Five specimens were obtained for the Wildfowl Trust and were dispatched with the minimum of delay through the cooperation of the Pakistan authorities. The birds were in fair condition, but the one which was skinned had hardly any subcutaneous fat and it is probable that they had not long arrived from their autumn migration. The gizzard of the dead bird was found to contain beside gastroliths a quantity of small black seeds believed to be of *Ruppia maritima* and two kinds of buff coloured seeds, one of which could be of *Melilotus indica*. This contradicts Stuart Baker (1929) who describes their diet as 'mainly animal' but does support Dementiev and Gladkov (1952) who mention *Ruppia maritima* as a food source in the south east of the Caspian Sea. Measurements of the birds handled are given in Table I.

Additional note. Numbers continued to build up to a peak of over 700 in February, 1965, and that in spite of heavy mortality from shooting to which ten ducks were an easy prey. These numbers are a complete surprise to local ornithologists, but local hunters say that the species has been as common as this for some years now. This is no cause for complacence as it is highly probable that the increase is due to changes in distribution forced upon them by disturbance from the Hamun-e Hirmand (see p. 125).

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Wildfowl Survey in south-west Asia: a progress report

CHRISTOPHER SAVAGE

Summary

A private survey was started by the author during 1964, with the advice and encouragement of the Wildfowl Trust, to study the distribution and status of wildfowl species in southwestern Asia particularly in the context of the human changes which are taking place. The scope of enquiries includes the Middle East, India and Pakistan but ringing of birds will be confined to Iran and Pakistan through the Game Departments of these countries. A reconnaissance was made of the Hamun-e Hirmand in Iranian Sistan where recession of the swamp affects the local economy as well as wintering waterfowl. Information, particularly details of game bags, would be welcomed from Members.

Introduction

In recent years many changes have been taking place in south-west Asia which affect wildfowl. Increasing human population, improvements in communications and greater availability of modern firearms have increased 'hunting pressure' more than in other parts of the world, while changes in land use have been destroying old habitats and creating new. In West Pakistan, for example, drainage of some 'jheels' much favoured by many species in the past has been more than compensated by water-logging elsewhere, to the detriment of pochards but to the benefit of the surface feeders. This inter-relationship of engineering, agriculture and wildfowl ecology, and its implications in terms of conservation, has been little studied as yet and it is as a contribution to this study in Asia that the author, a civil engineer by profession, initiated this survey during the summer of 1964.

The scope of the survey was originally limited to West Pakistan but it soon became obvious that a more useful contribution could be made by the general study of the region and the coordination of cooperative efforts of corresponding observers. At the same time close liaison was established with the Game Council of Iran (now the Game Department) and the Game Department of West Pakistan, both of whom were anxious to start a programme of ringing and are now conducting departmental wildfowl enquiries of their own, and also with the vigorous Bombay Natural History Society, who have contributed so much to the knowledge of wildlife in the whole region.

The main object of the survey at present is to obtain and evaluate information on distribution and status of species – information which is needed before any real progress can be made in wildfowl conservation. The scarcity of qualified observers and lack of continuity in most cases precludes anything approaching the 'wildfowl counts' which are so valuable in Europe, but an attempt is being made to map species and habitat distribution on the lines used in the recent Nature Conservancy Monograph *Wildfowl in Great Britain.*

Progress to date

Searches have been made through available literature to determine where possible the position in the past and the extent of gaps in current knowledge. Although the searches are not complete it is already clear that even today surprisingly little is known except from the museum curator's viewpoint. A most valuable source of information however has been the game books of sportsmen. A number of sportsmen responded to a letter in *The Field* and many more have replied to personal enquiries. Many records unfortunately seem to have been lost at the time of Partition and during the 1939–45 war, and few people in recent years have kept notes in such detail as in the old days. Information of any kind, particularly any old records and details of game bags, would be welcomed from Members and should be forwarded direct to the author c/o 11F Gulberg, P.O. Bag 704, Lahore, West Pakistan.

