

Socioecology of Acacia

Award Year:

2014

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Associated Program:

[Call for Research Proposals: Biodiversity & Ecosystem Services](#) [1]

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Humans move and propagate species, benefit or suffer from their impacts, judge these outcomes, and make management and policy decisions in response. In turn, some introduced species invade landscapes, with socioeconomic and ecosystem impacts, often leading to socio- environmental regime shifts. Managing such regime shifts triggered by human-induced biotic changes can be very challenging for at least three reasons. Many introduced species threaten biodiversity and ecosystem services (e.g., water provision), but can be of great importance for local livelihoods and poverty alleviation (e.g., woodfuel); therefore, trade-offs and synergies between biodiversity conservation and provision of ecosystem services to local livelihoods must be identified and managed. Furthermore, people facilitate the spread of introduced species through land use changes that are often a result of socio-environmental changes induced by the spreading species; such socio-environmental feedbacks must be understood to increase ecosystem resilience and develop management scenarios. Lastly, these depend on anticipating ecosystem change, which is often very difficult. Learning from experiences gained in other places confronted with similar invasions can facilitate proactive governance. We use “acacia invasions”—i.e., situations where trees of the genus *Acacia* (Fabaceae) have spread significantly in landscapes—in Europe, South Africa, Madagascar, and Australia (native range) as a model system to develop tools that facilitate such cross-site learning. We put a particular emphasis on identifying trade-offs and synergies between biodiversity conservation and provision of ecosystem services, and understanding human-environment feedbacks through the integration of social and ecological factors. Ultimately, we aim to develop management scenarios and policy principles for decision-makers.

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