

ANNUAL REPORT, COMMITTEE ON CONSERVATION¹

THIS is the third year that the same committee has prepared this report. Therefore, the committee has attempted to avoid all possible duplication with its 1967 and 1968 reports. Omission from this year's report does not indicate lessened importance of omitted topics, but only that there is little new to add.

PUBLIC AWARENESS

The 1968 report began by emphasizing the increasing public awareness of environmental conservation problems. This awareness has increased even more rapidly in the past year. A unique colloquium by both houses of Congress was held to consider establishment of a national policy for the environment. Senator Gaylord Nelson's "Resources Conservation and Environmental Quality Act of 1969" (S 1752) is an example of the deluge of legislative bill submissions to establish everything from a government department to appointed commissions to control our environment. Even the Amalgamated Meat Cutters and Butcher Workmen of North America, AFL-CIO supported legislation to protect vanishing species, and the United Auto Workers united with three dozen other groups to encourage increased funding for water pollution control. A National Trails System and the Wild and Scenic Rivers enactments all support this trend. The Wildlife Society recently published its first series of position statements on some of our environmental problems. A.O.U. members may obtain copies from the Society's Washington office.

Even though this awareness increases, many problems still exist, and more arise almost daily. Among these is federal funding. Congressional and presidential mandates to hold the line on spending have been particularly hard on natural resources agencies such as the U. S. Bureau of Sport Fisheries and Wildlife. Addition of new responsibilities such as Wilderness Act administration to certain of the Bureau's refuges, and need to meet increasing public service demands only compound the problem. The Division of Wildlife Refuges, with many of its units virtually on a standby basis, has established a new set of objectives intended to offset such conditions through better funding produced by a better public image than it now possesses.

All facets of environmental pollution are coming to the fore. Air, water, soil, and noise pollution, solid wastes, traffic congestion, and ugliness of the environment are now the deep concern of many people. Many of these problems and their solutions are closely related ecologically to birds

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and other wildlife forms of importance to members of the Union. The 1969 Santa Barbara Channel oil episode made it obvious that A.O.U.'s 1968 resolution concerned with oil pollution in Alaska should be broadened to apply nationally and even internationally.

Infiltration of all parts of our environment by biocides and other chemicals continues. The "Research" section of this report gives specifics on just how critical the situation really is.

Encroachments.—The developing plans for the Miami jetport and the growing battle by conservationists may go far in determining not only the fate of the unique wildlife in Everglades National Park, but in establishing a national policy to cope with similar future conflicts. The Minnesota Chapter of The Wildlife Society joined with others to prevent relocation of the Minneapolis airport where it would destroy the usefulness of a wildlife refuge. As they do almost everywhere in North America, human population pressures against San Francisco Bay continue. Congressman Waldie (California) has pointed out that effects of California water development projects will be devastating to the Bay.

One of the greatest infringements upon the national wildlife refuge system continues in the name of national defense on Amchitka Island, a $4\frac{1}{2} \times 42$ mile island, of the Aleutian Islands National Wildlife Refuge. The fragile tundra habitat of this and other islands, badly scarred by World War II buildings, roads, and runways, was just beginning to fade into the tundra, when Amchitka was selected as a site for underground testing of nuclear devices. One was tested in 1965 through Operation Long-Shot and since that time the Atomic Energy Commission (AEC), with its subcontractors, has invaded the island in force.

According to the *Anchorage Daily News* for July 8, 1968, four tests are planned in the series which probably will last into 1972. The weapons to be tested are too powerful for the AEC's Nevada desert test site. Bureau and Alaska biologists have been working closely with AEC staff to minimize the inevitable damage produced by an operation of this type.

Improved crop production capability, a continuing objective of agriculture and related industry, is another form of encroachment. The recent development of a new corn variety that will do well north to Winnipeg, Manitoba forewarns of future agricultural expansions detrimental to wildlife, especially waterfowl.

