

ANNUAL REPORT OF THE CONSERVATION COMMITTEE

Concern for major conservation issues can be traced to an early date in the Wilson Ornithological Society. In 1898, President R. M. Strong stated, "I wish to encourage to the fullest extent the active cooperation of the members in the various movements toward the protection of birds . . ." (Strong, 1898). An editorial in 1910 emphasized the importance of habitat to birds and that ecological bird studies had been too generally neglected. This was probably among the first efforts to stress the relationship and importance of suitable habitat for birdlife.

The Society took definite action to encourage maintenance of wildlife habitat at its fourth annual meeting (Wilson Ornithological Club, 1917), when it voted to urge the County Commissioners to establish Bird and Wildlife Havens in the prospective Outer Park Forest belt of Cook County, Illinois.

Conservation issues continued to face the Society periodically and, in 1925, the editor suggested opening a new section on conservation in *The Wilson Bulletin* (Wilson Ornithological Soc., 1925). To be included were items of immediate concern to people interested in birds, as well as topics involving the perpetuation of birdlife for the future. The birth of the Conservation Committee within the Wilson Ornithological Society dates from that year. Subsequently, major conservation issues were brought to the Society through editorial statements and committee reports.

Of the historical reports, two seem worthy of special attention. The 1939 statement spelled out responsibilities of the Conservation Committee (Pirnie, 1939). Almost 20 years later, T. G. Scott emphasized the responsibilities of ornithologists to the future (Scott, 1958). The common theme in these two reports is that members of the Society, within each of their localities as well as in the entire range of birds, consider expending some well-directed energy in taking action for the welfare of birds. Of course, such actions could take a variety of forms.

The objectives of this 1963 report are twofold: (1) to provide background information on recent conservation accomplishments relating to birdlife and (2) to call attention to current items on which Society members could add some energetic effort. As the human population increases, the use of our renewable natural resources becomes a more and more urgent problem.

We suggest that in this 75th anniversary year of the Wilson Ornithological Society, members rededicate themselves to keeping abreast of the numerous proposals and changes taking place during this whirlwind period of development and adjustment of conservation programs. Help is needed in advancing sound programs to preserve and utilize birds.

Similar to the procedure used in the last few reports of this Committee, the subject matter of this report is organized into six major categories: Conservation Education, Land Use Problems, Habitat Pollution, Migratory Bird Hunting Seasons, Control of Bird Populations, and Endangered Species and Subspecies.

CONSERVATION EDUCATION

Conservation Education Perspective.—Whenever man, in his maze of social interactions, comes to an impasse in which the thinking or action of an individual or group is thwarted by custom, habit, or tradition, the common cry is for "more education." The need with or without an impasse is undeniable. There is likely to be more conflict between philosophy and action on one hand, and custom, tradition, and rule of thumb on the other in the field of conservation than in any other endeavor.

Conservation is a broad blanket, but even in the academic area it is pulled thin and

taut by all who would be covered. Conservation education, therefore, cannot be adequately defined or described in all its ramifications by a brief, concise statement. Much of the confusion as to the direction and role of conservation education stems from the fact that any two interested groups may be talking at cross purposes because each is concerned only with part of this increasingly complex field. The need for clarification, however, has resulted in numerous governmental committees and quasi-official conservation-education organizations cropping up among interested groups. The primary purpose of these committees and organizations is to orient the diverse interests to a common goal. The results to date have not been inspiring.

The outline presented below is offered to illustrate the broad scope and multilevel approach needed in conservation education. There may be other and better ways to outline this field. No pride of originality is claimed. The objective of the outline is to engender awareness that intellectual flexibility and attitude adjustment will be required if all phases of conservation education are to be dealt with effectively. Conservation education must be adjusted to a broad spectrum of interest.

- I. Technical education is required for all professional conservationists.
 - a. Undergraduate training should be oriented to courses in basic science.
 - b. Graduate training at the master's and doctor's degree level should be research oriented.
- II. Cultural training in conservation is necessary for:
 - a. Teachers who will teach the sociological and biological interrelationships of man, plants, animals, and the land.
 - b. Nontechnically trained extension workers who deal with the public.
 - c. Persons whose fields overlap or impinge on natural resources and conservation.
- III. Semitechnical or popularized scientific information on conservation fulfills a major role in conservation education for:
 - a. Adults making up the bulk of the general public. Based on type of interest, there are two major groups of these people.
 1. Those with interests requiring a minimum of exploitation, as camper, hiker, canoeist, birdwatcher, landowner, and garden club member.
 2. Those with active interests, as fisherman, hunter, resort owner, and outdoor commercializer.
 - b. Administrators, journalists, and writers.
- IV. Subadult training in simplified basic concepts serves as the foundation for advanced programs in conservation education.
 - a. Grade school children can be reached via lectures, demonstrations, books, movies, TV films, radio programs, field trips, and outdoor projects. Natural curiosity of children for living things around them, favors actual participation through the last two approaches.
 - b. High school pupils can be reached via the above-named avenues, as well as through work programs in the field, summer conservation camps, 4-H clubs, Future Farmers of America groups, and scouting programs.

This outline could be expanded or rearranged but, however changed, its salient point of broad scope will remain. Conservation education usually brings to mind Point IV, subadult education. The rapidly expanding programs in the remaining areas necessitate a re-adjustment in our thinking. Today we must define what aspect of conservation education we are talking about before presenting a case for any particular interest. Conservation education, like agriculture, requires one to be explicit as to the phase of the general field about which he is speaking.

If this brief appraisal serves no other end than to caution against ambiguous use of the term conservation education, its purpose will have been accomplished.

Whether conservation is taught by an educator with limited training in conservation or a conservationist with limited training in education, it must be taught as a science.

For conservation to become an effective force in our society, the natural and physical sciences which form the bulwark of conservation must integrate compatibly with the fields of social science. For conservation education to be adequately acquired, the complexity of conservation must be reduced to its component parts and the relationship of each part to the whole concept be made clear. While there is need for more education for more people, there is even greater need for more understanding of the principles on which conservation is based.

Youth Conservation Camps.—In an effort to advance conservation education, to accomplish conservation and forestry work, and to improve recreation facilities on public lands, two state youth conservation camps were established in Wisconsin in 1962. These camps, located in Bayfield and Vilas counties, gave 400 older high school boys six weeks of outdoor work and instruction. Each boy was paid \$18.00 per week, in addition to receiving board and lodging. Success of this initial effort was so good that the Wisconsin legislature was asked to authorize a third camp. These youth camps, financed by a one-cent tax on cigarettes, seem to be a worthy procedure to develop the physical and mental resources of boys and accomplish conservation development and maintenance projects simultaneously. These are not correction camps for the delinquent or corps for the needy. Hopefully, the boys improved their attitudes toward natural resources.

On a national level, bills (S. 1 and H.R. 5131) have been introduced to establish a Youth Conservation Corps (Natl. Wildl. Fed., 1963a). If approved, the program would establish a corps of young men between 16 and 22 years of age to work in forests, parks, and wildlife refuges.

Outdoor Nature Centers.—The National Audubon Society's program of educational Nature Centers continues to grow (Buchheister, 1963). Objective of the centers is to extend proven methods of teaching and learning in the out-of-doors. There are now more than 100 community projects located in 29 states. One project is located in Canada. Eleven of the nature centers provide full-year instruction by one or more teacher-naturalists. Sixteen others provide part-time instruction. The centers themselves have resulted in the preservation of more than 40,000 acres of natural habitat.

LAND USE PROBLEMS

Wetland Acquisition.—During the 75 years of the Wilson Society's existence, the National Wildlife Refuge System was initiated and has grown tremendously. By Executive Order of Theodore Roosevelt, Pelican Island in Florida was established as the first refuge in 1903. This act gave national recognition to the need for conserving our wildlife resources. The system now contains more than 270 refuges. Most of the great waterfowl refuges were acquired and developed since 1935. More acquisition is needed to block out existing refuges, to complete the pattern of refuges within the entire range of these birds, and to help preserve the breeding and wintering habitat.

In a 1962 speech on the wetlands acquisition program of the Federal Government, Assistant Secretary of the Interior Frank P. Briggs sketched an acquisition goal of 2,970,000 acres by 1970. The schedule of acquisition for both waterfowl refuges and potholes or small marshes in the prairie breeding grounds is outlined below.

Fiscal Year	Acres	Estimated Cost
1962	39,626	\$ 5,000,000
1963	257,374	12,000,000
1964	589,000	25,000,000
1965	589,000	25,000,000
1966	589,000	25,000,000
1967	525,000	25,000,000
1968	361,000	23,000,000
1969	10,000	1,250,000
1970	10,000	1,250,000

From the year 1971 to 2007, Briggs said that the Bureau of Sport Fisheries and Wildlife contemplates the purchase of an additional 750,000 acres. That apparently would conclude planned purchases by the Bureau for wildlife purposes.

