

Systematic Conservation Planning

Key reading

Margules, C. R., & Pressey, R. L. (2000). Systematic conservation planning. *Nature*, 405(6783), 243–53.
doi:10.1038/35012251

Review and highlights:

- A review paper laying out the nascent field of systematic conservation planning.
- A general review of the need and basic concepts in systematic conservation planning
- Step by step guide for systematic conservation planning

Species Distribution Models

General

Key reading

Eliith, J., and J. R. Leathwick. 2009. Species Distribution Models: Ecological Explanation and Prediction Across Space and Time. *Annual Review of Ecology, Evolution, and Systematics* 40:677–697.

Review and highlights:

- A thorough review of SDMs and their ecological basis, the niche concept,
- A general review of the assumptions of SDMs including discussion of equilibrium, biotic interactions, and spatial scale
- Review of fitting and evaluating SDMs and potential pitfalls when projecting into the future or using SDMs in conservation planning

Spatial Prioritization

General

Key reading

Sarkar, S., R. L. Pressey, D. P. Faith, C. R. Margules, T. Fuller, D. M. Stoms, A. Moffett, K. a. Wilson, K. J. Williams, P. H. Williams, and S. Andelman. 2006. Biodiversity Conservation Planning Tools: Present Status and Challenges for the Future. *Annual Review of Environment and Resources* 31:123–159.

Zonation software

Key reading

Moilanen, A. Landscape Zonation, benefit functions and target-based planning: Unifying reserve selection strategies (2007) *Biological Conservation* 134, 571-579

Review and highlights:

- Introductions to the Zonation approach

Marxan software

Key reading

Watts, M.E., Ball, I.R., Stewart, R.S., Klein, C.J., Wilson, K., Steinback, C., Lourival, R., Kircher, L., Possingham, H.P., 2009. Marxan with Zones: Software for optimal conservation based land- and sea-use zoning. *Environmental Modelling & Software* 24, 1513–1521.

Review and highlights:

- Introducing Marxan with Zones.

Stralberg, D., Cameron, D.R., Reynolds, M.D., Hickey, C.M. et al. (2011) Identifying habitat conservation priorities and gaps for migratory shorebirds and waterfowl in California. *Biodiversity Conservation* 20:19-40.

Review and highlights:

- Linked estimated bird density models to Marxan.

Conservation planning with climate change

General

Key reading

Schwartz, M. W. 2012. Using niche models with climate projections to inform conservation management decisions. *Biological Conservation* 155:149–156.

Review and highlights:

- Review of the application of niche models for use in informing conservation management decisions using future climate change projections.
- Discussion of important challenges to the approach

No-analog climates

Key reading

Williams, J.W., Jackson, S.T. 2007. Novel climates, no-analog communities, and ecological surprises. *Frontiers in Ecology and the Environment* 5, 415-482

Review and highlights:

- Description of no-analog communities using a conceptual framework.
- A review of the problems and implications no-analog communities pose to species distribution models
- Projection of global novel climates by 2100 AD

Invasive species

Ward, D. (2007) Modelling the potential geographic distribution of invasive ant species in New Zealand. *Biological Invasions* 9:723–735.