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Long term socio-ecological research across temporal and spatial scales

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Understanding trajectories of change in coupled socio-ecological (or human-environment) systems requires monitoring and analysis at several spatial and temporal scales. Long-term ecosystem research (LTER) is a strand of research coupled with observation systems and infrastructures (LTER sites) aimed at understanding how global change affects ecosystems around the world. In recent years it has been increasingly recognized that sustainability concerns require extending this approach to long-term socio-ecological research, i.e. a more integrated perspective that focuses on interaction processes between society and ecosystems over longer time periods. Thus, Long-Term Socio-Ecological Research, abbreviated LTSER, aims at observing, analyzing, understanding and modelling of changes in coupled socio-ecological systems over long periods of time. Indeed, the magnitude of the problems we now face is an outcome of a much longer process, accelerated by industrialisation since the nineteenth century. The paper will provide an overview of a book (in press) on LTSER with particular emphasis on 'socio-ecological transitions' in terms of material, energy and land use dynamics across temporal and spatial scales.

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