Land acquisition continues at varying rates to meet these goals. The Migratory Bird Conservation Commission recently approved the establishment of six new national wildlife refuges and the enlargement of existing units. The new refuges and their approved acreages are: Alamosa, Colorado (9,429 acres); Davis Island, Mississippi (25,941 acres); Eastern Neck, Maryland (2,247 acres); Toppenish, Washington (12,378 acres); Lake Nettie, North Dakota (2,890 acres); and Primehook, Delaware (11,233 acres). Additions were also made to a number of existing refuges.

A new refuge was included in the Omnibus Rivers and Harbors Act of 1962. The 87th Congress authorized the acquisition of 2,311 acres of land for the Eufala National Wildlife Refuge in conjunction with the U.S. Corps of Engineers' Walter F. George Lock and Dam Project in Alabama. The Administration has approved the Corps' request for \$500,000 to buy the land in the next fiscal year.

Under the authorized advanced loan of \$105 million (P.L. 87-383), funds must be appropriated annually. To date, the amount of appropriations have been less than anticipated. In the 1962-63 fiscal year, Congress made the first money, \$7 million, available for the accelerated wetlands purchase program. The 1964 budget request calls for an increase to \$12 million, which with an anticipated \$4 million from Duck Stamp receipts will channel about \$16 million into the wetlands acquisition program.

To handle the increased land negotiations, the 87th Congress amended the Migratory Bird Conservation Act to enlarge the yearly expense allowance for the Migratory Bird Conservation Commission from \$5,000 to \$7,500. This increase was justified on the basis of accelerated wetlands activity and the need to defray expenses of state officials who sit with the Commission to consider land acquisition affecting their particular states.

Through the first two years and seven months of the small wetlands program, started in July 1961, 44,250 acres were purchased and 165 tracts totaling 11,000 wetland acres were taken under easement. This is fairly good progress for a new program.

Opposition of county and state governments to the federal government purchasing lands for wildlife continues to threaten the expanded acquisition program. Approval from the Governor must be obtained before purchase can be made in each of the three prairie pothole states. Minnesota has largely agreed to the program. Resistance is being encountered in South Dakota and North Dakota. The basis for this resistance is the alleged loss of income by county governments when land is removed from the tax rolls.

To reduce the local opposition to the accelerated federal wetlands acquisition program, revision of the federal law governing the distribution of funds from the sale of refuge

products is being proposed. At present, counties can receive 25 per cent of the net receipts from refuges within their boundaries. Senators Quentin Burdick (North Dakota), Milton R. Young (North Dakota), and George S. McGovern (South Dakota) introduced a bill (S. 179) in the 88th Congress which would increase the participation by counties in revenues from the National Wildlife Refuges. This proposal was referred to the Senate Committee on Commerce. Representatives Hjalmar C. Nygaard (North Dakota) and Don L. Short (North Dakota) introduced identical bills (H.R. 1004 and H.R. 1127), which were referred to the House Committee on Merchant Marine and Fisheries.

These bills provide that revenue collected by the Department of the Interior from refuges which have been acquired in fee title be held in a separate fund. Then, one per cent of the adjusted cost of the land would be paid annually to the counties in which the refuges are located. In the 87th Congress a payment of three-fourths of one per cent of the adjusted cost was considered. Under this measure for fiscal 1962, 148 counties would have received more than they presently receive (41 counties get nothing now), 9 counties would have received approximately the same amount of money, and about 20 counties would have received fewer funds, but only two or three appreciably less (Nat'l. Wildl. Fed., 1963*b*). One parish in Louisiana, which gets a large sum from oil lease revenues, would have "lost" a substantial amount of money.

Adequate tax legislation is a must if the stated goals of the accelerated wetlands acquisition program are to be achieved. Proposals to change the sharing of revenues from refuges will perhaps receive further consideration by the 88th Congress. Such legislation would facilitate Governor and County Commissioner approval.

Congress will also consider the Tule Lake, Lower Klamath, and Upper Klamath National Wildlife Refuges. Senator Thomas H. Kuchel (California) reintroduced a bill (S. 793) to give congressional protection to these vital areas. Congressman Harold T. Johnson (California) introduced an identical bill (H.R. 3817) in the House of Representatives.

Superimposed years ago by Executive Orders on earlier reclamation withdrawals, the three Oregon and California refuges are an important link for migratory waterfowl on the Pacific Flyway. More than 80 per cent of the ducks in the flyway pass through the refuges during spring and fall migrations. Many waterfowl as well as other species of marsh birds nest at the refuges, and good production of the scarce Redhead and Ruddy Duck is obtained. Local irrigation and reclamation interests are making a serious effort to homestead the Tule Lake Refuge, to reduce greatly the water sumps, and to place them under cultivation. Reclamationists have made serious inroads in the Tule Lake Refuge over the years and further diversion of lands would drastically reduce the refuge's value for waterfowl and other birds. Congressional dedication of the refuges to wildlife protection is essential and is being sought by conservationists. They want to remove the threat that some future administrator may decide to seek to have the Executive Orders rescinded, or that further reclamation inroads will be encouraged. A congressional directive would prevent such a catastrophe from happening.

In Canada, the National Wildlife Federation is continuing to classify the vital waterfowl production habitat in the prairie provinces. Here is where an estimated 50-75 per cent of our ducks and coots are raised in years of adequate water. This habitat classification project was initiated in April 1961. The objective is to delineate zones of breeding habitat of differing quality on the basis of characteristics of soil and climate. Ultimately, a system of priorities for acquisition and preservation of breeding habitat is to be developed.

Drainage.—Linked closely with the Bureau of Sport Fisheries and Wildlife's efforts

to acquire wetlands for migratory waterfowl and other wildlife are the Department of Agriculture's financial and technical assistance programs for wetland drainage. The 87th Congress took two actions that helped curtail the subsidized drainage which has been instrumental in destroying one-third of the small water areas in the nation's most productive waterfowl nesting region, the prairie pothole area of the Dakotas, Minnesota, and eastern Montana.

The first action consisted of an amendment to the 1963 Agriculture Appropriations Act which prohibited offering financial or technical assistance in all 50 states for drainage of Type 3, 4, and 5 wetlands (important waterfowl areas) during the 1962-63 fiscal year. Representative Henry Reuss (Wis.) recently indicated that reports of the Fish and Wildlife Service clearly showed the effectiveness of this restriction (*Milwaukee Journal*, 15 February 1963). In a preceding 30-month period the Service could merely recommend that drainage be denied and county Agricultural Stabilization and Conservation Committees could ignore the recommendations and grant funds for drainage. In that period, 3,384 applications for drainage involved wetlands that the Service found valuable for wildlife. Of these, 2,112 were drained and only 37 per cent were saved. Under the new law the Service opposed 247 applications and all of the wetlands involved were saved. We understand Congressman Reuss will try to amend the 1964 Agriculture Appropriations Act to continue the curtailment of subsidized drainage of valuable wildlife lands. At a time when the Department of Agriculture recommends converting 50 million acres of good soils, presently being cropped, to other uses, including recreation, this very definitely seems to be an action in the best public interest.

The second action of the 87th Congress prohibited the Department of Agriculture from providing assistance for drainage of designated wetlands in Minnesota, North Dakota, and South Dakota when the Department of the Interior says the practice is harmful to wildlife (P.L. 87-732). Under this new law, the Bureau of Sport Fisheries and Wildlife has 90 days in which to inspect wetlands for which drainage applications have been received by the Department of Agriculture and to report if important wildlife habitat is involved. Failure to report in time would terminate the prohibition, as would a decision by the Bureau or the affected state wildlife agency not to make an offer to purchase or lease the wetland within one year. The ban on assistance for drainage is also lifted if an offer to lease or buy is not consummated within 5 years.

Conservationists have sought some reasonable check on federal drainage assistance programs for a long time. Although the two new provisions of law, reported above, have helped to slow the rate of drainage, they are negative in character. For that reason, conservationists are seeking a positive means of encouraging landowners to retain wetland habitat in its natural condition.

Nothing in the federal law prevents a landowner from draining wetlands at his own expense. But Congress has made it quite evident that public funds cannot continue to be used to stimulate drainage of private lands without consideration being given to the effects of drainage on wildlife, a valuable public resource.

Recreation.—Major accomplishments of the 87th Congress include the establishment of three national seashores. The Cape Cod National Seashore was established (P.L. 87-126) in Massachusetts and funds were granted to initiate land acquisition. Point Reyes National Seashore was created in California (P.L. 87-657) and the Padre Island National Seashore in Texas (P.L. 87-712). The Congressional Act establishing Padre Island was ratified by the Texas legislature in April 1963. Sizable blocks of natural habitat will be preserved in these seashore areas, some of which will benefit birds, especially shorebirds and waterfowl.