Additions.—Natural environment protection in the past year was highlighted by establishment of Redwoods and Northern Cascades National Parks, a marine national monument in Florida, two recreation areas in Washington, and one at Flaming Gorge Reservoir in Utah-Wyoming. Wilderness areas were established in wildlife refuges and national forests. Mason Neck NWR on the Potomac in Virginia gave added protec-

tion to our national emblem, the Bald Eagle, and land acquisition near the Pauxent Center will facilitate the program of the Bureau's Endangered Wildlife Research Station. Tremendous additions to the National Wildlife Refuge system in Alaska were the Cape Newenham NWR (265,000 acres) which has an outstanding assortment of Alaskan wildlife, and expansion of the Clarence Rhode NWR by more than a million acres to benefit many waterfowl species.

RESEARCH

Research programs previously reported by this committee continue in all major areas, such as on effects of chemicals on bird reproduction, on migration studies, and on the most appropriate control methods to use on species detrimental to man. Crucial long-term research is needed on supposedly abundant species such as grouse and pheasants, and expanded research on relations of wildlife habitat and fire would be helpful.

Lead poisoning research.—Cooperative studies by the Bureau and the Sporting Arms and Ammunition Manufacturers' Institute have been aimed at eliminating much lead poisoning caused by waterfowl ingestion of spent shot. Testing has shown that lead shot cannot be made safe by coating with plastics or inert metals, nor have alloys of lead with other metals proved safe. The results of the testing of soft iron shot in No. 4 size suggests that at ranges of 30 to 65 yards, ballistic qualities of iron shot compare favorably with the performance of lead shot. If industry can find economical methods of producing soft iron shot, there is hope of eliminating a long-standing cause of substantial waterfowl mortality.

Chemical pollution and birdlife.—The accumulating mosaic of research on pesticides came dramatically into focus during the year. The amazing change in eggshell thickness discovered in Britain by Ratcliffe (*Nature*, 215: 208, 1967) was found by Hickey and Anderson to have also occurred in Massachusetts and California (*Science*, 162: 271, 1968). The Peregrine Falcon, Bald Eagle, Osprey, and Herring Gull were shown to exhibit these changes (in some but not all regions), and a direct correlation was established between the eggshell changes and DDE, a metabolite of DDT that has become a universal pollutant of the world's environments. This cause-and-effect relationship was shown experimentally for Mallard duck eggs by Heath, Spann, and Kreitzer (*Nature*, in press), and for American Sparrow Hawks fed DDT and dieldren in combination by Porter and Wiemeyer (*Science*, 165: 199, 1969). The museum data investigated by Ratcliff and Anderson clearly indicate that this pollution reached a critical level in 1947. The great raptor population crashes on two continents have proved to be associated with the use of DDT, its movement from one continent to another, and its accumulation and concentration at the top of certain ecosystems.

Fish-eating birds similarly affected include pelicans, cormorants, and Herring Gulls in certain regions. Critical shell changes in Brown Pelicans were traced by Anderson and Hickey back to at least the mid-1950's in Texas and the early 1960's in California. Residue levels in White Pelicans were found by Anderson et al. to be low, while the shell changes in the Double-crested Cormorant were correlated with DDE and a group of industrial pollutants called PCB's. One of the most startling findings was the discovery by Risebrough et al. (*Nature*, 220: 1098, 1968) that the Procellariiformes off the California coast are highly contaminated. Some of these birds nest in the Southern Hemisphere, and their present reproductive success needs to be checked at once. Productivity of the Bermuda Petrel has been found by Wurster and Wingate to be steadily declining, and the fate of this species is now in doubt (*Science*, 159: 979, 1968). The entire population of *Falco peregrinus anatum*, restricted to the region from mid-Canada to northern Mexico by C. M. White's description of the Arctic race *tundrius*, continues to shrink and may well become extinct in another decade.

