology needs reflective research regarding its positioning and societal impact, to more effectively conduct research in real life complex projects, and complement fundamental research with an applied branch. *=> Goal: biologists join critical research on interactions between political, economic and social systems and ecosystems.*
Professional: Biologists are consulted and engaged in debates on use of open space, ecosystem services, socivial, economic and political costs and benefits of nature restoration or use of natural resources, and therefore interact with different sectors, and scientists from different disciplines. *=> Goal: Biologists are capable of working together with experts from different disciplines and non-academic knowledge, to support decision making on open space/nature, and deliver the relevant ecological knowledge in these processes.*
Societal: open space is becoming scarce, local stakeholders exert pressure and power on decisions, and the role of the scientist/science is heavily politicized. *=> Goal: biologists are aware of applied and trans-disciplinary aspects of sustainability science.*

Contents

Ca. 7 live sessions : central theme:
“make a master plan voor problem case X”

- Introduction en start-up
  - Practical aspects
  - Introduction case and ‘serious game’
  - allocation groups and roles
  - Internal organisation in groups

- Ecosysteem services, synergies and trade-offs, plural valuation
  - Ecosysteem services per stakeholdergroep
  - Observers process en group dynamiek
  - Strategisc work in groups
  - Plenary exchange
  - seminar ecosysteem services, synergies and trade-offs, plural valuation
- Identify stakes, detect conflicts
  - Valuation of ecosystem services
  - Detect conflicts and synergies between groups
  - Detect strategic alliances
- Policy, management and intruments,
  - Construction of master plan
  - Prioritizing actions: spatial, finacial, temporal
  - Policy-oriented presentation
- Science-policy structures
  - Presentations per groep
  - seminar: spatial planning, institutional aspects, science-policy,..
- Power and capacity, intersectionality
  - Presentation by observers
  - seminar privilege, intersectionality, reflexivity.
  - Plenary discussion and draft communication plan
- evaluation, reflection, discussion
  - check glossary and clarifications
  - Reflection and debate based on initial expectations
  - Group discussion on societal role of ecology/ecologists

Initial competences

This course provides a complementary deepening to certain learning outcomes from the courses Biodiversity of invertebrates, Biodiversity of plants, Ecology, Arthropoda, Biodiversity of vertebrates, Biogeography, Population ecology.

Final competences

1 Basic insights in human and political ecology: what are ecosystem services, synergies and tradeoffs, what are types of values of nature, what is valuation.
2 Gain insight in science-policy interactions: what is policy, what is management, what are instruments, what are formal and informal institutions, what is the role of the scientist/science in these.
3 Development of an own vision on privilege and how this influences scientific results and (nature) policy, insight in procedural and justice aspects, assessment of legitimacy of policy-oriented scientific research.
4 Critically assess scientific papers on sustainability science.
5 Apply insights from theory and experiences to formulate relevant socio-ecological research and policy questions.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Group work, Seminar, Lecture, Independent work, Peer teaching

Study material

Type: Other

Name: no material required
Indicative price: Free or paid by faculty
Optional: no

References

- Anguelovski, I. et al. Expanding the Boundaries of Justice in Urban Greening Scholarship: Toward an Emancipatory, Antisubordination, Intersectional, and Relational Approach. Annals of the American Association of Geographers110:6, 1743-1769 (2020)
- Amorim-Maia, A.T., Anguelovski, I., Chu, Eric & Conolly, J. Intersectional climate justice: conceptual pathway for bridging adaptation planning, transformative

action, and social equity. Urban Climate41, 101053 (2022).
- Aragao, A., Jacobs, S., & Cliquet, A. What's law got to do with it? Why environmental justice is essential to ecosystem service valuation. Ecosystem Services, 22, 221-227 (2016).
- Balvanera, P. et al. Key features for more successful place-based sustainability research on socio-ecological systems: a Programme on Ecosystem Change and Society (PECS) perspective. Ecology and Society 22 (2017).
- Patricia Balvanera, Rafael Calderón-Contreras, Antonio J. Castro, María R. Felipe-Lucia, Ilse R. Geijzendorffer, Sander Jacobs, Berta Martín-López, Ugo Arbieu, Chinwe Ifejika Speranza, Bruno Locatelli, Natalia Pérez Harguindeguy, Ilse Ruiz Mercado, Marja, L. G. Interconnected place-based social–ecological research can inform global sustainability. Current Opinion in Environmental Sustainability29, 1–7 (2017).
- Fortnam, M. et al. The Gendered Nature of Ecosystem Services. Ecological Economics159, 312-325 (2019).
- Harrison, P. A. et al. Selecting methods for ecosystem service assessment: A decision tree approach. Ecosystem Services 29, 481–498 (2018).
- Heras, M. & Tàbara, J.D. Let's play transformations! Performative methods for sustainability. Sustain Sci 9, 379–398 (2014)
- Jacobs, S. et al. The means determine the end–Pursuing integrated valuation in practice. Ecosystem Services 29, 515-528 (2018)
- Jacobs, S. Ecosystem Services: Global Issues, Local Practices. (Elsevier, 2014).
- Jacobs, S. et al. A new valuation school: Integrating diverse values of nature in resource and land use decisions. Ecosystem Services (2016) doi:10.1016/j.ecoser.2016.11.007.
- Kabisch, N. & Haase, D. Green justice or just green? Provision of urban green spaces in Berlin, Germany. Landscape and Urban Planning122, 129-139 (2014)
- Kronenberg, J. et al. The thorny path toward greening: unintended consequences, trade-offs, ad constraints in green and blue infrastructure planning, implementation, and management. Ecology and Society26:2 (2021).
- Maes, J. & Jacobs, S. Nature-Based Solutions for Europe's Sustainable Development. Conservation Letters 10, 121-124 (2015).
- Pereira, L., Sitas, N., Ravera, F., Jimenez Aceituno, A. & Merrie A. Building capacities for transformative change towards sustainability: Imagination in Intergovernmental Science-Policy Scenario Processes. Elementa 7, 35 (2019).
- van Oudenhoven, A. P. E. et al. Key criteria for developing ecosystem service indicators to inform decision making. Ecological Indicators95, 417–426 (2018).
- Zafra-Calvo, N. et al. Plural valuation of nature for equity and sustainability: Insights from the Global South. Global Environmental Change 63, 102-115 (2020)

Course content-related study coaching

Questions concerning the course can be answered during the lecture (interactive teaching), after the lecture, via e-mail, or by appointment. All slides of the presentations are available on Ufora. Scientific articles used as examples in the course are also available on Ufora.

Assessment moments

continuous assessment

Examination methods in case of periodic assessment during the first examination period

Examination methods in case of periodic assessment during the second examination period

Examination methods in case of permanent assessment

Presentation, Peer and/or self assessment

Possibilities of retake in case of permanent assessment

not applicable

Extra information on the examination methods

End result of group work and presentation, participation and peer-evaluation

Calculation of the examination mark

End result (20/20)