Recent bills introduced in the 88th Congress to add new units to the National Park System include the following (Nat'l. Aud. Soc., 1963a) :

Prairie National Park, introduced by Senators James B. Pearson and Frank Carlson (S. 986) and Congressman William H. Avery (H.R. 4424) for a 60,000-acre area in Pottawatomie County, Kansas.

Sleeping Bear Dunes National Lakeshore, advanced by Senators Philip A. Hart and Pat McNamara (S. 792) and Representative Neil Staebler (H.R. 4201), involves a 77,000-acre area on Lake Michigan near Traverse City, Michigan.

Indiana Dunes National Lakeshore was offered by Senator Paul Douglas and 18 co-sponsors (S. 650), Representative John P. Saylor (H.R. 3344) and others.

Chesapeake and Ohio Canal National Historical Park introduced by Representative Charles McC. Mathias, Jr., to encompass the present C. and O. Canal National Monument along the Potomac River in Maryland and enlarge it by buying and leasing adjacent lands up to a maximum of 15,000 acres.

Ice Age National Scientific Reserve introduced in identical bills by Lester Johnson (H.R. 1096) and Henry Reuss (H.R. 1115).

Other proposals for National Parks were scheduled for hearings in April or May 1963 and included the Ozark National Rivers area in southern Missouri, Canyonlands National Park in Utah, Valle Grande National Park in New Mexico, Oregon Dunes National Seashore, and Fire Island National Seashore in New York.

In 1962, the 87th Congress enacted a law (P.L. 87-714) that gives the Secretary of the Interior needed authority to control and regulate recreational use on the national wildlife refuges, game ranges, and similar units. It clearly specifies that recreation is intended to be an incidental or secondary use of refuges, permissible only in such places and at such times that it will not jeopardize the primary purposes for which refuges are established.

The Secretary now can permit development of picnic sites, sanitary services, boat ramps, nature centers, and other facilities to accommodate refuge recreational use. He also can issue and enforce regulations so that such use is consistent with the overall purpose of each refuge. Permitting limited and specified use of national wildlife refuges and other similar units is a noteworthy advance to help people enjoy the numerous outstanding recreational opportunities at these areas. However, there is a need to watch development under the new authority to make sure recreational planners do not maximize recreation on wildlife refuges. That course, if pursued, would be contrary to the expressed interest of Congress. Persons interested in the national wildlife refuge program should follow carefully future developments under this new authority.

Congressman John Dingell reintroduced a bill (H.R. 2578) to require a \$2.00 annual stamp to be purchased by persons 16 years of age or older who use national wildlife refuges. A person shall possess a valid federal migratory bird hunting stamp or a new \$2.00 wildlife refuge stamp in order to enjoy the recreational opportunities of refuges.

On 31 January 1962, the Outdoor Recreation Resources Review Commission submitted its report "Outdoor Recreation for America" (available from the Superintendent of Documents, Washington 25, D.C.). The report was the result of three years of extensive research and contains a searching analysis of the recreation needs of the Nation together with recommendations for attempting to meet these demands.

Following one of the recommendations of the report, Secretary of the Interior Udall, in 1962, established the Bureau of Outdoor Recreation by departmental order. This Bureau has six main functions (U.S. Dept. Interior, 1962:40): (1) coordinate related federal programs, (2) stimulate and provide assistance in state planning, (3) administer grants-

in-aid, (4) sponsor and conduct research, (5) encourage interstate and regional cooperation, and (6) formulate a nationwide recreation plan on the basis of state, regional, and federal plans.

An organic act bill (S. 20) to give the new Interior Bureau authority to carry out its main functions is now being considered by the 88th Congress. This act would be the first step in placing the new Bureau in complete operation.

A second and related proposal is the Land Water Conservation Fund bill (S. 859). This legislation is an outgrowth of recommendations by the Outdoor Recreation Resources Review Commission and is supported by President Kennedy. A ten-year program is planned, financed largely on a pay-as-you-go basis. Major sources of funds include (1) entrance fees and other recreation-user charges at federal areas, (2) receipts from the sale of surplus federal lands, and (3) rededication of the existing four-cents-a-gallon tax on pleasure boat fuel. The income would be used to provide (1) grants on a matching basis to help states plan for, acquire, and develop recreation areas, including wildlife areas, and (2) aid for the federal government to acquire inholdings in national forests and parks, to develop recreation facilities at federal impoundments, and to establish sanctuaries for preserving threatened species of wildlife.

Two bills (S. 7 and S. 9) have been introduced by Senator Harrison A. Williams, Jr., to modify the open space aspects of the 1961 Housing Act (P.L. 87-70). One proposal (S. 7) would expand and enlarge the earlier legislation, making additional federal grants available to match funds spent by local communities for open space land. The National Audubon Society will recommend that "outdoor education" be added to the authorized purposes for which such areas may be acquired (Natl. Aud. Soc., 1963b). The other measure (S. 9) would permit the federal government to assume the full cost of land purchased for park, playground, or recreation use in urban renewal areas. These bills are awaiting action by the Senate Committee on Banking and Currency. This proposed legislation could be of considerable significance to birdlife and conservation education efforts. When suitable outdoor education areas are located within reasonable distances of schools and residences, children and adults can readily make use of them.

Wilderness.—Conservationists were greatly disappointed by the failure of the 87th Congress to approve the Wilderness Bill which sought to give wilderness designation and protection to areas in the national forests, parks, and wildlife refuges. As reported by the Society's Conservation Committee last year, the Wilderness Bill was approved by a 78 to 8 Senate vote and was sent to the House, where it was referred to the House Interior and Insular Affairs Committee. That group held a series of three field meetings in the west in the fall of 1961 and public hearings in Washington in 1962.

It soon became apparent, however, that key members of the Committee were opposed to the Senate bill, and a drastically amended version finally was reported by the Committee to the House. The committee chairman, Congressman Wayne N. Aspinall (Colorado) willingly accepted a committee instruction to seek to put the bill to a House vote under a procedure that would have prevented its full debate and correction. Aspinall was unable to get clearance from the leadership to take the bill to the floor under such an arrangement. Faced with the prospect of having the bill corrected substantially on the House floor, he left Washington fully three weeks before adjournment. His decision killed all chance of consideration of the Wilderness Bill in the 87th Congress. It also blocked committee action on other important conservation measures, such as the Tule Lake Wildlife Refuge bill and Administration bills pertaining to the newly created Bureau of Outdoor Recreation and the proposed Land Conservation Fund. A number of those bills already had passed the Senate, and there is no doubt that the House would

have approved most of them had the work of the committee not been interrupted.

Considerable misunderstanding appears to have developed concerning the specific language of the proposed wilderness legislation. To help refine your own thinking, we recommend reading "The Facts About The Wilderness Bill," an informational statement issued by the National Audubon Society.

The Wilderness Bill was reintroduced in the House by Congressman John P. Saylor (H.R. 930) on the opening day of the 88th Congress and in the Senate by Senator Clinton P. Anderson (S. 4) and a group of cosponsors. Bill S. 4 advanced 27 March when the Senate Committee on Interior and Insular Affairs voted 11 to 5 to send the measure to the floor with a favorable report. Minor amendments were added by the Committee, the most serious being one that would prohibit the exercise of eminent domain by the federal government should it undertake in the future to acquire small private holdings, such as inactive, patented mining claims that exist within some wilderness areas. On 8 April 1963, the Senate passed the bill by a majority vote of 73 to 12. The Wilderness Bill faces an uncertain future in the House.

Two executive actions which assure the preservation of large areas of undisturbed mountain habitat involve the Anaconda-Pintlar and the Selway-Bitterroot Wilderness Areas. The first, near Butte, Montana, embraces 159,000 acres. The second, astride the Idaho-Montana high divide country west of Hamilton, is the nation's largest dedicated wilderness area with more than 1.2 million acres. These former national forest Primitive Areas were reclassified as wilderness under decisions of Secretary of Agriculture Orville L. Freeman in December 1962 and January 1963. Although pleased that the Secretary of Agriculture promoted the Selway-Bitterroot to full wilderness status, conservationists are concerned that the new area comprises only 77 per cent of the former primitive area. The Selway-Bitterroot Primitive Area was withdrawn from all forms of commercial use in the 1930's and was to be preserved for its wilderness value. Some conservationists are wondering why the technical area of wild land was reduced by nearly 23 per cent in the new designation.

Habitat Development.—Activities of man continue to modify the environment, sometimes benefiting birdlife and many times affecting the fauna adversely. Some major developments are summarized here.

The 25th anniversary of the Federal Aid in Wildlife Restoration Act was celebrated in August 1962. Before Congress passed the Act in 1937, wildlife research in state game departments was largely unknown, game management was mostly by trial and error, and land acquisition for wildlife by states was negligible. As of 30 June 1961, 2,294,069 acres had been acquired in fee title under the P-R program (1938-61) by 47 states (U.S. Bureau of Sport Fisheries and Wildl., 1962:2). Thousands of additional acres have been leased for public use. Nongame birds as well as game birds respond to management of the areas. Many of these lands are used by people for purposes other than hunting. Nonhunters should be thankful that the people paying the tax on arms and ammunition have helped provide them with a place to enjoy the out-of-doors.

