

REPORT OF THE COMMITTEE ON BIRD PROTECTION, 1965

OUR report for the year, September, 1964, through August, 1965, is presented herewith.

We wish to thank numerous persons and organizations for furnishing, very willingly, much information which is incorporated in this report.

GOVERNMENT ACTIONS

Law enforcement.—A noteworthy event in enforcement of the migratory bird laws of the United States was the arrest of 77 persons in 11 states who were charged with the sale of migratory birds. Resulting from investigations over a period of two and one-half years, most of the arrests were for sale of migratory game birds, but three cases in Florida and one in Illinois were for sale of live songbirds. Gratifying advances were achieved in cooperation between the United States and Mexican governments relative to migratory bird law violations by U. S. hunters in Mexico; 10 persons were arrested and fines totalling \$2,425 were levied.

A reinterpretation of the intent of the migratory bird treaty with Canada aided in the protection of birds in territories administered by the United States. Thus, 115 species were added to the list protected by federal law in all 50 states, the Commonwealth of Puerto Rico, and the Virgin Islands. Particularly important was the addition of many sea birds, such as shearwaters, petrels, boobies, pelicans, and terns, to the list. These had been specifically omitted from the Mexican treaty because they were considered fish-eaters. Federal protection is also given, for the first time, to such Hawaiian species as the Nene and Hawaiian Duck.

Regulation of importations.—Since late in 1963, the U. S. Fish and Wildlife Service has been reviewing the regulations governing the importation of exotic species of wildlife or eggs thereof. Numerous organizations, including the A.O.U., have been consulted and the Committee on Bird Protection (both present and immediately preceding membership) has devoted some time to the matter.

The final revision of the rules was announced recently by the Service. Under the heading of "General restrictions" the rules declare that, "Any importation or transportation of live wildlife or eggs thereof into the United States or its territories or possessions is deemed to be injurious to the health and welfare of human beings, to the interests of forestry, agriculture, and horticulture and to the welfare and survival of the wildlife or wildlife resources of the United States . . ." The rules allow the importation of wildlife, with certain named exceptions (in birds, the Rosy Starling, *Sturnus roseus*), for scientific, medical, educational, exhibitional, or propagative purposes and prohibit their release in the wild

except by authorization of the conservation agency having jurisdiction over the area of release. The importer need only file a written declaration of intent with the Collector of Customs at the port of entry.

Although we recognize the good intentions of all involved, some of us are concerned that injurious exotics ultimately will be released into the wild by accident, and that apparently beneficial species will be released intentionally without sufficient exploration into the potentials for adverse reaction to the new environment, with disastrous results. The only way to minimize the possibility of undesirable events seems to be more stringent regulation, by the federal government, of imports at the ports of entry. Accordingly, we drafted a resolution to that effect, which was read at the morning session of the A.O.U. Council on 23 August 1965 and was adopted by a unanimous vote of the members present.

Research and management.—The Government of Canada has proposed a National Wildlife Program, major elements of which include a Canada Wildlife Act and expansion of activity in support of migratory bird populations (including institution of a federal migratory bird hunting license) and of research needed for better management of wildlife. While most of the proposals concern management of migratory game birds, the program, particularly of the portion relating to the effects of pesticides on wildlife, should benefit all birds. Steady progress towards realization of the program is expected during the next several years.

Waterfowl management research of the U. S. Bureau of Sport Fisheries and Wildlife has now reached a point where it is possible, with data obtained through surveys and banding, to determine the rate of kill by age and sex groups and even the size of populations of a few species. Study of such data for the Mallard, Black Duck, and Canvasback suggests that, for populations at their present levels and at current rates of harvesting, kill by hunters is, to a large extent, additional to natural mortality, not substituted for it as in the case of some upland game birds.

The Montana Cooperative Wildlife Research Unit is conducting research on the population dynamics of the Golden Eagle. The Denver Wildlife Research Center of the Bureau of Sport Fisheries and Wildlife is developing an aerial survey method for estimating the population trends in this species, which was recently accorded protection by federal law, along with the Bald Eagle.

