

Building Resources for Complex, Action-Oriented Team Science

Effective team science is key to finding solutions to socio-environmental problems. Many tools have been developed for integrating ideas, data, and methods across the diverse disciplines involved when researching complex problems. Similarly, practices have been identified that facilitate the linkage of research results with informed policy decisions. Relatively few of these tools and practices have been assessed and optimized for addressing socio-environmental challenges. This Theme aims to analyze, evaluate, and synthesize the practices, tools, methods, and strategies of transdisciplinary team science to significantly improve research teams' effectiveness at understanding socio-environmental problems and informing socio-environmental decisions.

Progress on socio-environmental problems requires the integration of a vast range of information types, typically by teams of experts and stakeholders with diverse perspectives and disciplinary knowledge. Success in this type of research requires that teams effectively employ a suite of practices to address several challenges, including:

- the epistemological and methodological differences among experts,
- the development of shared research objectives,
- the framing of known and unknown elements of the problem,
- understanding the needs of those whose decisions are to be informed by the research outcomes, and
- the production of actionable knowledge.

Access to interdisciplinary practices such as these is limited because descriptions of them and of their use are widely scattered across the peer-reviewed and grey literatures and often not in socio-environmental contexts. Further, although an array of practices are available, there is little understanding or agreement on which practices to employ in different situations. For example, a small team of experts from similar disciplines has different requirements than a large diverse team of researchers and stakeholders with widely diverse perspectives and methods, and the best practices for each will differ. Similarly, problems that are ill-defined, complex, and riddled with conflicting perspectives require different approaches from those that are contained and uncontested.

The aim of the synthesis teams (Pursuits) established under this Theme is to aggregate and synthesize the tools, methods, and other practices used in action-oriented team research as applicable to socio-environmental science. They address issues across all stages throughout the lifecycle of an interdisciplinary project from problem formulation to approach design, data gathering analysis and synthesis, publication and other dissemination, implementation, and assessment. [Regular updates are posted on the work of the Pursuits](#), [1] and [blogs from the Pursuits can be read and commented on](#). [2]

[The Theme is also establishing a global community to contribute to the work of the Pursuits and the Theme activities. Join us!](#) [1]

[Information on projects funded under this Theme can be found here](#). [3]

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[1] <http://i2s.anu.edu.au/global-community-and-sesync-project>

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