SESSION DESCRIPTION

ID: T2b

Advancing ecosystem condition assessment: novel methods and integrated approaches

Hosts:

	Name	Organisation	E-mail
Host (s):	Fernando Santos-Martín	Universidad Rey Juan Carlos	fernando.santos@urjc.es
Co-host(s):	Philip Roche	INRAE	philip.roche@inrae.fr
	Balint Czucz	NINA	balint.czucz@nina.no

Abstract:
Ecosystem condition refers to the overall quality of an ecosystem, described by its biotic, abiotic and landscape characteristics and the interactions between them, reflecting its capacity to provide ecosystem services. Methods and metrics for quantifying ecosystem condition can also contribute to operationalising the related concepts of ecosystem integrity, ecosystem health, and ecological resilience, central to current policy discourses. Recent technological advances in remote sensing, data analytics, and process-based modelling can now enable more accurate, scalable, and integrative measurements of ecosystem state and function.

This session will focus on innovative methodologies and emerging approaches for assessing ecosystem condition across biophysical, socio-economic, and governance dimensions. We seek contributions presenting novel indicators, remote sensing techniques, analytical models, and integrative frameworks that operate across multiple spatial and temporal scales. By presenting cutting-edge methodologies and case studies, the session aims to showcase how these approaches can enhance our understanding of ecosystem condition and strengthen the link to management strategies and policy implementation.

Goals and objectives of the session:
- Present and critically evaluate innovative methodologies and tools for ecosystem condition assessment.
- Facilitate exchange of experiences and perspectives from research, policy, and practice.
- Examine the integration of new approaches into decision-making and policy development.
- Identify methodological challenges, data requirements and priorities for advancing ecosystem condition science.

Planned output / Deliverables:
- Documented case studies and best practices applying new approaches in diverse contexts.
- Synthesis of methodological strengths, limitations, and applicability criteria
- Establishment of a collaborative network to facilitate on-going methodological development and knowledge sharing beyond the conference.
- Identification of research gaps and priorities for future methodological development.

Session format:
The session will be structured to combine short presentations, panel discussion, and interactive exchange to maximize both knowledge sharing and dialogue among participants.

Introduction (10 minutes)
Brief welcome by the coordinators, outlining the aims, structure, and expected outputs of the session.

Part I – Innovative Methodologies and Case Studies (90 minutes)

- 6–8 short presentations (10–12 minutes each, including Q&A).
- Each contribution will highlight methodological advances, data sources, analytical models, or case applications related to ecosystem condition assessment.
- Break (10 minutes)

Part II – Panel Discussion and Interactive Exchange (50 minutes)

- Panel discussion with presenters and invited experts, guided by key questions on methodological challenges, integration into policy, and data requirements.
- Audience engagement encouraged through moderated Q&A and interactive tools (e.g., polling or open floor interventions).

Part III – Synthesis and Next Steps (20 minutes)

- Coordinators present a synthesis of main insights from the session.
- Identification of best practices, methodological gaps, and opportunities for collaboration.

Total: 180 minutes (3 hours)

Voluntary contributions accepted:

Yes, I allow any abstract to be submitted to my session for review

Related to ESP Working Group:

TWG 2 – Biodiversity & Ecosystem services