The discovery by Risebrough et al. (*Nature*, 220: 1098, 1968) that PCB's have a roughly 1:1 ratio to DDE in some ecosystems on the Pacific Coast have raised several perplexing problems in pollution ecology. There seems to be little doubt that these industrial pollutants are biologically active compounds, but their precise quantification in the environment has not yet been achieved, and their critical effect on bird populations remains to be determined. At low levels in White Pelicans, they were not correlated with eggshell changes (Anderson et al., op. cit.). Research on ecological effects of these compounds is critically needed.

Both Arizona and Sweden ordered temporary bans on the use of DDT, Michigan is preparing to reduce its use, and a number of states have conducted hearings on the subject. While there are many indications that the use of DDT in the United States may continue to be curtailed, it seems likely that the World Health Organization will continue to work for its application against disease vectors in the tropics where tonnages are now used annually, often with the help of U. S. foreign-aid programs. The outlook for avian species near the top of aquatic ecosystems in the tropics must be fairly pessimistic. In the meantime, the contribution of DDT to the world's population explosion will continue unabated.

MIGRATORY BIRD POPULATION

Analysis of spring populations of migratory game species, the rails, gallinules, Woodcock, snipe, Band-tailed Pigeon, and doves, show little change. White-winged Doves did have a slight decrease.

Early reports on the 1969 breeding bird index for the North American waterfowl population are optimistic with an estimated increase of about

12 per cent over the 1968 index data. This index shows over 36 million ducks this year. Major increases occurred in the Mallard, Pintail, Baldpate, Shoveller, Blue-winged Teal, Redhead, and Scaup. The numbers of Gadwall and Green-winged Teal dropped significantly. Although goose production will likely be poor in the eastern Arctic, it should be about the same as last year continent-wide because of successful breeding in the MacKenzie and Alaska regions. Eastern flyway regulations will not be affected because of an excellent holdover of Canada Geese from last year.

RARE AND ENDANGERED SPECIES

Brown Pelican.—By far the most disturbing news regarding the decline of threatened wildlife species in the continental United States concerns the California Brown Pelicans nesting on offshore islands along the Pacific coast of California and Mexico. Two offshore island nesting colonies in California have suffered almost complete reproductive failure, the thin-shelled eggs being crushed by incubating parents. Such losses cannot be sustained for long, and apparently this race of Brown Pelican, or at least its northern population segment, may be on the brink of disaster.

Trumpeter Swan.—This swan was officially removed from the Bureau's "Redbook" of rare and endangered species this year. Its status now appears secure provided existing habitats can be maintained. In August 1968, 2,844 birds were actually seen during an aerial survey of most of the Alaska population, which perhaps numbered 3,500 to 4,000 birds in the fall of 1968. Other surveys indicated over 900 in the other states and about 100 swans in Canada, mostly in Alberta. The Bureau is continuing with its transplanting program to insure against a one-site catastrophe decimating the population of this swan.

Osprey.—The Osprey population in certain portions of North America is in serious jeopardy. Therefore the recently-announced plans of the U. S. Forest Service for an Osprey management area at Crane Prairie Reservoir in Deschutes National Forest in Central Oregon was of some importance. In 1969 there were 44 active nests at Crane Prairie. Ironically, flooding by waters of this Bureau of Reclamation Reservoir killed the trees that now provide habitat attractive to the Osprey.

Kites.—A spring census of the Florida Everglade Kite by Paul Sykes, Jr., Bureau biologist, revealed more than 90 kites. This about doubles the numbers counted in 1968 which, in turn, about doubled those seen in 1967 when 22 were counted. Some observers believe this increase represents improved observational coverage while others think that kites may be moving in from previously unobserved habitat. Most observers agree that it probably does not represent a drastically increased reproductive success rate.

Masked Bobwhite.—Roy Tomlinson, Bureau biologist, under a permit

from Mexico, obtained 36 Masked Bobwhite in the State of Sonora to increase the genetic diversity of stock being produced at Patuxent. All these quail survived their quarantine period and had begun to lay eggs the last week of May.

