

Ehrlich, P. R. (1996): Conservation in temperate forests: what do we need to know and do?

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Abstract

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Abstract

Very little is known about some key variables that would be involved in any sound program to conserve biodiversity in temperate forests. For example, the distributions of both species and population diversity are almost totally unexplored. How well species diversity in different groups is correlated at a local scale is unknown; as a result it is unclear whether there are any 'indicator groups' that can serve as surrogates for overall species diversity when designing specific conservation projects. Equally, the areal extent of both Mendelian populations and demographic units in forests of various types is essentially unknown, as is the frequency of occurrence of metapopulations.

There is thus a need for a geographically and ecologically stratified sample of studies evaluating patterns of both species and population diversity. That sample should also provide information in other areas where much more understanding is required for the formulation of sound policies. These include issues of: time-scale (maintenance of appropriate successional stages and disturbance regimes, the long-term viability of heavily harvested forests or plantations, and rates of evolutionary response to global change); edge effects and their penetration into forest; 'vulnerability', including interactions between climatic stress and insect infestation, susceptibility to invasions or to extinction cascades, and other subtle effects such as habitat dilution.

Such information is essential to judge how easily management practices may be adapted to different forests. It can be used to improve 'internal' conservation strategies: those based on knowledge of the systems to be conserved. There are, however, internal strategies whose adoption requires no more scientific

information than is available now. These include a ban on further timber harvesting in old-growth or riparian zones; limited harvests in mature second growth with careful monitoring; concentration of exploitation in present plantations; and restoration of degraded lands to conservation or plantation status.

'External' strategies are designed to limit and then reduce the scale of human enterprise to make the internal strategies feasible. While what needs to be done there is very clear, how to accomplish it is not.

In the face of all this ignorance, some priorities are suggested for research, and some 'common sense' strategies of conservation that can be used *faute de mieux* while awaiting more thorough understanding of temperate forest ecosystems. The most important is that conservation biologists spend much more time on external strategies.

[biodiversity](#)

[forest management](#)

[nature conservation: management, plan](#)

Notes

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References

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