Species and species diversity in relation with restoration and persistence of degraded ecosystem functions

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Abstract

Species diversity is an important character of an ecosystem, and keeps it to function. Species diversity and their communities provide human with essential ecosystem services, including nutrient cycling, biological productivity, trophic function, etc. Species diversity is tightly related with the ecosystem's ability to withstand stress and disturbance. Increasing biodiversity could enhance system stability. Compared to individual species and species number, functional group and functional diversity impose larger impact on system functioning, and are good approaches used to measure stability and to predict community change. Several forms with which the species act on ecosystem functioning were proposed and discussed in this paper.

Understanding the relationship between species diversity and ecosystem function could guide the practice of restoring degraded ecosystem and maintaining its functions. Particularly, it provides basic ecological theories for "species assemblage" at initial stage of restoration.
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