

Metapopulation Dynamics: Population Viability Analysis of Terrestrial Organisms

Akcakaya, H.R. 1995. Linking landscape data with Population Viability Analysis: management options for the helmeted honeyeater *Lichenostomus melanops cassidix*. *Biological Conservation*. 73:169-176.

Although an earlier PVA paper, it gave added insight to the need for sophisticated models for rare, fragmented populations. The paper was easy to understand and an excellent baseline for understanding the objectives and assumptions of PVA.

Casagrandi, R., M. Gatto. 2002. A persistence criterion for metapopulations. *Theoretical Population Biology*. 61:115-125.

Although the paper does not discuss PVA, it gave background information to evaluate population persistence in fragmented habitats. The paper analyzes spatially implicit model theory and claims to obtain persistence-extinction boundaries and the expected number of dispersers as a function of biological characteristics.

Morris, W.F., Bloch, P.L., Hudgens, B.R., Moyle, L.C., J.R. Stinchcombe. 2002. Population Viability Analysis in endangered species recovery plans: past use and future improvements. *Ecological Applications*. 12:708-712.

The paper fulfilled its objective by providing statistical trends of conservation planners using PVA. However, it did not provide new information on PVA theory or gave recommendations that were beyond intuitive thought.

Pedrono, M., Smith, L.L., Clobert, J., Massot, M., F. Sarrazin. 2004. Wild-captive metapopulation viability analysis. *Biological Conservation*. 119:463-473.

Using wild and captive ploughshare tortoise populations, they analyzed demographic parameters to conduct PVA. This paper was a well-written and straightforward example of a real-world application for interactive conservation management.

Reed, J.M., Mills, L.S., Dunning, J.B., Menges, E.S., McKelvey, K.S., Frye, R., Beissinger, S.R., Anstett, M.C., P. Miller. 2002. Emerging issues in population viability analysis. *Conservation Biology*. 16:7-19.

Excellent review paper of the overall uses and limitations of PVA. They addressed trends of increased model sophistication and increased confusion over interpreting results. More importantly, they outline guidelines for conservation managers using PVA.

Schtickzelle, N., M. Baguette. 2004. Metapopulation viability analysis of the bog fritillary using RAMAS/GIS. *Oikos*. 104:277-290.

Good case study of a long-term population model to predict the population growth rate of fragmented populations. They found that population growth-rate was density dependent as it related to larval parasitism and as temperature decreased, population size increased.