

# Toward a Macroecology of Sustainability: Patterns, Processes, & Principles of Socio-environmental Systems

**Award Year:**

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**Principal Investigator:**

Bill Burnside, SESYNC

Sustainability research has usually taken a local, case-study focus, such as on a specific fishery, or otherwise assessed one or two attributes across multiple sites, such as how fish habitat varies with house density in a given region. Less is known about general trends or tendencies, in part reflecting the relative youth of sustainability science.

This project involves synthesizing insights and data from the social and natural sciences to inform a more holistic understanding of the factors behind relative sustainability.

This project will synthesize ideas and models from a range of disciplines to search for convergent themes. For example, ecologists, economists, anthropologists, and geographers have separately studied how diversity, as in species, stocks, or crops, affect the productivity and risk of a given “portfolio,” suggesting general insights broadly applicable to socio-environmental systems (SEs). This project will also search for ideas within a field but with potentially broader relevance for understanding sustainability, such as insights about decision making from behavioral economics.

Dr. Burnside will also assemble a database with a range of ecological and socioeconomic variables and sustainability metrics for a number of systems, from working biosphere reserves to cities, and test predictions based on the ideas from my earlier investigation. The goal of the resulting database and insights is to help inform the wise development and management of the coupled human and natural systems in which we all have a vital stake.

**Associated SESYNC Researcher(s):**

[bburnside](#) [1]

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