With more development, many of the state wildlife areas acquired under the Federal Aid in Wildlife Restoration Act could be improved. A bill (H.R. 4705) now pending in Congress would assist states with the needed development work (Natl. Wildl. Fed., 1963c). The Secretary of the Interior could request that surplus federal property be held from disposal. Available property could then be assigned for a variety of uses, including fish and wildlife conservation use by the states and their political subdivisions. This proposal would implement one of the recommendations of the Outdoor Recreation Resources Review Commission.

In a new policy statement approved by President Kennedy in the summer of 1962, recreation, wildlife, and fish were placed on the same level with flood control, navigation, and other project purposes usually associated with federally constructed reservoirs. It replaces the former policy directive that was restrictive in the sense that fish, wildlife, and recreation were excluded as integral parts of reservoir project planning.

The document informs the Interior, Agriculture, Army, and Health, Education and Welfare departments that "planning for the use and development of water and related land resources shall be on a fully comprehensive basis so as to consider . . . outdoor recreation, as well as sport and commercial fish and wildlife protection and enhancement; preservation of unique areas of natural beauty, historical and scientific interests. . . ."

It also recognizes that the physical development of a river may not always be in the best interest of a river or of the people who recreate there and enjoy its natural values. The document informs the federal planners that the "well-being of all the people shall be the overriding determinate in considering the best use of water and related land resources." It instructs that preservation also shall be an objective in river planning, and that "proper stewardship in the long-term interest of the nation's natural bounty requires in particular that: there be protection and rehabilitation of resources to assure availability of their best use when needed; open-space, green-space, and wild areas of rivers, lakes, beaches, mountains, and related land areas be maintained and used for recreational purposes; and areas of unique natural beauty, historical and scientific interest be preserved and managed primarily for the inspiration, enjoyment, and education of the people."

This policy statement means, that for the first time, planners of federal river developments can figure in needed lands for recreation, fish, and wildlife as an initial project item, not as separate items as required previously. It also makes clear that the recreational, fish, wildlife, scenic, and natural use of a river for nondevelopment purposes can be provided for. The practical application of the policy has been clouded, however, by recent objection by the Bureau of the Budget to the purchase of lands for wildlife at some new reservoir projects. The Bureau, which is the fiscal wing of the White House, apparently believes that the Bureau of Sport Fisheries and Wildlife should pay for the lands from Duck Stamp receipts. This matter now is a subject of Budget Bureau-Interior Department debate. Secretary of the Interior Udall contends that the Budget Bureau is not correct.

Under the terms of the Accelerated Public Works Act of 1962, a total of \$6 million was apportioned for wildlife and fish restoration projects in the United States, Guam, Puerto Rico, and the Virgin Islands (Wildl. Mgmt. Inst., 1963*a*). As approved, this Act authorized the appropriation of \$900 million for projects to provide employment in economically distressed areas. Funds are made available to state and territorial fish and game departments for use on projects otherwise qualified under the successful Federal Aid in Wildlife and Fish Restoration Acts. Money is provided for approved projects on a 50-50 matching basis with nonfederal funds. Potentially, birdlife could receive many benefits from the habitat-development phases of this Act.

The agreement signed 28 March 1963 by the Departments of Defense and Agriculture should benefit wildlife. These departments agree to work together for the conservation of forests, soils, and waters on lands administered by the military agencies (Wildl. Mgmt. Inst., 1963*b*). Officials in charge of military installations, reservoir projects, and other Department of Defense facilities can obtain from the Department of Agriculture technical assistance, advice, and special research services. Defense will reciprocate by assisting in

forest fire work and in supplying mapping services. Lands will be used to insure a continuing supply of resources on them.

In another cooperative agreement, the Army Corps of Engineers and the Bureau of Sport Fisheries and Wildlife agreed to provide firm protection for wildlife values on 159,000 acres along the Upper Mississippi River (*Milwaukee Journal*, 30 March 1963). In 1962, the Upper Mississippi River attracted 6,000,000 visitors interested in boating, water skiing, swimming, camping, fishing, hunting, and sight-seeing. The primary purpose of the new agreement is to minimize the impact of these recreational activities on valuable wildlife resources. Seasonal populations of waterfowl could benefit substantially from this pact.

In a courageous move early in 1963, Secretary of the Interior Udall increased private grazing fees on 180 million acres of land administered by the U.S. Bureau of Land Management in the western states. Restoration of the overgrazed rangelands should be enhanced by this historic action. Birdlife will benefit from the anticipated improvement in vegetation which should eventually result.

Highway construction continues to be viewed in widely differing ways. The Federal Aid Highway Act of 1962 provides, among other things, for development of roads and trails in forests and on other public lands. Bills (S. 1147 and H.R. 1900) are now pending in the 88th Congress to enable the Secretary of Agriculture to construct and maintain an adequate system of roads and trails for the national forests to enhance timber management and recreation (Nat. Wildl. Fed., 1963*d*). Generally, both the 1962 enactment and the 1963 proposals seem to be potentially beneficial for birdlife. Openings attractive to birds and accessible to people would be created in many timbered areas.

Also pending in Congress are bills (S. 468 and H.R. 2996) to secure protection for streams and natural resources in highway construction. Approval of the Secretary of the Interior would be required for surveys, plans, specifications, and estimates for projects involving federal-aid highways. The Secretary, through consultation with appropriate state agencies, would prevent or minimize damage to fish, wildlife, and recreation resources.

Ornithologists should be aware of possibilities to create small ponds and impoundments in conjunction with major soil-moving operations associated with highway construction. Such water areas, as now found along parts of the Indiana and Ohio toll roads, are rather heavily used by ducks during migration, and probably by other forms of wildlife.

In 1962, the Department of Agriculture launched a program to reduce surplus commodities by encouraging the conversion of an estimated 50 million acres of cropland to other uses. The 1962 Food and Agriculture Act offers opportunities to landowners and state agencies to develop recreation facilities and fish and wildlife habitat on private lands. Many incentives, in terms of low-interest long-term loans, cost-sharing, and practice adjustment payments, are offered to facilitate the conversion program. For the first time, recreation of many types is being viewed as a justified expenditure of public funds in agricultural programs. Also available, is federal cost-sharing for wildlife practices under the Agriculture Conservation Program authorized by Congress in 1961 (P.L. 87-112). Further opportunities to benefit birdlife are available under the small watershed, rural renewal, and area redevelopment programs.

People should study these programs carefully and consult with groups in agriculture to see if they can help increase public understanding of the available financial and technical assistance (Gabrielson, 1963). Potentially, the new agriculture program can help bring urban residents closer to the problems of soil and water management and the

problems faced by the land operator. This is good. An improved understanding by more people of the proper use of our renewable natural resources is needed nationally.

Two new and ambitious wildlife projects are proposed for eastern Montana. The first of these involves the Fort Peck Game Range, an area of about 400,000 acres around the periphery of the Fort Peck Reservoir on the Missouri River. The area has been under the joint jurisdiction of the Bureau of Sport Fisheries and Wildlife and the Bureau of Land Management, both in the Department of the Interior. The Secretary of the Interior, late in 1962, directed that sole jurisdiction be vested in the wildlife agency and that an order be drafted to accomplish the decision. A conflict developed within the department over the continued use of the area for grazing. Reports indicate that the situation will be resolved largely in favor of the wildlife agency.

The Bureau of Sport Fisheries and Wildlife has prepared an imaginative plan to increase vastly the value of the area as habitat for mammals and wildlife of all kinds. Grazing definitely would be limited and every opportunity would be taken to enable the range to recover from serious overuse by livestock. The Bureau has proposed to name the area the Charles M. Russell National Wildlife Range in honor of the famed western artist.

The second project, receiving serious study, involves pumping water from the Fort Peck Reservoir and flooding three shallow basins of the prehistoric bed of the Musselshell River which lie north of the reservoir toward the small town of Malta. Wildlife biologists believe that this restoration project would make one of the best waterfowl nesting and resting areas in the United States. The project, which would involve approximately 40,000 acres of land, is tentatively identified by the name of Fort Hawley, after a nearby pony express crossing on the Missouri River.

In contrast to the beneficial aspects of these Montana projects, is the tremendous threat to fish and wildlife by the proposed Rampart Dam on the Yukon River in central Alaska. This new proposal dwarfs all previous similar projects in the unprecedented magnitude of fish and wildlife resources and habitat that would be destroyed (Gabrielson, 1963).

