**sDiv working group meeting report**

***sSCAT Working Group Meeting II: Fit-for-Purpose Models and Frameworks for Conservation Systems
07-10 October 2024, iDiv, Leipzig***

**Overview and Focus**

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.

Building on the first meeting’s focus on identifying feedback archetypes, the second sSCAT working group meeting centred on advancing model development for these archetypes. The in-person component of this meeting comprised, as planned, a smaller sub-set of our team focused on this goal, whilst the remainder of the team worked virtually in parallel to advance the case study work initiated in the first meeting.

Key Discussion Topics

* Modelling Archetypes of Social-Ecological Feedbacks: Participants worked on a framework for capturing key feedback dynamics related to human-wildlife interactions, governance responses, and ecological consequences. The Coupled Infrastructure Framework was used as a guiding structure to advance a modelling framework. We focused much of our discussion on one common feedback archetype in conservation systems - human-wildlife conflict. Discussions explored model structure, key variables, and potential data sources for representing these feedbacks.
* Advancing Case Study Work: The group revisited archetypes and case study selection from the first meeting, ensuring they aligned with emerging modelling efforts. This parallel stream worked to capture additional case studies that exemplify common feedbacks in conservation systems and to identify gaps in this dataset.
* We also established a roadmap for publications to focus our efforts in the next year.

**Content of Presentations**

The meeting had minimal formal presentations, with the majority of time dedicated to model development and discussions. The meeting opened with a presentation outlining objectives and introducing core concepts of social-ecological feedbacks, proposing different ways to model them. This was followed by two short presentations proposing further modelling approaches. These presentations primarily served to guide discussions on developing an appropriate modelling approach, a key focus of this meeting.

**Structure of the Meeting**

The meeting was structured to balance focused discussions, hands-on modelling work, and breakout sessions, with hybrid engagement ensuring broader participation. In-person participants concentrated on developing and refining a modelling approach, while remote participants engaged through structured online discussions and one-on-one meetings, with some also joining virtually for modelling discussions. The parallel virtual track focused largely on case studies of feedbacks in conservation systems. The final day brought together insights from both modelling and case study tracks to define next steps. Participants also engaged in informal discussions and networking throughout the meeting.

**Key Outcomes and Next Steps**

Most immediately, and ahead of our third sDiv meeting, our group will be focused on:

1. Refining & Expanding Models: The human-wildlife conflict model will be further refined, with expansion to other feedback archetypes. This work includes integrating relevant datasets to validate model outcomes and enhance cross-case comparisons.
2. Advancing Case Study Analysis: Additional work will focus on documenting and analysing case studies to better integrate empirical data into modelling efforts.

The group is developing multiple research outputs over the next two years, including:

* Establishing archetypes of feedback dynamics using CIS framing and quantitative analysis.
* Refining modelling workflows to enhance the understanding of conservation feedbacks.
* Synthesising case studies and resilience theory to identify general system dynamics.
* Using archetypes to compare data, exploring knowledge gaps, similarities, and data needs across conservation contexts.

In the next year, our group is planning an online meeting, a smaller in-person meeting for a sub-group of participants attending the ICCB conference in Australia, and our third sSCAT working group meeting in Leipzig, which will again engage a larger number of participants.

**Working Atmosphere & Meeting Format**

The meeting fostered a highly interactive and collaborative environment, balancing structured modelling work, discussions, and informal engagement. We are grateful for all the support received from the sDiv team in setting up a hybrid system, which allowed remote participants to contribute, although some challenges remain in fully integrating virtual discussions into hands-on modelling work.

The sDiv logistical and technical support was excellent, facilitating smooth coordination, well-equipped meeting spaces, and effective hybrid engagement. Informal discussions, such as those during shared meals and social events, further enhanced collaboration. We also greatly appreciated the opportunity to engage with iDiv researchers during the meeting.

This meeting marked significant progress in developing fit-for-purpose models for conservation feedback dynamics, setting the stage for continued refinement, empirical validation, and broader application in conservation research and policy.