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Review of *Endangered Birds. Management Techniques for Preserving Threatened Species*, ed. Stanley A. Temple

Paul A. Johnsgard
University of Nebraska-Lincoln, pajohnsgard@gmail.com

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Book Reviews

Preservation Efforts

Endangered Birds. Management Techniques for Preserving Threatened Species. Proceedings of a symposium, Madison, Wis., Aug. 1977. STANLEY A. TEMPLE, Ed. University of Wisconsin Press, Madison, and Croon Helm, London, 1978. xxiv, 468 pp. + plates. $9.50.

In 1977 an international symposium brought together scientists having expertise in the conservation and management of the world's endangered species of birds. The resulting publication includes 50 papers that were presented at the symposium, together with some concluding remarks. Although this is certainly an impressive assemblage of papers and topics, it should be noted that only about 40 species are mentioned in the proceedings, as compared with a total of 265 species and 140 subspecies worldwide that are currently believed to be threatened.

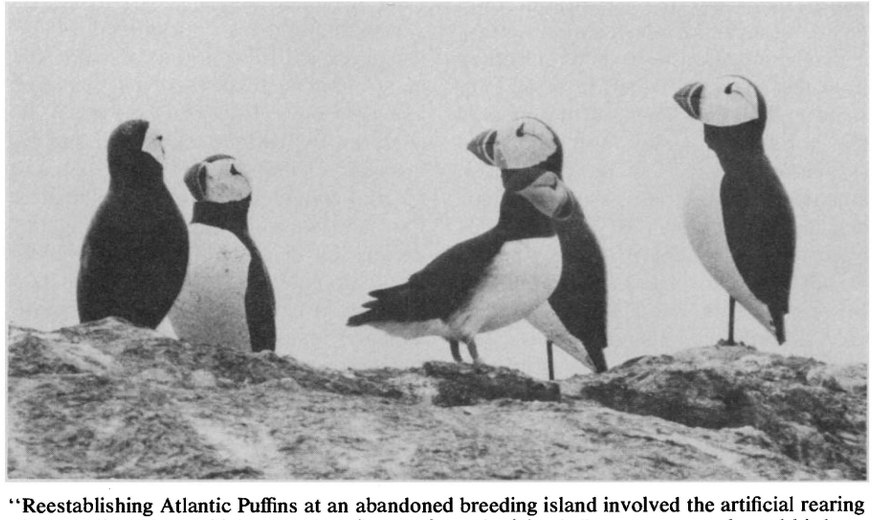
The magnitude of the problem, both geographic and ecologic, is well defined by Warren King's summary of the estimates of endangered bird taxa, the causes of their endangerment, and the efforts if any being made to prevent their extinction. Between the initial publication (1966) of the *Red Data Book* on endangered species and the preparation of its revised edition in 1978, 15 bird species thought originally to be endangered have come to be regarded as extinct and four species considered extinct have been rediscovered. About 90 taxa listed in the original edition have been omitted because it has been determined that they are not at risk, but nevertheless the total number of taxa listed in the revised edition has increased by 72. Of the total about 37 percent, or some 150 taxa, are considered endangered, while the rest are regarded as vulnerable, rare, or of indeterminate status.

In terms of habitat, according to King, forest-dwelling forms make up the majority of threatened birds, and island-dwelling forms slightly outnumber continental forms. Most of the island-dwelling forms are from the Pacific Ocean region, and South America, Africa, and Madagascar are regions of special concern for endangered continental forms. The coastal portion of southeastern Brazil is an area of special significance, containing 21 endangered taxa. As to management and conservation efforts, 72 species are being given "active" aid (involving direct intervention), another 269 are receiving "passive" attention (legal protection), and 108 lack both legal protection and habitat protection. Many of the last group occur in Madagascar and South America. Europe, North America, and Australia are the regions providing active management programs for at least half of their endangered forms.

Most of the remaining papers describe approaches to dealing with particular species. For example, the removal of nest-site limitations as a means of increasing reproductive effort has been successfully applied to the management of ospreys, bald eagles, eastern bluebirds, and many other species and has perhaps improved the outlook for the Asian bald ibis. It is also being applied to the critically rare Puerto Rican parrot, the population of which has averaged under 20 individuals in recent years.

Reducing problems associated with interspecific competition, predation, parasitism, and disease has been fruitfully used as a management technique, and several of the papers deal with this approach. One of the most interesting programs of this type is that devised by David Wingate to protect the Bermuda petrel or cahow from nest-site competition with the white-tailed tropicbird and from predation by rats. The installation of baffles that prevented access to nesting burrows by the larger tropicbirds was the first step. This was followed by the construction of artificial burrows in level areas where tropicbirds are unlikely to find and use them, a measure that greatly increased the cahow's potential nesting habitat. An equally interesting approach is that reported by Noel Snyder and John Taapken, who discovered that the best way to reduce nest-hole competition between the Puerto Rican parrot and the pearly-eyed thrasher was to provide alternative nest boxes that were more suited to the thrasher's requirements than were the boxes provided for the parrots.

Supplemental feeding or the manipulation of feeding ecology receives attention in five papers, as does the approach of manipulation of nesting biology by such techniques as fostering and cross-fostering experiments. Cross-fostering, in which one species is used to incubate the eggs and rear the young of another species, is certainly one of the most imaginative and ethologically interesting methods of dealing with endangered species, for it brings with it not only the potential of establishing new populations of a species in areas new to or previously occupied by the species but also the dangers of cross-specific imprinting and potential hybridization, or at least mixed pairing tendencies. Thus, the current efforts involving the raising of whooping



"Reestablishing Atlantic Puffins at an abandoned breeding island involved the artificial rearing of 347 puffin chicks which were then fledged from the island. To encourage released birds to return to the island when they matured, carved decoys were placed on conspicuous rocks around the island. In 1977, the first of the released birds returned to the island. . . . The photograph shows a returning, banded puffin perched amongst four decoys." [From *Endangered Birds*: see S. W. Kress, chapter 42]

cranes with foster sandhill cranes are of great interest both to conservationists and to behavioral scientists.

The breeding of endangered species in captivity and the associated problems of the genetics of small populations and of reintroducing captive-raised birds into the wild receive considerable attention, and the papers on the maintenance of genetic diversity associated with such situations are of special significance. Last, there is a group of papers on integrated approaches to the management of endangered birds.

The book is printed on paper of moderately good quality and has 31 photographic illustrations. It should obviously be part of the library of any biologist concerned with the conservation and management of endangered bird species.

PAUL A. JOHNSGARD
School of Life Sciences, University of Nebraska, Lincoln 68588