A 500-foot dam would create an impoundment covering *10,000 square miles* of the Yukon Flats that now produce an average of $1\frac{1}{2}$ million ducks and geese yearly. More ducks are produced there than are bagged in most flyways. These waterfowl represent millions of man-days of recreation potential in the states, since Yukon Flats waterfowl are bagged from the Pacific to the Atlantic. The proposed dam would alter the annual water cycle that makes the Yukon area an important waterfowl breeding and concentration ground. Construction of the Rampart Dam and subsequent flooding would be a serious blow to the waterfowl population of North America. Look into this proposed project and learn about the facts involved.

HABITAT POLLUTION

The growing importance of habitat pollution was emphasized by President Kennedy in his health message directed to Congress on 7 February 1963. He emphasized the "threats to the physical well-being of our families from the contamination of food, air, and water." Most living creatures are affected, one way or another, by the contaminants. Pollution of environments continues to threaten the status of any bird with a limited range or a specialized migration pattern which concentrates it and exposes it to contamination. Such species could be reduced seriously in numbers before people are aware of it. Greater attention must be directed toward correcting and preventing pollution of the environment we share with other living creatures.

Pesticides.—The use of pesticides continues to hold congressional attention. The storm aroused by Rachel Carson's book, "Silent Spring," has had a profound impact on government. The President's Science Advisory Committee, in cooperation with the Federal Council for Science and Technology, has undertaken a major review of the Government's activities with respect to the use of chemicals in the environment (Natl. Wildl. Fed., 1963e). Represented on the committee are all federal departments concerned in one way or another with insecticides, herbicides, fungicides, and other chemicals used to control insect and pest plants and in the production and preservation of food. The committee's report and recommendations are ready for White House study now.

Specific legislation has been introduced in the 88th Congress dealing with the general pesticide problem. Congressman John D. Dingell (Michigan) has introduced two bills (Natl. Aud. Soc., 1963c). He reintroduced his Chemical Pesticides Coordination Act (H.R. 2857) to require advance consultation with federal and state wildlife officials before any federal agency can start a spraying program designed for mass biological controls. Subsequently, the second bill (H.R. 4487) was offered. It would (1) strengthen the research authority of the Department of the Interior in pesticide-wildlife relationships, (2) remove the present \$2,565,000 limitation on funds that can be appropriated annually to the Fish and Wildlife Service for such research, (3) direct the Secretary of the Interior to make the findings of such research known to the Secretary of Agriculture, and (4) require that information necessary to prevent needless damage to wildlife resources be printed on the labels of package pesticides. Both bills have been referred to the House Committee on Merchant Marine and Fisheries.

At a panel discussion on 2 October 1962 at the Smithsonian Institution, Carl W. Buchheister, president of the National Audubon Society, offered a five-point action program to help meet the pesticides problem at state and national levels (Natl. Aud. Soc., 1962). His proposals included:

1. Shift the emphasis in the U.S. Department of Agriculture from the present general reliance on toxic chemicals to research in biological and cultural controls and to a balanced program that would minimize, but not necessarily eliminate, the use of chemicals.
2. Greatly increase funds for Fish and Wildlife Service research on the effects of pesticides.
3. Pass a law giving the Federal Pest Control Review Board genuine authority to review, modify, or veto pest-control programs proposed by federal agencies. The existing board, created by administrative action, has only advisory functions.
4. Amend the federal laws relating to the registration and labeling of pesticides to require that labels carry a specific warning—so worded as to be understandable to the consumer—when any pesticide is potentially dangerous to fish and wildlife or as a water pollutant.
5. By legislative act, create in each state a "Board of Pesticides Control" so composed as to fairly represent the different aspects of public interest, including health, agriculture, fish, wildlife, and water pollution. Such state boards should be given the following powers or duties:
 - a. To regulate the packaging, labeling, advertising, and selling of pesticides within a state.
 - b. To license persons engaged in commercial or contract spraying.
 - c. To regulate pesticide programs engaged in by public agencies.

- d. To require permits for the application of pesticides on private lands, if necessary, to prevent water pollution or to avert the dangerous accumulation of toxic residues on foodstuffs or in the soil.
- e. To carry on a program of public information about safe pest-control methods.

Some states have acted along the recommended lines. In 1962, the Massachusetts legislature established a Pesticides Board. Legislatures in Maine, Connecticut, Ohio, and New Hampshire are considering bills to regulate chemical pesticides (Natl. Aud. Soc., 1963*d*). Action is anticipated in Illinois, and possibly other states. Such proposals should be watched closely to insure that sound, mature judgment is used to develop proper wording in the bills. Cooperative action between the numerous interests associated with pesticides is definitely necessary to provide workable regulations.

Detergents.—Amendments to the Federal Water Pollution Control Act are being proposed to require standards of decomposability for synthetic detergents. Congressman Henry Reuss (Wisconsin) suggested an amendment to protect navigable waters of the United States from further pollution by requiring that synthetic-based detergents manufactured in the United States or imported into the United States comply with certain standards of decomposability (Natl. Wildl. Fed., 1963*f*). An identical bill (S. 1118) has been offered by Senator Lee Metcalf of Montana (Natl. Wildl. Fed., 1963*d*).

Water Pollution.—Bills have been offered in the 88th Congress to strengthen the nation's water pollution control program. Senators Edmund S. Muskie (Maine) and Hubert H. Humphrey (Minnesota) introduced a bill (S. 649) at the same time that Representatives John A. Blatnik (Minnesota) and John D. Dingell (Michigan) offered H.R. 3166 and H.R. 3167, respectively. Features of these proposals include (Wildl. Mgmt. Inst., 1963*c*):

1. Establishing a firm statement of policy to keep waters as clean as possible, rather than continuing the present negative policy of attempting to permit pollution of waters up to the ability of the waters to assimilate wastes through natural processes.
2. Establishing a Federal Water Pollution Control Administration to be headed by a Commissioner of Water Pollution Control.
3. Authorizing yearly \$100 million for assistance to cities to help separate combined sanitary and storm sewers. Combined sewer systems are a major cause of water pollution. Huge quantities of municipal wastes are released into rivers when treatment plants are by-passed during times of heavy rain and water runoff.
4. Establishing water quality criteria for interstate or navigable waters to protect public water supplies, fish, aquatic life, wildlife, and recreational, agricultural, industrial, and other legitimate uses.

Features of these proposals could help restore water areas which have become practically unusable or hazardous as a result of excessive pollution. Wildlife, as well as people, could benefit substantially.

Legislation (S. 736) has also been sponsored by a number of senators to aid industry in improving pollution control (Natl. Wildl. Fed., 1963*g*). The Internal Revenue Code of 1954 would be amended to encourage the construction of treatment works to control water and air pollution by permitting the deduction of such expenditures. A second bill (S. 737) would make inexpensive credit available to small firms for the purchase of pollution control facilities.

Oil.—An International Conference on Prevention of Oil Pollution of the Sea was held in London in March 1962 (Buchheister, 1962*a*). Purpose of the meeting was to see how

the convention treaty, subscribed to by 17 nations, could be strengthened. The United States became a member of the International Convention in 1961 (P.L. 87-167).

At the conference, attended by 56 nations, agreement was reached on the following items

1. To extend the zones where no discharge of waste oil is permitted to include all of the North Sea and the Baltic Sea, and an area of the northeast Atlantic extending 1,600 miles west of Britain.
2. To extend from 50 miles to 100 miles the prohibited zones along the coasts of countries surrounding the Mediterranean, Adriatic, Black Sea, Red Sea, and the Persian Gulf.
3. To bring new classes of ships within the convention and include all tankers down to small ones of 150 tons gross. Merchant marine (dry cargo), as well as tankers would be covered by the regulations. These proposed amendments were submitted to the United States Senate on 25 March 1963. A two-thirds vote is needed to enact the proposals.

Although no deadline was established for prohibiting all discharges of oil or oily wastes at sea, it was reemphasized at the London meeting that this must be the ultimate goal of the international effort.

Carl Buchheister states, "I came away from the conference with a firm conviction that faster progress will be made in cleaning up oil pollution of the seas and coastal waters only as conservation organizations become actively interested in the problem." Here is a real challenge for Wilson Society members.

Major oil pollution problems continue to develop periodically at inland areas and affect the welfare of wildlife. In January 1963, two industrial accidents occurred in Minnesota, resulting in wide dispersal of a reported 2.5 million gallons of oil. A soybean storage tank at Mankato, Minnesota and a crude oil pipe at Savage, Minnesota burst during the subzero weather. With the spring thaw, the oil spread down the Minnesota and Mississippi rivers as migrating birds were moving northward to their breeding grounds.

Minnesota Governor Karl Rolvaag ordered the National Guard to rescue affected ducks. The State Executive Council allocated the last \$14,000 in a calamity fund to help finance the rescue operation. An early estimate showed that 10,000 wild ducks, largely scap, had died from the effects of the oil (*Milwaukee Journal*, 7 April 1963). Songbirds, gulls, beaver, mink, and deer were also found covered with oil. Guardsmen established barriers across the main sloughs and backwaters of the Mississippi River to prevent the 100-mile long oil slick from entering the resting and feeding places of wildfowl. Efforts were directed to confine the oil to the main channel of the river and the waterfowl to the clean backwater areas. Governor Rolvaag and Governor Reynolds of Wisconsin have requested the federal Public Health Service to work on the problem.

