

WILDFOWL CONSERVATION IN NORTH AMERICA SINCE 1945

By Frank C. Bellrose and Thomas G. Scott

(This article is reprinted from the December 1955 issue of the *Wilson Bulletin* [vol. 67, no. 4: pp. 310–312], with the kind permission of the authors and of Dr Keith L. Dixon, Editor of the *Bulletin*, and Dr Robert A. Pierce, Chairman of the Conservation Committee of the Wilson Ornithological Society. It was presented as a contribution from the Conservation Committee of the Society, which is one of the leading ornithological organisations in the United States, with a membership drawn from all over the country. We feel that this authoritative summary of recent developments in wildfowl conservation in America will be of considerable interest to everyone concerned about similar problems on this side of the Atlantic.

Since this report was written for an American audience, it makes use of some terms likely to be unfamiliar to British readers. Where their meaning may not be evident from the context, we have attempted to clarify these terms in footnotes.

When first published, the report was entitled 'Waterfowl Conservation in the Decade following World War II.' We have changed the title, but the substance of the report is reprinted without alteration.—ED.)

DURING the decade following World War II, the pressures growing out of an increasing human population have added progressively to the difficulty of and need for waterfowl conservation. Moreover, the events taking place during these ten years have contributed little to suggest that the waterfowl conservationist's road will be any less difficult in the future.

Waterfowl conservation during this period may be reviewed from three points of view: (1) administration, (2) management, and (3) research. As herein considered, administration embraces the political philosophy and financing of waterfowl management; management includes manipulation of waterfowl populations and habitat; and research concerns the gathering of facts upon which to base the management programme.

Administration ¹

The formation of state conservation agencies into councils for each of the four North American flyways ² has been a significant development in waterfowl

¹ *Administration.* There are in North America two national governmental conservation agencies, the U.S. Fish and Wildlife Service and the Canadian Wildlife Service. In addition nearly all the individual states and provinces have their own conservation organisation, and there is a similar two-tier system of law-enforcement officers. The functions of Federal and State organisations inevitably overlap, but the difficulties to which this sometimes lead are far outweighed by the advantages of a well-co-ordinated programme on a continental scale.

² *Flyways.* As a result of ringing studies it became apparent that waterfowl (and other migratory species too) in North America confine their migratory movements to rather well-defined geographical regions. These have come to be called 'flyways.' As stated above, there are four: Atlantic, Mississippi, Central and Pacific, each of vast extent. Definite lines cannot be drawn to mark the boundaries of any particular flyway, and parts of some populations are continually shifting between the different zones, but what was originally a biological discovery has proved to be an administrative convenience.

conservation. Each flyway council provides a means of formulating regulations tailored, within limits, to the needs of the individual flyway, and, to a lesser extent, to the needs of each state in the flyway.

As an adjunct to each council, the waterfowl biologists within each flyway may serve as a technical group which is available for consultation by the council. This technical group may also act as an agency through which the research activities of the flyway can be co-ordinated.

The flyway council system creates one potential danger to waterfowl conservation: it may tend to form a pressure group seeking unwarranted changes in hunting regulations. Members of the councils must endeavour to insure that the welfare of the waterfowl remains of primary concern.

Under new leadership, the U.S. Fish and Wildlife Service appears to be following a liberal attitude toward restrictions on waterfowl hunting. When the continental waterfowl population declined in 1953 and 1954, the Service not only adhered to the 1952 regulations³ on length of season and bag limit for the Mississippi Flyway, but, in 1953, increased the length of season five days for the Atlantic and Pacific Flyways and, in 1954, added an additional five days on the Pacific Flyway. At the same time, the Service permitted California to conduct an experimental feeding programme. The result: hunters in Ohio and Maryland have clamoured for similar privileges.

