

Alternative approaches to reserve design

SCIENTISTS AND THE PUBLIC HAVE CRITICIZED the establishment of reserves as not promoting the persistence of species, ecosystems, and ecological processes representative of biological diversity. Gonzales et al. (2003) demonstrate the application of newer approaches to systematic reserve design, which could help stakeholders simultaneously maximize ecological, societal, and industrial goals. The authors created example-reserve designs using the simulated annealing algorithm of SITES 1.0 and then contrasted them with a proposed multi-stakeholder process for British Columbia's central coast. Without increasing land area or timber volume, the strategic approach used reserve designs that included greater portions of key conservation elements such as parts of ecosystems or habitats identified by stakeholders.

The example designs are a work in progress and do not represent final results. The approaches shown are scientifically repeatable and allow modifications as new information is obtained. Simulations can be conducted rapidly, to facilitate workshop formats, or compiled in a manner to prioritize conservation planning units. The authors strongly recommend that strategic approaches to reserve design be used both to provide focus and to catalyze planning discussions. These tools should encourage planning teams to review and modify proposed designs based on theory, natural history information, and local and traditional knowledge. Applying such tools in cases that involve complex sets of biological, social, economic, and political goals and constraints should make planning processes more explicit, repeatable, and defensible.

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Reference

Gonzales, E. K., P. Arcese, R. Schulz, and F. L. Bunnell. 2003. Strategic reserve design in the central coast of British Columbia: Integrating ecological and industrial goals. *Canadian Journal of Forest Resources* 33:2129–2140.

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