Studies were initiated by the Migratory Bird Population Station of the Bureau of Sport Fisheries and Wildlife to develop a method for deriving an index of annual abundance of all breeding species of birds in the United States. Hopefully, a cooperative survey involving many uniform sample roadside counts over randomly selected routes will be effective. This would make possible, for the first time, a reliable appraisal of the status

of all such birds and permit correlation of changes with many factors, such as pesticide spraying, that may affect the nation's birds.

WATERFOWL PROSPECTS

Water conditions in the Canadian prairie provinces improved substantially in 1965. Unfortunately, due to the droughts of several preceding years and a heavy hunting kill in Canada and the United States in the fall of 1964, the breeding populations of ducks were reduced to the lowest levels since systematic surveys began almost 20 years ago. Recently issued data reveal that the total breeding population of ducks in 1965 was 8 per cent below that of the previous record low of 1962, with mallards being 6 and pintails 11 per cent lower than in that year. Adverse weather delayed and limited the success of early season nesting particularly. Hunting regulations for the United States are being formulated with a view to allowing a material increase of next year's breeders. In the Canadian prairie provinces, the opening of the hunting season will be about one week later than in 1964 (reducing the open period by one week) and the daily bag limit for Mallards is reduced from four to three.

FLORIDA EVERGLADES

In its report of the past three years, your Committee has summarized the status of bird life in this unique, important habitat. Regrettably, the combination of drought and lack of available water continues to damage the environment and its wildlife seriously. Dependent as they are on flow of fresh water from the north, which has been almost completely cut off by flood control dikes, the marshes of the southern Everglades have deteriorated seriously. Populations of all water birds which feed therein, including Limpkin, Anhinga, White and Wood ibises, all of the small herons, and many smaller forms, have declined rapidly. Most of these species are widespread and their survival is not threatened. The major exception is the Wood Ibis, the U. S. population of which depends on the health of colonies in southern Florida. Since 1960-61, production of young has ranged from none to about 10 per cent of normal. William B. Robertson, Jr., Park Biologist in the Everglades, considers that the Wood Ibis population is close to, or has already reached, the danger limit.

Failing to reach an agreement with the numerous agencies that block the flow of water into Everglades National Park, the Interior Department obtained Congressional approval to spend \$287,500 of available funds to develop an emergency water supply. From a collecting sump to be dug into limestone, pumps will force water through a half mile of pipe to the Shark River Slough. This is merely an emergency measure; a perma-

ment solution can probably only be the release of water from the central and southern Florida Flood Control Project. If the water shortage is not corrected, the birds will be gone within the next decade.

PESTICIDES

Since problems dealing with pesticides were analyzed in some detail in several immediately previous reports, only a few generalized comments will be offered here. Among the outstanding continuing problems are: (1) widespread distribution of persistent hydrocarbons into the most remote areas (detected in penguins in the Antarctic); (2) complicated food-chains and transfer mechanisms by which this distribution is accomplished; (3) continued massive kills of fishes and other organisms in polluted waters; and (4) still unsolved implications of pesticide residues in the eggs, young, and adults of predatory and aquatic birds.

Despite these ominous signs, progress in reducing or forestalling further damage has been discouragingly slow. In general, recommendations of the President's Science Advisory Committee have not been heeded or have failed to achieve constructive action. Many public administrators still seem to be unaware of the hazards in the pesticides they recommend. For example, research at six major universities has disclosed high bird mortality following the spraying of elms, yet officials at these universities continue to ignore or discredit the findings. It is hard to understand why so many public officials are still "disbelievers."

Some progress has been achieved, however. Rudd's *Pesticides and the living landscape*, a sober, thought-provoking analysis of some of the ecological consequences of widespread alteration of the environment by pesticides, has been published. Another annual report of the Fish and Wildlife Service, describes in detail some results of its intensified and broadened research program. Further findings have been made on secondary poisoning in predatory birds, including gulls in the Great Lakes and hawks and owls in Great Britain. A thorough, three-year investigation by a research team at Dartmouth College and a briefer study at the University of Massachusetts supplement and confirm earlier findings on bird mortality resulting from Dutch elm disease programs conducted at Princeton, the universities of Illinois and Wisconsin, and Michigan State University. Also, at the time of this writing (early July, 1965) a number of leading research workers in this country and abroad were assembling in England for a two week conference on pesticides.