Whether the present liberal policy toward hunting regulations will affect waterfowl populations adversely remains to be seen. In 1953 and 1954 unusually mild weather prevailed over much of the United States during both hunting seasons, thereby tending to limit the kill of waterfowl. With favourable hunting weather, however, an excessive kill of the breeding stock may take place. Within the memory of living men, such unusually severe slaughters have taken place on at least two occasions. The possibilities appear especially dangerous in the Mississippi Flyway where a large portion of the waterfowl which winter there are relatively accessible to the hunter when concentrated. Thus, it seems apparent that the margin of safety guarding our waterfowl population under present administrative policies is paper-thin and that perhaps we are close to being guilty of gambling with the future of our waterfowl resource.

The philosophy of previous administrations of the U.S. Fish and Wildlife Service toward regulating the kill of waterfowl was voiced by Dr Ira N. Gabrielson, former Director of the Service, in a talk on 24 May 1955 in Washington, D.C. He stated: 'Since the passage of the Migratory Bird Treaty Act, there is no question but what the administrative policy of the Biological Survey and by the U.S. Fish and Wildlife Service has generally given primary consideration for the welfare of the waterfowl resource. Since the welfare of the ducks and geese is the prime consideration, it is necessary to be somewhat *conservative* in making regulations.'

Although the Wood Duck population in the Mississippi Flyway has steadily

³ *Regulations.* The American laws governing the timing and duration of the open season are fundamentally different from those in Britain. Annual assessments by the Fish and Wildlife Service of the breeding success of the various populations are taken as guides in framing regulations announced in August each year. These regulations, approved by the President, apply to the whole of the United States, but vary from state to state, according to the needs of the 'hunter' as well as the waterfowl. Thus the open season in the northern states is ahead of that in the south, and there are differences between east and west too. The regulations not only lay down the length of the shooting season but also prescribe bag limits (the number of waterfowl of various species that may be taken each day), and impose many other restrictions which are unknown to wildfowlers in this country.

declined in recent years, the Mississippi Flyway Council recommended that the closed season in force in 1954 be changed to permit one in the bag and in possession in 1955. The U.S. Fish and Wildlife Service accepted the Council's recommendation. In view of the precarious status of this species in the Mississippi Flyway, this decision appeared inconsistent with the need for being conservative in making regulations.

The budget of the U.S. Fish and Wildlife Service in recent years has not been adequate. This has resulted in the use of duck stamp funds for purposes other than those intended when the Duck Stamp Act ⁴ was passed by Congress. The Act was passed at the behest of sportsmen who had become aware of the need for obtaining and developing lands for waterfowl refuges. The funds have had to be used for activities of the Game Management Branch and the operation and maintenance of existing wildlife refuges to such an extent that only minor acreages have been purchased by the Service during the past five years. Larger proportions of these funds should be earmarked for the purchase of refuge lands in the future.

Management

One of the most pressing management problems is that of alleviating crop depredations by waterfowl in southern Saskatchewan and Alberta, and in California. Hazing by aircraft, scaring devices, permit shooting, and feeding have been used with some local success, but the affected areas have been so extensive that 'only the surface has been scratched' by the control efforts.

The draining of pot-holes in western Minnesota and in North and South Dakota has abated as a result of a change in policy by the U.S. Soil Conservation Service, but this remains as a continuing threat to the most important waterfowl breeding ground in the United States.

Many of the river basin programmes planned by the U.S. Corps of Engineers in the southern United States will drain tens of thousands of acres of overflow bottomland used by wintering Mallards and Wood Ducks. Conservationists should familiarise themselves with the recommendations of the Branch of River Basins of the U.S. Fish and Wildlife Service and then urge Congress to include these recommendations before approving any drainage project.

The state conservation agencies are to be commended for their extensive acquisition and development of waterfowl habitat during the past decade. Prior to World War II, only a few states maintained waterfowl refuges and public shooting grounds. Since the war, however, numerous states have acquired such areas for waterfowl. The acreage in state ownership now approaches that held by the U.S. Fish and Wildlife Service. Because of the large amount of waterfowl acreage being lost as a result of drainage, siltation, and industrial and real estate developments, it is hoped that state conservation agencies will continue an aggressive programme of land acquisition for waterfowl.