Details of 78 recoveries of ringed geese

Table I. Published recoveries of ringed wildfowl marked or found in south-west Asia

	Russian rings found in			*Bombay N.H.S. rings found in*		
species	*India Pakistan*	*Iran Iraq*	*'Middle East'*	*USSR Abroad*	*India Pakistan*	*Total*
Bar-headed Goose *Anser indicus*	2	–	–	–	–	–
Ruddy Shelduck *Tadorna ferruginea*	1	–	–	–	–	1
Common Shelduck *Tadorna tadorna*	1	–	–	–	–	1
Pintail *Anas acuta*	6	2	–	–	–	8
Common Teal *Anas crecca*	2	–	–	4	3	9
Mallard *Anas platyrhynchos*	1	7	–	3	1	12
Gadwall *Anas strepera*	3	3	1	2	2	11
Wigeon *Anas penelope*	–	–	1	7	1	9
Garganey *Anas querquedula*	5	–	–	3	–	8
Shoveler *Anas clypeata*	1	–	8	2	1	12
Red-crested Pochard *Netta rufina*	–	–	–	2	–	2
Common Pochard *Aythya ferina*	–	–	–	3	–	3
	22	12	10	26	8	78

and ducks have been traced which throw some light on migrations in the area and it is hoped that appeals in the local press may bring in more. Recoveries to date are summarised in Table I. This is no more than a beginning and many more records are required before even a general picture can be put together. Ringing in Pakistan will certainly help, but no great advance can be expected before Soviet authorities extend their ringing programme further east, which it is believed they intend to do.

Sistan reconnaissance

In April 1964 a reconnaissance was made of the Hamun-e Hirmand in Sistan, south eastern Iran, which is a great swamp on the border of Afghanistan. This area, though an important wintering ground for waterfowl of all kinds, has been ornithologically unexplored since it was visited by Zarudny at the turn of the century. Few waterfowl were present in April and most of the Hamun was inaccessible for lack of a suitable boat. However, some wounded geese were found in captivity: Greylag Geese with pink bill and legs of the eastern race *Anser anser rubrirostris*, and also Lesser White-fronted Geese *Anser erythropus*. Both species were said to be abundant in winter. A large swan with yellow and black bill, presumably a Whooper *Cygnus cygnus*, had recently died in captivity after being captured a few weeks earlier when wounded. The fishermen and herdsmen said that in summer they collected the eggs of the Greylag Goose, of which they said a number stayed to nest, of the White-headed Duck *Oxyura leucocephala*, which they knew well, and of Coots.

Heavy shooting and netting of duck in February and early March is an important local industry though not quite so much as on the Caspian (Savage, 1963). The crop of reeds in spring furnishes building materials for housing and boats, and reed products such as mats and sun blinds from Sistan are marketed all over Iran. Fishing and grazing by amphibious cattle continue all the year round and provide protein for the whole district. Thus there is no doubt that the Hamun is an inseparable part of the local economy.

The area of swamp today however is much reduced and now depends entirely on winter floods on the Helmand River. Water storage projects in Afghanistan and intensified irrigation in both countries will continue to reduce the surplus flood waters reaching the Hamun and further recession of the swamp is inevitable. This is already causing concern as no alternative grazing exists for an estimated 100,000 head of cattle and the exposed shores of the northern part of the swamp are being eroded by the famous 100-day wind in summer, only to aggravate the already appalling problem of galloping sand dunes which engulf villages and canals. A more telling example of the need for coordination of technology and conservation could hardly be found.

A reconnaissance was also made of the lakes in the Punjab Salt Range. From both areas small collections of swamp plants have been identified by courtesy of the British Museum of Natural History, and water samples have been analysed by Sir Alexander Gibb and Partners in Sistan and the Water and Power Development Authority in West Pakistan.

Acknowledgement

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