Because it is so widespread, uses high concentrations of DDT, and is carried out in areas where there are often high concentrations of susceptible birds, Dutch elm disease "control" continues to be our most destructive program. By comparison, the more severe fire ant control program was

of limited duration; the Japanese beetle program, also highly destructive to wildlife, to date has been rather limited in acreage; and other control programs (of the gypsy moth, mosquitoes, and cereal leaf beetle) employ less toxic materials or safer methods of application. Moreover, since elms are not of great economic value in commerce, federal and state funds generally are not available for research, and control programs are generally left up to communities. Only recently have university research teams seriously undertaken these problems.

In spite of the pessimistic tenor of these remarks, however, some real progress has been made during the past year and the outlook for the future is not altogether hopeless.

BIRD CONTROL

Most of the techniques described in the two previous reports of this Committee have been subjected to further study and testing. The U. S. Fish and Wildlife Service now has cooperative arrangements with various states to study local depredation problems, and several universities have initiated research on control.

In spite of continued refinement and perfection of control methods and development of new techniques, economic problems with birds continue. In fact, as our increasing population requires greater production of food and other economic goods, conflict with birds will probably increase. Avian-borne diseases become even more serious and maximum production of high quality goods is hindered by certain birds. The U. S. Public Health Service, through its Communicable Disease Center at Atlanta, Georgia, has a well organized program for the study of arboviruses, including detailed studies of North American birds wintering in the tropics. Methods of repelling, or reducing, concentrations of nuisance birds in suburbs, orchards, and grainfields are subjects of continuing studies at federal, state, and local levels.

Some progress has been made in alleviating bird problems at airports, and with terns and gooney birds on Midway Island's Naval Air Station. At the latter, levelling the dunes along the runways and experiments in elimination of nesting sites have helped, without killing the birds, to reduce, but not entirely prevent, the hazard and damage to aircraft.

Commendably, in these studies on bird control, considerable emphasis is placed on long-range projects and the collection of useful biological data. But workers in the field are besieged by demands of farmers and orchard owners for an immediate solution to their problems. However, as emphasized last year, more biological data must be gathered before we can effectively solve the problems.

RAMPART DAM

A year ago, we summarized the losses of wildlife which will occur if this huge impoundment is created on the Yukon River. In terms of waterfowl breeding, the flooding would cancel the effects of the recent acquisition of wetlands in the northern prairie states. Although the economic advantage of hydroelectric power is dwindling as the cost of atomic energy is reduced, the Rampart Dam project is being promoted more vigorously than ever. Two studies are under way in which the effects on wildlife are receiving special consideration. By request of the U. S. Department of the Interior, the National Academy of Sciences is reviewing the wildlife section of the three-volume report on the project issued by the Department in January, 1965. A second, independent survey, financed by the member organizations of the Natural Resources Council of America, is paying particular attention to the probable effects of the impoundment on waterfowl nesting. The reports of these two investigations may be available late in 1965.

RARE AND ENDANGERED SPECIES

A growing public interest in preventing any more wildlife species from becoming extinct has culminated in passage by Congress in 1965 of The Land and Waters Conservation Act. This act authorized the development of a fund from public land use fees, and its expenditure in part for acquisition of land to preserve wildlife species in danger of extinction. These events have caused government agencies to focus attention on endangered species. The Bureau of Sport Fisheries and Wildlife appointed a committee from its staff to select a list and prepare data sheets on vertebrates in the United States, the Commonwealth of Puerto Rico, and the Virgin Islands in danger of extinction, or so rare that they could become endangered if present conditions affecting survival became worse. These lists and data sheets were circularized for advice to over 300 interested persons and organizations. The list, after revision, included 34 birds considered as "endangered" and 16 as "rare." The data sheets contain such information on each species as present and former distribution, status, reasons for decline, protective measures already taken, and measures proposed. It is expected that the information will serve as a guide for the Bureau of Sport Fisheries and Wildlife and other federal and state conservation agencies, and for private organizations in setting priorities, planning acquisition of refuge lands, and other protective measures.

