
Adaptation to climate change and biodiversity in French forests: a love-hate relationship?

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Abstract

France is highly covered by forests, upon which rely numerous jobs and natural habitats. Therefore, the country adopted a strategy of adaptation to climate change, leaning on a rich silviculture history to offer foresters various means to adapt (rotation shortening, species mixes, ...). Still, different adaptations can be interesting in a given forest, depending on the trade-off between ecosystem services: timber production, biodiversity conservation, water quality preservation, ... Hence, how do French foresters decide of the adaptation to implement? What are the impacts of their choices on biodiversity?

The following explores how adaptation in the field occurs – a complementary approach of providing better understanding of the impacts of climate change on forest biodiversity. It analyses how biodiversity is included in field adaptations, and how this concords with guidelines of sustainable forestry. Results come from semi-structured interviews led in two French forests differing in anthropization, making use of ecology and geographic sciences. The analysis discriminates two non-exclusive positions on biodiversity: "utilitarists" adapting thanks to biodiversity and "conservationists" adapting for biodiversity. Utilitarists rely on species selection or introduction of allocthonous species to resist windstorms or biological attacks for instance, a potential threat for local populations. On the opposite, conservationists favor Darwinian adaptation over interventionist strategies. Conservationists would for example prioritize spontaneous evolution, at the risk of tree species running short of time because of the speed of climate change.

These results are integrated in a wider project including natural parks managers for decision-taking in forest management. Because elements of biodiversity are deeply rooted in adaptation discourses, a serious game is currently being designed in order to assess what adaptation strategies foresters project – or not – in an uncertain climatic future.

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