MIGRATORY BIRD HUNTING SEASONS

Wide variations between the population status of different migratory birds have recently resulted in major changes in hunting regulations. We believe the cases cited here serve to illustrate how modern wildlife research and management, since their origin in the 1930's, have progressed in developing knowledge and action programs to meet certain present-day bird population problems. We hope the facts presented here will help improve understanding of the issues and objectives involved.

Mourning Dove.—A bill was introduced in the 87th Congress that sought to amend the Migratory Bird Treaty Act to prohibit the hunting of Mourning Doves. Widespread objection was registered by many state fish and game departments and governors to the

measure offered by Congressman Karth (Minnesota). The California legislature resolved in opposition to the bill. Objectors contended that biological information showed that shooting is not a threat to dove populations. A total closed season is definitely not required for the Mourning Dove at this time.

Lesser Sandhill Crane.—The population status, management problems, and results of recent hunting seasons were presented at the annual convention of the National Audubon Society (Boeker, 1962). Summary statements from that report are offered here.

During the winter of 1961-62 nearly 200,000 Lesser Sandhill Cranes were on the major wintering areas in southwestern United States and interior Mexico. A peak of 240,000 cranes has been recorded along the Platte River in Nebraska during spring migration. Real and alleged crop depredations have been reported in Canada and the Central Fly-way states. The amount of crop damage caused by cranes in a given year is largely dependent upon weather conditions which govern the timing and extent of crop harvest. Severe damage may be sustained in wet years when the harvest is delayed. In dry years much of the harvest is completed before the cranes arrive, and little or no crop damage occurs. Threat of damage is greatest where the cranes concentrate in large flocks during migration and on the wintering ground.

Requests for a crane hunting season were first registered with the Bureau of Sport Fisheries and Wildlife by Texas and New Mexico in 1953. The request was based largely on the premise that large concentrations of cranes in western Texas and eastern New Mexico caused extensive crop damage which was an economic burden on farmers in the areas. By 1959 crop depredations were also severe in Saskatchewan. Canadian authorities recommended a hunting season on the wintering grounds.

After intensive investigations, to insure protection for the Greater Sandhill Crane and the rare Whooping Crane, the first hunting season on Lesser Sandhill Cranes was granted by the Secretary of the Interior for parts of western Texas and eastern New Mexico for 1-30 January 1961. State law permitted a daily bag and possession limit of two birds in a six-county area of New Mexico only. An estimated 542 Lesser Sandhill Cranes were bagged.

In 1961, a crane season was held in Alaska (1-30 September) and in parts of Texas and New Mexico (4 November-3 December). Daily bag and possession limits were two birds. The total harvest in the latter two southern states was estimated at 2,914 birds. No figures are available to us on the harvest in Alaska.

In 1962, a crane season was again held in Alaska (1-30 September) and in parts of Texas and New Mexico (3 November-2 December). No estimate of the harvest is available at this time.

Three points seem clear from the limited hunting seasons:

1. The annual harvest of Lesser Sandhill Cranes has been small, seemingly well within the capability of the population to rebuild its numbers through yearly reproductive gains.
2. No Greater Sandhill Cranes or Whooping Cranes are known to have been killed as a result of the crane seasons.
3. In Texas and New Mexico the season has been well received by both farmers and sportsmen. Many farmers expressed the opinion that legal hunting is an acceptable method of alleviating the crop depredations problem. Hunters disperse local crane populations.

While the crop depredations problem on major wintering areas seems to be resolved by limited hunting, the threat of depredations remains in Saskatchewan. Magnitude of crop losses in a given year will continue to be influenced by the interrelationship of time of

crop harvest and weather conditions near major crane concentration areas. Farmers could help discourage depredations by scaring the birds off unharvested crop fields. Establishment of refuge areas has been recommended for cranes to reduce the possibility of crop depredations (Buchheister, 1962*b*). Another approach would be to make an effective crop insurance program available to farmers within the daily feeding radius of major crane concentration areas.

Whistling Swan.—In 1962, the Department of the Interior provided a limited open season in Utah only for taking Whistling Swans under special permit from 13 October through 26 December. Special regulations included (1) issuing no more than 1,000 special permits, and (2) restricting each permittee to only one Whistling Swan during the open season. Robert I. Smith (personal communication, 4 April 1963) reported that an estimated 350 swans were bagged. A full evaluation of the season is being conducted.

Canada Goose.—Special hunting regulations continue to be established for individual manageable flocks of Canada Geese. This management approach includes limiting the annual harvest by time, locality, and, in some cases, in the Midwest, by a quota. A formula for curtailing the harvest of Canada Geese in Missouri continues to be used. Conservation Departments in Illinois and Wisconsin, in cooperation with the Bureau of Sport Fisheries and Wildlife and the Mississippi Flyway Council, continue to establish an annual harvest quota for the Canada Geese of the Mississippi Valley, especially those that winter primarily in southern Illinois and adjacent areas. The objective is to hold the yearly harvest less than the annual reproductive gains and thereby encourage the flock to increase until a wintering population of 300,000 birds is achieved. With a larger population, an improved distribution of geese may be accomplished, especially in states south of Illinois. At the same time the goose populations are being managed intensively, hunting regulations are being modified constantly to improve the quality of hunting around the major goose concentration sites. The development and application of an interstate goose-kill quota system is recognized as one of the important recent developments in the history of waterfowl regulations. This action recognizes that the size of a flyway or species population represents the sum of birds in each manageable unit or flock.

The season was closed on Canada Geese in Arkansas and most of Louisiana in 1962, and will probably remain closed for a period of three to five years. The objective is to protect existing natural and transplanted small flocks of geese using these states and thereby encourage their enlargement. Whether or not areas north of these states will have to cooperate by protecting the birds to permit the objective to be reached, remains to be determined. Nevertheless, regulations aimed at maintaining or increasing separate flocks are definitely a forward step toward improving the management of goose populations.

Ducks and Coots.—Drought in the vital prairie breeding grounds continues to curtail reproduction of some ducks and the coot, and to make variations in hunting regulations mandatory. In 1962, there were closed seasons on some species of waterfowl, reduced bag limits on others, and larger bag limits on still others. Regulations permitting a daily bag of one Mallard or Black Duck in the Mississippi Flyway were the most restrictive provided for these birds in many decades. Fortunately, hunters' abilities to identify these species are generally good. At the same time these very restrictive regulations were imposed, a bonus of two scaup was permitted in the Atlantic, Central, and Mississippi flyways, in addition to the bag limit on other species.

This type of species management, through variation in size of bag limits, features identification of ducks by hunters. Evidence indicates that some hunters have difficulty in identifying certain ducks in the hand, say nothing of those in flight. To minimize the

chances of hunters taking other species, especially Ring-necked Ducks, Florida permitted the scaup bonus only in designated areas where the waterfowl population was predominately scaup (O. E. Frye, Jr., personal communication, 4 April 1963). Fortunately, in Florida, scaup concentrations are in shallow, brackish, or salt water areas which are inhabited rarely by ring-necks. Certainly this designation of regulations for specific localities and species is another major advancement in managing waterfowl more intensively.

As a result of the recent restrictive hunting seasons, some private duck clubs in the Mississippi Flyway have threatened to permit their waterfowl lands to be converted to other uses. Since private clubs control about 75 per cent of the more important waterfowl lands in the flyway, their decisions could potentially affect a sizable acreage of good habitat. However, their threats do not justify establishment of unsound liberal seasons.

In sharp contrast to these threats, was the action of County Soil and Water Conservation District Supervisors in Arkansas (Wildl. Mgmt. Inst., 1963*d*). A newspaper appeal was made to farmers in the winter of 1962-63 to flood harvested soybean and rice fields and to maintain levees to provide ducks with ample, choice feeding sites on this important duck wintering ground. Many farmers were reported to have contributed to the effort in spite of the reduced bag limit. Their objective was to send the ducks, primarily Mallards, back to the northern breeding grounds in good condition.

With the populations of many species of ducks at low levels, efforts have been intensified to reduce the illegal harvest. A proposal introduced in the 87th Congress sought to amend the Migratory Bird Treaty Act to provide for posting and closing baited areas. Offered too late for consideration in 1962, the proposal probably will be reintroduced in the 88th Congress. The measure would permit the Bureau of Sport Fisheries and Wildlife to post and close baited areas for an entire shooting season. Such a regulation, if enacted, could serve the dual purpose of protecting individuals who may not know that feed was spread deliberately to attract birds, and of providing enforcement agents with a realistic weapon to use against chronic violators.