One of the important facts brought out very forcefully by the data sheets was the lack of information on many species necessary for remedial action. This situation was brought to the attention of the Con-

gress, which made an emergency appropriation of \$350,000 to enable the Bureau to start a research program specifically designed to aid rare and endangered wildlife species. Slated for priority attention in research on distribution and ecology are such extremely endangered forms as the Florida Everglade Kite, Ivory-billed Woodpecker, Bachman's Warbler, and a number of the Hawaiian endemics.

Certain accomplishments in the protection of rare and endangered bird species during the past year should be mentioned.

Great White Heron.—An aerial count covering the entire range (Florida Bay and the entire Florida Keys west to Marquesas Keys) in February and March, 1965, revealed 2,100 individuals, of which approximately 1,300 were in Everglades National Park and most of the remainder in the national wildlife refuges in the lower Keys. Park Biologist William B. Robertson, Jr., knows of no evidence that this rare heron was ever more common than it is now.

Aleutian Canada Goose.—Introduced Arctic foxes are being eliminated from Kiska and Agattu islands of the Aleutian Islands National Wildlife Refuge preparatory to re-establishment of a breeding population of the endangered Aleutian Canada Goose on these former breeding islands. Stock being reared from goslings obtained on the only known remaining breeding area, Buldir Island, will be used to repopulate the former range.

Hawaiian Duck.—The Hawaii State Department of Land and Natural Resources, with funds from the World Wildlife Fund, initiated a special ecological study of this endangered species and a propagation program.

Nene.—Ecological studies and captive rearing of this endangered goose under grant from the federal government continued. Stock reared both at the Hawaii state game farm and at the Severn Wildfowl Trust at Slimbridge, England, was liberated on the islands of Hawaii and Maui. Success of re-establishment of a population on the latter island is still in doubt.

California Condor.—An intensive study of the abundance and limiting factors of the endangered condor by Ian and Eben McMillan, sponsored by the National Audubon Society and National Geographic Society and directed by Dr. Alden H. Miller, was completed. This study substantiated much of Karl Koford's study of ten years' previous, but indicated a drop in population from about 60 to about 40, a greater significance of illegal shooting, and less importance of food shortage as limiting factors. The U. S. Forest Service, which administers the land where the condor breeding areas are located, is currently modifying its management plan for the 53,000 acre Sespe Wildlife Area to incorporate, to the extent possible, the recommendation of the newly formed Condor Advisory Committee composed of the President of the National Audubon Society, the Director of the Museum of Vertebrate Zoology, University of California, and the Director of the California Department of Fish and Game.

Florida Everglade Kite.—The approximately 15 birds, thought to be the total remaining, have taken up residence on the Loxahatchee National Wildlife Refuge in southern Florida. During the nesting seasons of 1964 and 1965, portions of the refuge totaling approximately 5,100 acres, including specific sites known to be utilized by the kites, were shut off from the public and closely patrolled.

Attwater's Greater Prairie Chicken.—The World Wildlife Fund and Nature Conservancy have raised a down-payment towards acquisition of about 3,500 acres in

Colorado County, Texas, most of its original prairie, and with a population of 300 to 400 of the fewer than 1,000 remaining Attwater's prairie chickens.

Masked Bobwhite.—Seymour and James Levy of Tucson, and Steven Gallizioli of the Arizona Game and Fish Department located a small population of Masked Bobwhite in Sonora in an area that, for some reason, had been free from cattle. They interested the owners of the land in retiring from grazing, and Governor Encinas in protecting from hunting, the 1,000 acres where the quail were seen. The Arizona Varmint Callers Association of Phoenix donated the \$1,200 required to build a cattle-proof fence around the Masked Bobwhite area.

Whooping Crane.—This most publicized of the endangered species enjoyed the most successful year since records have been kept; 32 adults and 10 young of the year spent the winter on or near the 47,200-acre Aransas National Wildlife Refuge on the Texas coast. A 98-acre, fenced area had been planted to wheat, corn, and other preferred grains. Thus the cranes did not have to travel away from the refuge as frequently as in the past. An injured young whooper was rescued on the breeding grounds by the Canadian Wildlife Service. It was flown to the endangered species propagation station of the Bureau of Sport Fisheries and Wildlife at Monte Vista, Colorado, where the damaged wing is being treated.