Whooping Crane.—Whoopers showed a substantial increase last fall with the appearance at Aransas NWR of 44 white-plumaged birds and 6 chicks. Of 10 eggs Biologists Ray Erickson and Glen Smart took to Patuxent in 1968, 7 were reared successfully, swelling the captive flock at Patuxent to 12. Add to the pair at San Antonio Zoo and another 4 at the Audubon Park Zoo in New Orleans, the total population of Whooping Cranes reached 68 in March 1969, compared with 15 counted in 1941. In late May 1969, the two U. S. biologists, together with Canadian Wildlife Service biologist Ernie Kuyt, made their third visit to the Whooping Crane breeding grounds in Wood Buffalo National Park, NWT and obtained 10 eggs, one each from 10 clutches of two eggs. One of the eggs was determined at the time of its removal from the nest to be nonviable which candling and examination of the egg's contents confirmed later. The other nests contained only single eggs which were allowed to remain, bringing to 12 the number of eggs being incubated by a record dozen pairs in the wild.

Hawaiian species.—This spring the Bureau's regional office in Oregon issued an attractive brochure dramatizing the plight of threatened Hawaiian species. Although there has been preliminary examination and delineation of habitats needed to perpetuate Hawaiian endemic wetland species, the destruction of their environments for economic purposes continues and little progress toward setting aside the most important ones can be reported. The development of a veneer production industry on the island of Hawaii is being watched for possible adverse effects upon endemic forest-dwelling birds.

Dusky Seaside Sparrow.—Measures to restore *Distichlis spicata*, *Spartina bakeri*, and other marsh vegetation required by this sparrow were undertaken last spring by the Bureau at Merritt Island NWR, Florida. It remains to be seen whether or not the small population there can now recover. Farther inland, where the main numbers of this species still persist in Brevard County, drainage operations were—according to H. W. Kale II—almost feverishly undertaken last spring in the best remaining habitat. Speculative real estate values in this region, even for wetlands, are sky high, and there is no plan to save any St. Johns marshland for the Dusky. A conference on this sparrow was held at Titusville last March.

THE "REDBOOK"

The Bureau's "Redbook" entitled "Rare and Endangered Fish and

Wildlife of the United States," first published in 1966, has been revised in the light of added information provided by many cooperators and re-issued in 1968. The 1968 edition shows threatened species and subspecies of wildlife increased from 76 to a present total of 89. Ten species or subspecies have been added to the list, including three species thought to be extinct, namely, the Puerto Rican Plain Pigeon, the Molokai Creeper, and the Maui Nukupuu.

MISCELLANEOUS

Your committee distributed many copies of the two A.O.U. conservation resolutions passed at the 1968 meeting, and it also handled numerous pieces of correspondence on a variety of conservation matters. These ranged from raptor laws in Montana to shell dredging in Texas. Several responses were received from members of Congress and from government agencies on the oil spillage resolution.

CONCLUSIONS

The key issue is that of the conservation ethic centered around a quality environment for man and the components of his natural world. Optimistically, it might appear that the environmental conservation snowball is at the top of the hill, ready for an easy push to the downhill side. While the points outlined in the first section of this report could support this view, those knowledgeable in the ways of the human animal know that self-centeredness, indifference, greed, materialism, short-term economic gains, and an exploding human population will continue the uphill push of the environmental conservation snowball.

Therefore your committee can do no more than continue its annual plea to all A.O.U. members, and other ornithologists and conservationists, to emerge from their own specialized spheres of interest and become active participants in their own communities in the continuing battle for preservation and improvement of our existing environment. We suggest that members join the American Institute of Biological Sciences to receive its science and conservation issue *Newsletter* or request placement on the free mailing list of *Conservation News* published by the National Wildlife Federation. Either will help keep ornithologists well-informed.

The committee will welcome comments and suggestions about conservation issues.

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