
Naturalness assessment, a tool to link efficiently paleoecology and conservation

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Abstract

One of the main issue of conservation is about biodiversity loss related to the on-going and future socio-ecological stakes. However, it is well documented that the on-going state of any ecological system results from past mechanisms having legacy influences on the future state of the system. Therefore, to anticipate the coming changes it is relevant to take into consideration historical perspectives. To do that in a relevant and operational way for effective conservation it appears necessary to use the most possible complete puzzle of the past environment and to link that picture to the scale of management, meaning local scale. This is a key challenge for paleoecology intending to contribute to conservation. We propose here to assess the naturalness of ecological systems based on an interdisciplinary protocol providing complementary data to assess the historical relationship between human activities and ecosystem dynamic at a local scale, from long term scale to the on-going processes. To illustrate this purposes, we present several study cases in France and Germany where soil charcoal and tree ring analyses are related to the characterized state of the ecological systems. In the end it is postulated that naturalness level might be a relevant and powerful complementary criteria of biodiversity to guide conservation strategy and the decision process of environmental stakeholders.

Keywords: Biodiversité, human impact, management, historical dynamics, spatiotemporal scale

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