Eskimo Curlew.—A note in *The Auk* (82: 493–496; see also 82: 686, 1965) by F. M. Weston and E. A. Williams summarizes a number of observations (three hitherto unpublished) of this supposedly extinct species. At least four of the records were made since early in 1959; in all except one case the bird or birds were seen in spring migration on the Texas coast. Additionally, we have a published record of a specimen taken in fall migration on Barbados and sight records for the coasts of New Jersey and South Carolina. The species is still extant.

Puerto Rican Parrot.—The U. S. Forest Service, through Dr. Frank H. Wadsworth, Director of the Institute of Tropical Forestry, is cooperating with the World Wildlife Fund and other groups in a proposed study of the needs of this endangered parrot, which is thought to number fewer than 200 birds. As soon as financing can be arranged, the study will be expected to define habitat needs and special protective measures required. Provisionally, it is thought that control of rats, installation of nest boxes, and stocking of food plants are needed.

American Ivory-billed Woodpecker.—Surveys initiated by the Bureau of Sport Fisheries and Wildlife in Louisiana to locate birds and habitat in preparation for refuge land acquisition failed to reveal a single ivory-bill. Loss of fully mature forest required for ivory-bill habitat was found to be virtually complete in Louisiana. Although no Ivory-billed Woodpeckers are currently known to be on national forests, the U. S. Forest Service has a policy to leave uncut all senescent and dead trees in the forests as a possible source of food for this woodpecker.

Puaiohi, Kauai Oo, Kauai Akialoa, Kauai Nukupuu, and Ou.—These endangered Hawaiian endemics, which are dependent on the undisturbed, luxuriant rain forest for survival, have been benefited by the establishment, by the state, of the 10,000-acre Alakai Swamp Wilderness Preserve on the island of Kauai. This preserve includes the most important remaining area of habitat for these species.

Kirtland's Warbler.—In 1964 the first 500-acre block of cut-over jack pine on the U. S. Forest Service's 4,010-acre Kirtland's Warbler Management area was "control-burned" to develop suitable conditions for nesting cover. The Forest Service has also obtained the help of Dr. N. L. Cuthbert of Central Michigan University to study the possible need for controlling the cowbird in Kirtland's Warbler nesting areas. The Florida Audubon Society has attempted to stimulate interest in protecting areas

in the Bahama Islands where wintering individuals of this warbler have been found recently.

Dusky Seaside Sparrow.—Introduction of fresh water into salt marshes at Merritt Island for mosquito control, in connection with rocket launching activities at Cape Kennedy, is damaging the habitat required by this endangered species.

MORTALITY AT CEILOMETERS AND TOWERS

Bird kills at ceilometers, television and radio towers, and other high structures provide a wealth of data on migration and other aspects of ornithology (as shown by Tordoff and Mengel in 1956, and by others subsequently), but there is increasing concern about the possible effects on bird populations. A cursory survey of some of the literature of the past ten years (1955–64) revealed that about 300,000 migrants of more than 150 species have been *found* killed at television towers and ceilometers in eastern North America. This figure, impressive in itself must represent only a small fraction of the actual kill. Most of the published mortality has been reported from only five states, Kansas, Wisconsin, Tennessee, Georgia, and Florida, where a few observers, such as Herbert L. Stoddard, Sr., and Amelia Laskey and her associates, have made conscientious efforts to check potential “kill-sites” in their areas. Apparently, very few towers are checked daily and thoroughly during the migration seasons.

In the past decade, the nature and extent of the problem has changed considerably. Earlier, the heaviest mortality was reported from ceilometer stations, but once they were alerted, operators helped greatly to reduce the kills by turning off the beams when birds were seen in the lights. More recently, the ceilometers have been modified and made less lethal. New ultra-violet instruments are apparently much less of a problem to migrants.

Unfortunately, the hazard at towers is growing. In 1952, of the 100 television stations in the United States, 50 had transmitter towers 500 feet or more in height, and fewer than a dozen reached 1,000 feet. By 1964, according to the *Broadcasting Yearbook*, the number of stations had climbed to about 650, of which over 400 have towers exceeding 500 feet; about 200 are over 900 feet tall, and 50 exceed 1,200 feet, including two of 1,750 feet, in Georgia and Tennessee. In addition, there are many towers less than 500 feet tall which are set on high terrain. There are also over 5,000 commercial radio transmitters in the country, some of which have huge transmitter towers. Almost all of the states have TV towers over 500 feet tall, and a number of eastern and central states have 20 or more such towers.

