



International Conference on Ecological Sciences



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SYMPOSIA – Sfecologie 2018, International conference on Ecological Sciences

Title of symposium

Resilience in Long-Term Social-Ecological Systems Research Sites

Main organizer of the symposium

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Session description

The concept of resilience covers the capacity of a system to absorb disturbance, the system being ecological or sociological. However, the concept of resilience in relation to social-ecological systems is also about the opportunities that disturbance opens up in terms of renewal or recombination of the system and emergence of new trajectories. In this sense, resilience incorporates the idea of adaptive capacity of the system, mainly through self-organizing processes, to deal with change, i.e. adaptive resilience. From a governance perspective, resilience implies a shift from policies that aspire to control change in systems assumed to be stable, to managing the capacity of social-ecological systems to cope with and adapt to change, i.e. adaptive governance. The purpose of this symposium is to question and debate how a resilience perspective may enhance the understanding of complex behavior of coupled social-ecological systems and may improve the emergence of new modes of governance. This issue will be addressed within the explicit context of long-term socio-ecological research sites (LTSER), both at national (Réseau des Zones Ateliers) and international (ILTER) levels.

This symposium will be organised around four 20 minutes' talks and a 30 minutes' discussion on the symposium topic. Sabrina Gaba and Camille Mazé will introduce the "resilience concept" from an ecological and a sociological perspective (10 minutes max). Christo Fabricius (George Univ, South Africa) has been invited to facilitate the discussions in addition to the two main organizers of the symposium. This symposium will be an opportunity to discover how socio-ecological research and resilience are framed within long-term socio-ecological research sites networks.

Speakers

Talk 1. MAZE Camille & GABA Sabrina, CNRS, CEBC
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"Resilience of SES : The French LTSER Zone Atelier initiatives"

This talk will present the French Long Term Socio-Ecological Research network, its conceptual framework and the different initiatives to investigate resilience in socio-ecological systems. The conceptual framework of LTSER Zone Atelier has been designed to be operational within an action-research perspective. We will discuss how it can be applied to investigate its two coupling interfaces -- the adaptive management and the ecosystem services interface -- both set within an explicit landscape context. The question of the engagement of scientists will be at the heart of the exploration.

Talk 2. HOURCADE Renaud, CNRS, IEP de Rennes
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"Explaining public (in)action in the context of surface water pollution. Lessons from the SATORI comparative research program"

Many situations of long-term surface water pollution by industrial or agricultural activities remain unregulated or are regulated only with considerable delay. Lack of expert measures and scientific uncertainties can play a role in this lack of action, but other factors are also instrumental: the underprivileged profile of the impacted community, the perceived low "value" of the milieu, the strong weight of the economic interest at stake or the weakness of local pro-environmental advocacy coalitions. The SATORI program traced and compared the influence of each of these factors and their combination throughout a 20 cases qualitative comparative research design (QCA), with the view to uncovering the factors of political action toward pollution. The results, which highlight several types of interplay between policy (in)action and the game of economic interests, will feed a discussion about environmental governance and what could a resilience-centered perspective mean for it.

Talk 3. Anne-Caroline Prévot, CNRS, CESCO MNHN
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“Socio-ecological resilience for individuals: the importance of experiencing nature”

In this presentation, I will discuss different manners for individuals to address ecological, social or individual tipping points, and how these processes can support social-ecological resilience. I will focus on experiences of nature, i.e. processes in which an encounter with nature is anchored in individual personal history and a specific social context, which induce a transformation in individuals. Following psychological processes will be particularly explored: feeling of loss, place attachment, social bonding, and reconnection to nature, towards empowerment and renewed stewardship.

Clayton S., Colléony A., Conversy P., Maclouf E., Martin L., Torres A.C., Truong M.X., Prévot A.C. 2017. Transformation of experience: Toward a new relationship with nature. *Conservation Letters* 10: 645-651

Torres A.C., Nadot S., Prévot A.C. 2017. Specificities of French community gardens as environmental stewardships. *Ecology and Society* 22(3):28. <https://doi.org/10.5751/ES-09442-220328>

Talk 4. GUERBOIS Chloé, Univ. of Nelson Mandela, South Africa

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“Frameworks to assess the robustness and resilience of social-ecological systems including protected areas”

Analysing complex social-ecological systems (SES) and their resilience requires inter- and trans-disciplinary tools and cross scale-perspectives. In response to Hardin’s works on the Tragedy of the Commons, Ostrom and colleagues developed theoretical frameworks to study the dynamics and the resilience of common pool resources systems from a governance perspective. In addition, several frameworks building on Meadows achievements on the theory of change and SES adaptation theories, have attempted to provide leverage points to foster resilience and sustainability transformation. To date, these frameworks have not yet been sufficiently tested in practice and major gaps remain between the theoretical and the practical foundations of resilience.

The Hwange LTSER in Zimbabwe lies at the core of the biggest Transfrontier Conservation Area in southern Africa, in one of the richest area in terms of identities and biological diversity. Over the past 20 years, Zimbabwe has experienced several political and economic crises as well as unpredictable climate changes. This regime shifts have affected the functioning of the Hwange SES and the contribution of the protected areas to sustaining well-being in communities relying on subsistence farming and natural resource-based livelihoods. How did Hwange remain the renowned healthy attractive ecosystem with its rich bio-cultural diversity and how robust is it?

We mobilise several theoretical conceptual frameworks to understand the principles guiding the apparent resilience of the Hwange SES. By explicitly addressing the weak and strong linkages within the SES, and the value systems generating them, we identify likely attributes fostering resilience in biologically and culturally diverse SES. We highlight some fundamental ingredients for integrated conservation and warn against fostering maladaptive response to risk and change at the interface between protected areas and surrounding communities.

Discussion. FABRICIUS Christo, Univ. of Nelson Mandela, South Africa
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Christo Fabricius will summarise the talks and discussion. He will enrich this summary of his experience in managing socio-ecosystems in South Africa. Discussions with the audience will be initiated and facilitated by Christo.