⁴ *Duck Stamp Act*. A law approved in March 1934 (at the time when the plight of waterfowl in America appeared desperate) requiring all persons intending to shoot waterfowl to buy a one-dollar stamp each year, in addition to their gun licences. According to the Act the receipts from the sale of the stamps are to 'be set aside in a special fund to be immediately and permanently available for the acquisition and improvement of inviolate sanctuaries for waterfowl, for law enforcement, and for study and research into problems of waterfowl management' (Albert M. Day: *North American Waterfowl*, p. 151, 1949). Duck stamps now cost two dollars.

Research

Two notable programmes in waterfowl research were initiated by the U.S. Fish and Wildlife Service during the post-war years: (1) the extensive appraisal of waterfowl populations and of production of young on the breeding grounds and (2) large scale banding of adult and young waterfowl on the breeding grounds. These two programmes have added valuable information to the knowledge of waterfowl and aided in their management in North America.

Intensive research on nesting waterfowl by members of the Delta Waterfowl Station,⁵ by Jerome Stoudt of the U.S. Fish and Wildlife Service at Redvers, Saskatchewan, and by biologists of Ducks Unlimited⁶ have supplemented the extensive breeding grounds surveys. In our opinion, however, there is a need for additional intensive research on nesting waterfowl.

An inventory of the wetlands of the United States has recently been completed by the Branch of River Basins of the U.S. Fish and Wildlife Service. This is an important contribution toward better land management for waterfowl because it points up the relative value of existing areas for waterfowl, and the areas most in need of acquisition. It is anticipated that the Branch of River Basins will continue to refine its wetland inventory data.⁷ It is hoped that eventually the waterfowl carrying capacity of every important water and marsh area will be evaluated.

Studies on two major diseases of waterfowl, botulism⁸ and lead poisoning,⁹ have produced some new and encouraging findings. Bell, Sciple, and Hubert (1955, *Jour. Wildl. Mgt.*, 19, 352-357) have contributed importantly to our knowledge of avian botulism by developing their microenvironment concept and establishing that *Clostridium botulinum* type C grows and produces toxin in immature forms of insect carcasses in distilled water. Evidence from intensive investigations by personnel of the Section of Game Research, Illinois Natural History Survey, has been interpreted to indicate that lead poisoning is less important as a mortality factor among waterfowl than was formerly feared.

During the fall of 1954 waterfowl biologists in every state in the Mississippi Flyway made bi-weekly estimates of waterfowl populations in their state. Upon compilation, the data provided much needed information on the migration of the waterfowl in and through the flyway. Among many values to be gained from this information may be mentioned one—that of providing for open seasons at the most judicious times.

It is believed that further investigations on the precise nature of crop depredations by waterfowl and techniques for the control of such depredations are also among the foremost research needs.

⁵ *Delta Waterfowl Station*: see pp. 74-79 in this Report.

⁶ *Ducks Unlimited*. A private organisation of duck hunters, who contribute substantial funds for restoring and improving breeding grounds, largely in the south of the prairie provinces of Canada, the nursery of a large part of the American duck population.

⁷ *Wetland Inventory*. This programme is analogous to that being undertaken by the Trust (of which 'Waterlog' is a part).

⁸ *Botulism*. A disease responsible for massive losses of ducks in late summer in some parts of America, and recently reported from the Camargue, but not found in Britain.

⁹ *Lead Poisoning*. In some localities in America where shooting from fixed butts ('blinds') has been practised for many years the accumulation of lead shot on the bottom in the vicinity is so great that ducks are liable to swallow sufficient pellets to produce toxic effects. (The shot are presumably treated by the ducks as if they were seeds, or perhaps small stones, which are habitually eaten to assist in grinding food in the gizzard.) This has not so far been reported in Europe, as far as we are aware, although the necessary conditions must exist on a great many flight ponds where ducks have been fed and shot for many years.