**sDiv working group meeting report**

***sSCAT Working Group Meeting II: Fit-for-Purpose Models and Frameworks for Conservation Systems*22-25 April 2024, iDiv, Leipzig**

**Overview and Key Themes**

The sSCAT working group is developing fit-for-purpose conceptual and modelling frameworks to support decision-making in area-based conservation. By identifying and quantitatively describing recurring social-ecological patterns (archetypes), the group aims to improve generalized and policy- and management-relevant understanding of key interactions that shape social-ecological outcomes in conservation systems.

The first sSCAT working group meeting established a foundation for identifying archetypes of feedback dynamics in protected and conserved areas. The meeting brought together a diverse group of researchers and pracedemics to systematically categorise conservation systems based on their feedbacks, discuss common threats and governance structures, and explore how these archetypes could inform fit-for-purpose models for conservation decision-making.

A major goal was to apply the Coupled Infrastructure Systems (CIS) framework to synthesise knowledge across diverse conservation areas, allowing for more generalisable approaches to understanding social-ecological interactions in conservation. The meeting also laid the groundwork for a structured approach to case study coding, ensuring that archetypes were both conceptually sound and empirically grounded.

**Key Discussion Topics**

* Case Study Presentations & Comparative Analysis: Participants presented case studies of conservation areas, highlighting governance structures, challenges, and management approaches. Discussions focused on identifying key feedbacks and system dynamics.
* Developing Conservation Archetypes: To group worked to develop an approach for identifying archetypes based on shared feedback structures. A major discussion focused on how systemic issues, such as resource use conflicts and infrastructure impacts, manifest across different conservation areas.
* Applying the CIS Framework to Conservation: Participants examined how the CIS framework could be adapted for use in protected and conserved areas, testing whether it could capture key ecological and governance feedbacks across diverse case studies.
* Coding Conservation Archetypes: The group discussed how to systematically code conservation case studies, focusing on key variables such as resource users, public infrastructure providers, and governance structures. A coding system was established to ensure comparability across cases.
* Roadmap for Future Work: The meeting concluded with a discussion on how to refine and test archetypes, establish consistent methodologies for coding case studies, and outline the first research outputs from the working group.

**Structure of the Meeting**

The meeting combined presentations, structured discussions, hands-on group work, and remote participation. The first two days focused on case study presentations, comparative discussion, and identifying key conservation feedbacks, with breakout sessions to discuss governance mismatches and feedback structures. The third day was dedicated to applying the CIS framework to draft archetypes, testing its applicability across different conservation systems. The final day focused on empirical approaches for measuring feedbacks, refining case study coding approaches, and setting next steps for synthesis and publication.

A parallel virtual track allowed remote participants to engage in structured online discussions and provide input into case study analysis and feedback identification.

**Key Next Steps**

Advancing Archetype Development & Empirical Analysis

* Refining Conservation Archetypes: The group will work to collect more structured, coded case study to advance the identification of feedback archetypes. These case studies draws largely on the deep expertise in our group in conservation systems across five continents.
* Advancing modelling of archetypes: The next phase will advancing social-ecological models that captures key dmensions and dynamics of archetypal feedbacks.

**Planned Research Outputs**

* A conceptual paper on conservation archetypes, identifying recurring feedback dynamics across different protected and conserved areas.
* A methodological paper on case study coding, outlining how the CIS framework can be applied to systematically analyse conservation feedbacks.
* An empirical synthesis paper, comparing case study data to validate and refine identified archetypes of conservation feedbacks.

**Future Engagements & Meetings**

* A follow-up in-person meeting with a sub-group of participants to refine the case study coding approach in Montreal (associated with the PECS-III conference) in August.
* The second sSCAT working group meeting, where the group will transition from archetype identification to modelling.

**Working Atmosphere & Meeting Format**

The meeting fostered a highly interactive and collaborative environment, combining structured discussions, hands-on coding work, and informal networking. The hybrid format allowed for virtual engagement, although we did have some challenges in including remote discussants in small-group discussions.

The sDiv logistical and technical support was excellent, facilitating smooth coordination, well-equipped meeting spaces, and effective hybrid engagement.

This meeting marked a critical first step in developing a systematic and generalisable approach to modelling social-ecological systems, setting the stage for further refinement, empirical validation, and application in conservation research and policy.