

An Introduction to Behavioural Ecology, 4th Edition

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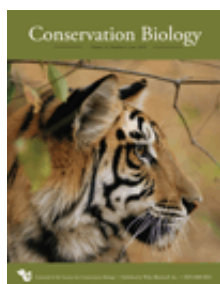
Conserving Biological Diversity through Ecosystem Resilience

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Confusion over the term ecological redundancy (Walker 1992) requires that the concept be clarified in order to advance the developing theory that maintaining ecosystem function conserves biological diversity. The species approach to conserving biological diversity assumes that the species in trouble are already identified. The ecosystem approach attempts to deal with the problem of conserving all the species in an ecosystem, including those not yet known. This is best achieved by ensuring that the ecosystem continues to function approximately as it has by maintaining its essential structure. Ecosystem stability (the probability of all species persisting) is enhanced if each important functional group of organisms (important for maintaining function and structure) comprises several ecologically equivalent species, each with different responses to environmental factors. In this sense ecological redundancy is good because it enhances ecosystem resilience, but functionally important groups (guilds, functional types) that have only one or very few species deserve priority conservation attention because their functions could be quickly lost with species extinctions.

La confusión existente sobre el término redundancia ecológica (ver Walker 1992) hace necesario que el concepto sea clarificado a efecto de avanzar en la teoría actualmente en desarrollo sobre el mantenimiento de la función ecosistémica que conserva la diversidad biológica. La estrategia en términos de especie para conservar la diversidad biológica asume que la especie en problemas ya ha sido identificada. La estrategia ecosistémica intenta abordar el problema de conservar todas las especies dentro de un ecosistema, incluyendo aquellas que todavía no son conocidas. La mejor forma de alcanzar esta meta es asegurando que el ecosistema continúe funcionando aproximadamente de la misma forma en que lo ha hecho y manteniendo su estructura esencial. La estabilidad ecosistémica (la probabilidad de que todas las especies persistan) es aumentada si cada grupo funcional importante de organismos (importantes para el mantenimiento de la función y estructura), comprende varias especies ecológicamente equivalentes, cada una con repuestas diferentes a los factores ambientales. En este sentido, la redundancia ecológica es buena porque aumenta la resiliencia ecosistémica, pero los grupos funcionales importantes (gremios, tipos funcionales) que tienen sólo unas pocas o una sola especie merecen atención con respecto a la conservación prioritaria, porque sus funciones podrían ser rápidamente perdidas con las extinciones de especies.

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