This network of hazards extends throughout the world (about 4,200 television stations in 1964). In the new world, in addition to the U. S. sta-

tions, there are about 75 in Canada, and at least 125 in Central and South America. As of 1965, the Federal Communications Commission has allocated assignments for about 1,800 television stations (three times the present number) in the U. S., and the number of towers will undoubtedly increase greatly in the coming years unless new transmission systems are developed.

The most complete account of bird casualties at a TV tower is Mr. Stoddard's study of a tower in Leon County, Florida. With considerable annual variation, that tower claimed an *average* of at least 2,500 birds per year between October, 1955, and July, 1961. If all U. S. towers of comparable height were as lethal, the annual toll for the country would amount to more than a million birds a year. Some towers are probably less lethal than the Leon County structure, while some cause even greater mortality. Dr. Charles Kemper and students of the University of Minnesota picked up over 10,000 migrants at one tower in Wisconsin in two consecutive nights, and this was not a full tally. The kill on just one of those nights was probably close to 15,000 birds.

No one can assess the effects of these losses in terms of population and species survival. In general, the kills appear to reflect the species composition of the night-migrant fauna for the locality and season of the kill. This does not preclude the possibility that some species are more susceptible to this kind of destruction than others. Those that suffer the greatest mortality are common species that have broad ranges. Thus, the Red-eyed Vireo, Ovenbird, Tennessee Warbler, Magnolia Warbler, Palm Warbler, Yellowthroat, Catbird, and *Hylocichla* thrushes are frequently high on the list of casualties. The probability of a catastrophic kill of birds of some relict or rare species such as Bachman's or Kirtland's warblers is inestimable, but the chances are increasing every year as more towers go up.

It has been argued that the migrant mortality at towers is insignificant, by comparison with the total number of birds migrating, but we have added a new mortality factor of unknown dimensions to the population dynamics of a large number of species. While most of the kills are associated with inclement weather, there is now ample evidence that kills occur on clear nights, and even in the daytime. Some data suggest that birds are attracted to the lights; if so, how far are they attracted? What per cent of a given population is exposed to these traps and what per cent of those exposed survive? Presumably a Red-eyed Vireo that nests in eastern Canada is more likely to encounter a tower than a vireo that nests in Kentucky. Clearly, there is a multiplicity of problems involved, and our knowledge of the phenomenon is far too slight for us to make generalizations about the full effects. Underlying everything is the question of selection and

survival. What traits may the towers be selecting against, and how, in turn, may these affect survival?

Every effort should be made to encourage research in this area from the viewpoints of both biologist and engineer.

WINTERING HABITATS IN LATIN AMERICA

The rain forests of central and northern South America, on which many birds depend for winter habitat, are being destroyed to support a large and rapidly increasing human population. Many resident birds and at least 100 migratory species, including practically all of our warblers and many other insectivores, depend on the Central American (and Caribbean) ecosystems, while more than 300 persons per square mile in El Salvador and Haiti are converting virgin woodland into corn and bean fields. Some recent studies, as at Hawk Mountain, Pennsylvania, indicate an alarming decline in numbers of migrating warblers within the past few years.

Without reducing conservation in the northern hemisphere, we need to stress studies of the mortality of birds during the migratory and winter phases of their lives. It will avail nothing, of course, to reserve breeding habitat for birds on this continent if they are to be deprived of habitat and protection from shooting on their wintering grounds and migration routes.

Apparently there is very little concrete information on this problem, but the hypothesis of danger is sufficiently strong to warrant concern. At the suggestion of Dr. William Vogt of the Conservation Foundation, the Smithsonian Institution is laying the groundwork for an international conference on the subject. The meeting, to be held at Washington in the spring of 1966, would depend heavily on the cooperation and advice of Central American ornithologists. The Committee on Bird Protection recommends that the American Ornithologists' Union extend its hearty support to the principle of the conference, and urge the participation of those in its membership who can contribute to its purposes. A resolution to this effect was adopted, by unanimous vote of the members present, by the A.O.U. Council on 23 August 1965.

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