



Incorporating Multiple Criteria into the Design of Conservation Area Networks

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Abstract

A two-stage protocol for the design of conservation area networks which allows multiple constraint synchronization is described. During the first stage areas are selected to represent components of biodiversity up to specified targets as economically as possible. The principal heuristic used is complementarity. This process results in a set of conservation area networks which comprise the feasible alternatives for the subsequent analysis. During the second stage, multiple criteria (including spatial configuration criteria, vulnerability criteria, and socio-political criteria) are used, first to select the non-dominated feasible alternatives, and then to refine the non-dominated set further. This refinement is performed using a modification of the analytic hierarchy process.

Resumen

Describimos un protocolo de dos etapas para el diseño de una red de zonas que permita la sincronización de múltiples limitantes. En la primera etapa, se eligen zonas representativas de la biodiversidad hasta obtener en la manera más económica posible las metas especificadas. La complementación es la heurística usada. Este proceso genera una red de áreas de conservación que constituyen en alternativas viables para ser analizadas subsecuentemente. Durante la segunda etapa, usamos criterios múltiple (incluyendo criterios de configuración espacial, de vulnerabilidad, y político-social) primero para seleccionar alternativas viables no dominantes, y luego para refinar aun mas la selección del grupo no dominante. Para lograr la selección usamos una variación del proceso de jerarquía analítica.