

Shorebirds and Large Waterbirds Conservation. Proceedings of two workshops held at St. Aiden's College, Durham, United Kingdom, September 17-18, 1983—P. R. Evans, H. Hafner, and P. L'Hermite (Eds.). 1984. Brussels: Commission of the European Communities.—This monograph includes many of the papers presented at a meeting of the "Conservation of Wild Birds" contact Group, sponsored by the Environment Research Programme of the Commission of the Euro-

pean Communities, at Durham University. I was privileged to attend this conference and find the monograph to be a valuable record of the exciting research discussed there. The two symposia were on the "Conservation of shorebirds" and the "Conservation of herons, egrets, and other large waterbirds." The latter, convened and edited by Heinz Hafner included nine published papers on habitat requirements during the breeding season, molt, migration, and the non-breeding season.

M. E. Moser presented a summary of his definitive work on the ecology of the Purple Heron (*Ardea purpurea*) in the Camargue. He found that even where reedbeds used for nesting sites are expansive, colony size can be limited by feeding territoriality of the birds. This result suggests that birds displaced from fast-disappearing reedbeds may not be able to join other colonies elsewhere. Therefore it is essential that conservation measures seek to preserve and create suitable nesting sites while also protecting feeding habitat.

M. Fasola discussed the status of herons in northern Italy, especially emphasizing the importance of rice fields and irrigation canals. Land reclamation has reduced colony site availability, but one-third of the sites have been protected by preserves.

A. J. Crivelli summarized the status of the two European pelicans. He concluded that the future of both species is threatened in Europe, as Greece is the only remaining location where both nest. An urgent need is for studies and conservation of these Greek colonies.

H. Hafner shared his experience with creating heron colonies. This remarkable feat has important implications for colonial waterbird management. Hafner planted suitable trees and then attracted birds using models, artificial nests, nesting material, and living birds borrowed from a zoo.

A. J. Cave' reported that the survival rates of first year Purple Herons were directly related to hydrologic conditions in tropical Africa. By analysis of banding recoveries and simulation modeling, he found that decreased survival is directly related to the severity of drought in the wintering area. This result reflects similar findings for the Grey Heron (*Ardea cinerea*)

and White Stork (*Ciconia ciconia*), the European populations of which seem also to depend on conditions in Africa, and suggests the desirability of complementary studies in North America and Asia. This topic was further explored by P. J. Dugan who discussed the need and mechanisms for studying European herons on their wintering ground. He also summarized recovery data from the area.

D. Breden discussed a little studied phenomenon, the survival of nonmigrating herons in winter. He found that the Cattle Egret (*Bubulcus ibis*) abandons its association with mammals in the winter in the Camargue to feed on small mammals.

The use of fish farms by Grey Herons is a conservation problem of some magnitude in Europe. H. Hafner discussed the situation in France, and C. J. Cadbury and J. Fitzherberg-Brockholes discussed it in the United Kingdom. By studying the characteristics of predatory behavior, one can decrease losses without killing the birds. This paper demonstrates the role of basic biological studies in devising conservation plans. Managing the impact of herons on fish farms and the impact of fish farms on herons is crucial in that an estimated 4600 \pm 1000 herons may be shot annually at fish farms in the UK, a figure near the long term mean of the breeding population.

These papers constitute a significant advance in the basic biology of European colonial waterbirds and an important step in developing suitable conservation schemes. The European Community should be recognized for its commitment to bird research and management through the Environment Programme, a model for international co-operation on conservation concerns that cross national boundaries, as most do.—**James A. Kushlan**, Department of Biological Sciences, East Texas State University, Commerce, Texas 75428 USA.