CONTROL OF BIRD POPULATIONS

At certain times and places the populations of some birds enlarge to the point that they conflict with man's use of the land or his activities. The Starling is now a species of this type. Many times its ranks are swelled by grackles, cowbirds, Red-winged Blackbirds, and other members of the blackbird family. Frequently, these species compound real or potential damage problems. The problems resulting from these birds, particularly the Starling, are of growing concern to many people.

Since the Starling was introduced in New York's Central Park in 1870, it has spread to the Pacific Coast and southern Canada. Only small flocks were observed on the West Coast during the late 1940's. By 1962, the western wintering population numbered in the millions.

The first public concern over Starlings was expressed in urban areas, notably in Vancouver, Portland, and Seattle. About 1957, holly growers in the Willamette Valley of Oregon reported that Starling droppings were fouling their holly greens and making them unmarketable as Christmas decorations. At approximately the same time, damage to cherries, apples, and other soft fruits occurred in a number of western states. Subsequently, farmers and ranchers complained of Starling damage in their livestock feedlots. Recently, grapes, olives, and other crops grown in the Southwest have been damaged.

Starlings, in roosts containing tens of thousands of birds, occur in a variety of places and can or do cause damage. One roost is in a Pennsylvania pine forest adjacent to a

municipal water reservoir. Another is located on a southern military airbase a few hundred feet from runways used by bombers of the Strategic Air Command. Others occur in many towns and cities where the birds spend the night on building ledges and in trees along busy streets or in parks. People dislike the associated unclean conditions.

Even small numbers of Starlings may, on rare occasions, cause damage. A small flock of less than a hundred crossed the runway of a New England airbase late one afternoon and were ingested into the engines of a million-dollar jet fighter aircraft, which lost power and crashed.

Starlings also may be involved in transmitting diseases. In 1962, public health investigators reported several cases of a human respiratory ailment, called histoplasmosis, in eastern United States. This disease is caused by a fungus and is known to flourish in Starling droppings. Another mysterious ailment, transmissible gastroenteritis, killed upwards of a 100,000 young pigs in the Midwest during the winter of 1961-62. The pattern of spread of this disease was associated with the presence of Starlings at feedlots. The possible role of Starlings and other birds in spreading diseases to livestock, poultry, and people is virtually unknown and needs study.

All of the incidents cited above indicate increasing competition between birds and varied interests of man. Pressure is mounting from industry, agriculture, and governmental agencies for development of ways and means to prevent or reduce damage under a wide variety of situations. There have been substantial increases in federal appropriations for the study of nuisance bird problems. However, there is no assurance that the present research effort of approximately \$500,000 annually will provide early and acceptable bird management techniques. Unlike more sedentary animals, that at times may be objectionable and become regarded as pests, many birds are migratory and seasonally disperse widely. When scattered, birds are generally recognized as being beneficial. Only a few of their kind are regarded as undesirable, and these usually only in certain localities for relatively short periods of time. With the diversity of values associated with birds, discovery and development of satisfactory methods for preventing damage is no easy task.

The research program of the Bureau of Sport Fisheries and Wildlife includes conducting extensive banding operations to learn more about seasonal movements of blackbirds and Starlings. Over 25,000 were banded during 1961 in the eastern states and cooperative banding of approximately 30,000 birds is well under way in California. Recent band recoveries reveal that large numbers of Starlings wintering along the Pacific Coast spend the summer months on breeding grounds of the northern United States and southern Canada. If breeding populations increase in these areas, larger concentrations of winter migrants can be expected to appear in the Southwest. Summer residents also are being found in the Central Valley of California.

Biologists are attempting to locate winter concentrations of Starlings and blackbirds of several species. Two hundred fifty-two major blackbird and Starling roost sites, containing approximately 214 million birds, have been located throughout various parts of the United States, particularly in the lower Mississippi Valley. Included in this total were approximately 77 million redwings, 59 million grackles, 40 million Starlings, and a scattering of other birds. The per cent of the continental population represented in these roosts is unknown. Studies are continuing to locate additional major winter-concentration sites.

Other investigational phases on possible bird control procedures involve (1) evaluating visual and sonic scaring devices, (2) modifying cultural practices, such as developing and using bird resistant varieties of corn, and (3) continuing to search for chemical re-

pellents, selective lethal agents, stupefying drugs, and chemosterilants. Work is also continuing on population dynamics and the physiology of bird behavior, including their sensory perception. As new developments occur in other fields of science, their possible application to bird problems is considered. For example, the use of the laser phenomenon (light amplification by stimulated radiation) is being explored to determine its potential utility as a bird deterrent.

Findings from 1962 studies suggest that recorded distress cries of immature Yellow-headed Blackbirds are superior to those of other species for preventing crop damage by blackbirds. Tape recordings of their cries broadcasted over cornfields produced favorable responses. Likewise, broadcasting the cries from aircraft appears encouraging for driving flocks of depredating birds from fields. Another device, known as a simulated landmine, produces sound volumes for repellent effects several times greater than carbide exploders.

Despite the recognized desirability for preventing damage without killing birds, there are times and places when birds must be removed. Therefore, it is necessary to carry out investigations to discover and develop lethal materials and devices. This work includes a search for anesthetic agents that may be incorporated in bait material to produce sleep within three or four minutes. Compounds that affect muscular coordination and cause temporary immobility are being investigated to evaluate their utility as antiflying materials. Chemosterilants appear to offer one of the best means for limiting population levels of objectionable species. However, a great deal of basic research must be carried out before the use of any of these materials can be recommended for problem situations.

Regardless of one's views concerning the importance or need for control, it is apparent that greater effort must be devoted to finding ways and means of alleviating an increasing array of nuisance bird problems. Aside from those involving the introduced species (pigeons, sparrows, and Starlings), it is also recognized that better methods must be found to manage flocks of native forms, such as blackbirds and Herring Gulls. The growing use of jet aircraft makes it necessary to learn more about the habits and seasonal movements of all major problem species, particularly members of the gull family. Deep probing is needed to discover critical relationships between seasonal populations of birds and their environment, especially specific habitat requirements and behavioral responses. There is a continuing need and opportunity for both amateur and professional ornithologists to assist in the acquisition of this knowledge.

ENDANGERED SPECIES AND SUBSPECIES

In recent years, this section of the Committee's report has listed species in the endangered category with a minimum of discussion of the exact status of each species or without comments on major management efforts. This year we have attempted to give brief histories on some species to demonstrate how certain endangered birds are being or can be helped. Other threatened American species are merely listed.

When reading these case histories, please remember that the status of individual species can, in many instances, serve as an index to man's relation to his fellow creatures. Since the formation of the Wilson Ornithological Society in 1888, the Passenger Pigeon (1914), Carolina Parakeet (1915), and Heath Hen (1932) have passed from the face of the earth. These events are evidence of man not understanding his relationship to his environment or to his fellow living beings.

A great need still exists for developing our knowledge of habitat requirements and population characteristics of a number of species. Research is urgently needed on

many threatened species to establish the population status more adequately, to determine the factors limiting populations, and to develop sound management procedures aimed at insuring the perpetuation of each species.

In many cases, drastic steps will be required to save essential habitat that is decreasing rapidly and to apply known sound management practices to designated population units. With proper knowledge, land managers of all kinds would be enabled to make those seemingly small modifications of program that result in important habitat changes. Somehow, we must move to retain or restore that diversity of landscape that alone can insure that all other forms of life will find niches allotted them by evolution's new agent, man. Fortunately, state fish and game departments, some land-use branches of the federal government, and private groups and individuals are moving in these directions in scattered localities. With the majority of birds living on nongovernment lands, habitat management efforts by private people are of vital concern. Economics and the will of people probably will largely determine how widespread the efforts become.

Trumpeter Swan.—The history of the Trumpeter Swan is a perfect example of what modern wildlife research and management can accomplish when given adequate opportunities, resources, and funds. Estimates indicate that the continental population may have been as low as 100 in 1916 and perhaps as high as 1,500 in 1961 (Munro, 1962). This population increase is largely the result of providing protection from shooting and maintaining suitable habitat in national wildlife refuges. The Red Rock Lakes Refuge was established in Montana in 1935. From a total of 26 swans in 1932, this refuge population reached 380 in 1954 (Banko, 1960:146). Increases have also been recorded in Canadian nesting areas, and in recent years isolated pairs have been recorded in new locations (Munro, 1962). Breeding trumpeters dislike overcrowding. Some lakes used in Alberta are well over 1,000 acres in extent, but are large enough for only one swan family.

As the breeding populations enlarged, it became obvious that man must lend a helping hand, if the trumpeter was to be reestablished as a breeding bird in more locations in western Canada and the United States. The U.S. Fish and Wildlife Service has taken stock from the overcrowded Red Rock Lakes flock and attempted establishment of colonies at Ruby Lake Refuge (Nevada), National Elk Refuge (Wyoming), Malheur Refuge (Oregon), and La Creek Refuge (South Dakota). Nesting has occurred at all sites except the La Creek Refuge, where a transplant of cygnets was made in 1960.

