
Book Reviews

Charles P. Stone and J. Michael Scott, eds. 1985. *Hawai'i's Terrestrial Ecosystems: Preservation and Management*. Cooperative National Park Resources Study Unit, University of Hawaii, Honolulu. xxvii, 584 p.

Preservation of the Hawaiian flora and fauna presents problems in a different order of magnitude from those ordinarily found in other areas. The Hawaiian biota is considerably more fragile than those of mainland areas, because Hawaiian plants and animals have evolved in ecologically lush conditions free from predators, pests, and competitors. Suddenly, with the advent of man, especially after European exploration, the predators, pests, and competitors have flooded into the islands, often in unexpected ways. Ornamental plants have escaped from gardens into the wild, as have trees introduced in an effort to grow commercially valuable timber.

Until relatively recently, mainland ecological concepts were assumed by most involved to be applicable to the Islands, but they are not. Once introduced, the newcomers are not displaced by the natives. The underlay of disturbance by tenacious herbivores – goats, pigs, and sheep – accelerates the entry of the introduced plants and animals.

Thus, readers of this volume will find little of encouragement, and much implicit distress in the management problems presented. The book's authors are to be congratulated for their thorough documentation of which organisms are in danger, which introduced species are doing what, and which conservation measures are yielding what results. This book contains, to my knowledge, the first such documentation for the biota as a whole. Whatever reservations readers might have about coverage in this book will surely be insignificant compared to the achievement represented here. Levels of information and documentation are excellent, and the contributions are thoughtful. Because the scholarship is so good throughout, I feel that singling out particular chapters for congratulation would be invidious.

The Hawaiian management problem features some unusual paradoxes, most of which are realized by the authors. For example, biological control organisms are highly desirable, but their use is irreversible and they may spread in unpredictable ways (Howarth). Research is advocated by several authors, but funds for such unglamorous work are not readily available; also, there is more than a passing chance that research will not yield much more than a timetable for disappearance of some species. A research effort may merely document disappearance rather than counteract it; the disappearance may proceed so rapidly that the luxury of research is not a viable option.

Exclosures to protect plants from goats and other herbivores (Loops and Scowcroft) have yielded good results in some cases. In areas with few species or with higher degrees of degradation, results are naturally not noteworthy, and thus that program unfortunately may not inspire strong support. Should more exclosures be devised? Undoubtedly, but in what areas, and with what funds are troubling questions. Breeding of the Hawaiian goose in pens was a success at the captive maintenance stage, but release into the wild without constant addition of new

individuals every year does not succeed, for the goose can no longer maintain itself in areas in which it once thrived (Lamoureux).

Authors are agreed that we must stop further disturbance of the ecology, if species are not to continue vanishing, but multiplicity of authorities responsible for management and the delicacy of politics offer problems (Stone and Scott). Moreover, there are no guarantees that if all measures were taken, any given area could be restored. Zoo and botanic garden populations of some species might be our best hope for the future, although that kind of conservation will not help some groups of organisms, such as insects. Very likely we will have to consider some areas as irretrievably lost to exotic flora and fauna.

In sum, this is a fine book, which deserves careful reading by all seriously interested in management. Hawaii's management problems are severe, but the rest of the world may not be much safer, and we ignore the Hawaiian experience at our peril.

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