
Climate change and ecological management: from historical structural to futuristic functional goals

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Abstract

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Ecologists often distinguish two forms of ecological management on the basis of the type of goals pursued, namely restoration and rehabilitation. According to this tradition, ecological restoration aims at re-establishing the lost species composition of degraded sites. Although setting such structural goals is still very common, many find this traditional approach unrealistic and/or undesirable. So it has become increasingly common to see ecologists and practitioners setting functional goals and promoting ecological rehabilitation instead of restoration. One of the arguments for doing so suggests that, in a context of climate change, species assemblages that prevailed centuries ago might not be the most viable or suitable assemblages for the future. They thus advocate abandoning historic structural goals for futuristic functional goals. Although I am sympathetic to this view, I think it is important to reflect on the assumptions and consequences of making this change in practice. The functional approach may seem more realistic and desirable in a changing world, but it is not problem free. Part of the reason why a functional approach is so attractive is the multiple realizability of functions. A certain level of nutrient cycling for example can be achieved by different species assemblages. However, this multiple realizability creates a situation where it becomes important to decide which realization is best. We would not want to say: "anything goes" as long as ecological function X is fulfilled. Concerns about biodiversity or integrity for example seem to impose some limitations on the functional approach. So, this paper is an invitation to think about the prudential arguments we need to develop while moving toward a futuristic and functional ecological management.

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