

A rationale for large ecological reserves

Biological diversity must be protected at genetic, population, and landscape scales, and such protection requires an integrated system of large nature reserves and ecosystem management according to Edward Grumbine (1990. Protecting biological diversity through the greater ecosystem concept. *Natural Areas Journal* **10**(3): 114-120). Merely protecting species fails to capture important elements of biological diversity such as ecosystem patterns and processes. The current network of nature reserves will not protect many species for more than 50 years. A large nature reserve must provide the primary habitat for all native species in the area. It must be sufficiently large to accommodate natural disturbance regimes, and its human occupants and human use must not result in ecological degradation. The reserves will have to be monitored to determine whether management is indeed protecting biological diversity. Preservation of biological diversity with ecosystem management requires consistency and coordination of policy, administration, and techniques.

Ecosystem management presents biological, legal, educational, cultural, and economical problems that will have to be resolved. As yet however, the science for protecting biological diversity is still in its infancy. Citizens of industrial countries are only marginally informed about the magnitude of ecology in the lives of people. Governmental agencies employ few conservation biologists. Managers, politicians, and many citizens do not favor the establishment of large nature reserves and revenues for their maintenance and management. Divergent land management by the USDA Forest Service and the National Park Service must be resolved. Federal agencies must support legislative reform for the protection of biodiversity. An endangered ecosystems act is needed. The public must be educated and persuaded to become party to decisions that bear on the long-term protection of biological diversity. Equal weight cannot be given to all interest groups because many would destroy biological diversity for short-term economic gain. Time to implement the preservation of biological diversity is short.