In Canada, H. Albert Hochbaum of the Delta Waterfowl Research Station has developed the art of breeding trumpeters in captivity. Twelve cygnets were raised in the last three years. Birds from the Delta flock may eventually be used to attempt establishment of breeding groups at suitable locations in western Canada. The experiences in Canada and the United States all aid in developing an efficient transplantation program.

In 1959, the U.S. Bureau of Sport Fisheries and Wildlife initiated a cooperative program with public zoos permitting the conditional loan and display of the rare Trumpeter Swan. At least 18 public zoos, having an estimated total attendance of over 15 million people annually, now display 36 Trumpeter Swans under this educational program. An incomplete list of cities having swans include San Diego, Miami, Springfield (Illinois), New Orleans, Detroit, St. Paul (Minnesota), Kansas City (Missouri), New York, Toledo, Portland (Oregon), Philadelphia, Pittsburgh, San Antonio, Salt Lake City, Seattle, and Washington, D.C. A maximum of 10 pairs of swans was to be taken from the wild in 1962 for loan to additional qualified public zoos and institutions.

Management efforts in the past half century have helped assure the survival of the Trumpeter Swan. D. A. Munro (1962) concluded that "If numbers are to be maintained or increased through transplantation, we will have to keep a careful eye on swan habitat."

Filling, ditching, and draining of the swan's breeding grounds will continue to threaten this magnificent bird. Habitat preservation, transplantation, and continuing protection are essential features of the evolving management program.

Hawaiian Goose.—Historically, there may have been as many as 25,000 Nene in the world, all in Hawaii. An all-time population low was reached in 1950, when 17 birds were left in captivity and only 17 were known in the wild (Elder and Woodside, 1958). In 1949, the Board of Agriculture and Forestry of the Territory of Hawaii initiated propagation experiments with one pair of Nene obtained from Herbert Shipman, a rancher (Buchheister, 1962). An ecological investigation of wild Nene was conducted in 1957 (Elder and Woodside, 1958). As a result of this study, suitable habitat and other areas capable of restoration were identified and two sanctuaries were established under cooperative agreements with private ranch owners to give the birds needed protection. In 1958, Congress passed the Nene Goose Act, authorizing the U.S. Fish and Wildlife Service to spend \$15,000 per year for five years to conduct research and to develop restoration methods.

Reports indicate that between 50 and 75 Nene now exist in the wild in Hawaii, in addition to some 200 birds in captivity there and at the Severn Wildfowl Trust in England (Cottam, 1962*b*). Captive birds are being released in habitat that seems very favorable. This is a good case demonstrating that with adequate knowledge, determined people with imagination and adequate financing can save a rare species from extinction. Continued efforts are needed to insure a proper sustained management program.

The 5-year research and restoration project of the U.S. Fish and Wildlife Service is due to terminate in 1963. Buchheister (1962*a*) reported that some members of Congress have been blocking extension of the project on the grounds that since Hawaii has adopted the Nene as its official state bird, the United States as a whole should no longer feel any concern about it. As one of the world's rarest and most endangered species, its fate definitely seems a matter of national interest, as well as state responsibility. Encouragingly, Senator Daniel K. Inouye (Hawaii) has introduced a bill (S. 266) to secure funds for the conservation and restoration of the Nene. This proposal has been referred to the Senate Committee on Commerce (Natl. Wildl. Fed., 1963*h*).

Ross' Goose.—At one point in history, this small white goose was very rare. Most experts estimated that only 3,000 Ross' Geese existed in the not too distant past. It has been protected since 1931. Not until 1940 was the breeding ground discovered by Angus Gavin on the Perry River north of the Arctic Circle. In fall migration the Ross' Geese pass southeast to the region of Great Slave Lake and Lake Athabaska, then south along the eastern face of the Rocky Mountains to central Montana. From here they cross the Rockies, pass through southeast Oregon, Tule Lake, California, and finally enter their wintering grounds in the great central valleys of California's Sacramento and San Joaquin rivers (Morse, 1963).

Although protected, Ross' Geese are subject to some shooting throughout their entire migration. A few are bagged by Eskimos and Indians in the Far North and hunters in the United States accidentally shoot them for Snow Geese. A certain amount of mistaken identification by hunters seems inevitable; both species of white geese pass through the same general area and flocks often mingle.

In 1955, the Fish and Wildlife Service started a special mid-February census of the Ross' Goose on its restricted wintering grounds in California. From a total of 6,000 in 1955, the population has increased steadily to almost 28,000 in 1962 (Morse, 1963). While the Ross' Goose is in no immediate danger of extinction, additional knowledge of its distribution during nesting and migration is needed before more intensive man-

agement can be planned. Banding projects being conducted by the California Department of Fish and Game, the Canadian Wildlife Service, and the Fish and Wildlife Service will probably supply some of the essential information. Enforcement of regulations protecting the Ross' Goose will continue to be a difficult job. In addition, intensive educational efforts will be required to encourage hunters to learn species in flight. Whether or not populations of this species can enlarge sufficiently to again permit a hunting season of any type remains to be seen.

Aleutian Canada Goose.—This rare bird nests on the Aleutian Islands, including Buldir Island of the Aleutian Islands National Wildlife Refuge. It probably winters with other races of Canada geese in the interior valleys of California and possibly in other western areas. The goose populations declined drastically after blue foxes were introduced to the Aleutian Islands to increase the natives' fur catch. Foxes preyed on goose eggs and young and probably on nesting geese (Cottam, 1962*b*). Foxes were not released on Buldir Island, where 300 of these geese were observed in 1962. The Fish and Wildlife Service captured seven goslings to start a captive flock for restocking. Elimination of the introduced fox on the best known goose nesting islands is also being attempted. Restocking can follow removal of the fox. Additional research is vital to learn where the birds winter. After better information on the distribution and status of this goose is available, management efforts can improve.

Giant Canada Goose.—Until 1962, this magnificent bird appeared to be extinct. Rediscovery of a wintering flock of 6,000 Giant Canada Geese at Rochester, Minnesota by Harold C. Hanson of the Illinois Natural History Survey alerted conservationists. Subsequently, Dr. Hanson has established the existence of at least an additional few thousand of these birds in the Midwest. Certainly these findings should stimulate both amateur and professional conservationists to examine even some of our commonest birds very carefully. Discoveries can be most significant. Knowledge of the status, distribution, and habits of subpopulations of Canada geese is needed to mold effective management programs for individual populations. Development of management programs covering the entire range of individual populations of geese is a stimulating challenge facing wildlife agencies in Canada and the United States, as well as all other interested people.

Tule White-fronted Goose.—This bird is seriously endangered (Cottam, 1962*b*). Little is known of its nesting and wintering grounds. Because this race frequents some of the same geographic areas as do other races of this species that are hunted, some are probably shot. Research is urgently needed to assemble facts and more adequately determine the status of this goose.

Laysan Duck.—This nonmigratory and essentially terrestrial duck now occurs only on the 709-acre Laysan Island, Hawaii (Warner, 1963). Prior to disturbance the population was approximately 600 in 1893. In the next 20 years hunting and destruction of important vegetative cover by introduced rabbits reduced the duck population to approximately seven individuals in 1912. In 1909, the Hawaiian Islands Refuge was established, which included Laysan Island. After rabbits were eliminated from the island by about 1924, vegetation became reestablished. With more suitable habitat and protection, the duck population steadily increased. A census in 1961 yielded 688 ducks, or approximately one bird per vegetated acre of island (Warner, 1963). A population of about 600 ducks is apparently what the island can support in its present condition. The species is now entirely terrestrial during spring and summer, largely nocturnal, insectivorous, and has adapted to a habitat devoid of standing fresh water (Warner, 1963). In addition to the wild populations, captive breeding populations are being maintained at nine locations in America and England. Response of this rare species to protection, the island's recovered

flora, and captivity is heartening. However, continued efforts by conservationists are needed to maintain this duck's healthy status.

Mexican Duck.—Recent evidence helped confirm the view that the New Mexican Duck is synonymous with the Mexican Duck (Johnsgaard, 1961:37). The adult Mexican Duck population in Mexico is probably less than 20,000 birds (Johnsgaard, 1961:5). In New Mexico, the wild population of this duck is estimated at 150 during peak periods (Huey, 1963). Formerly it was found commonly on sloughs and bosques between Albuquerque and the Texas boundary. Extensive drainage along the Rio Grande has all but destroyed the vital nesting habitat. In 1958, a project was initiated to preserve and restore the subspecies in New Mexico by establishing a captive flock, the progeny of which would be released into rehabilitated or developed habitat (Huey, 1963). Five ducklings were trapped in 1959 to form the nucleus for the captive flock. Subsequently a few more birds were added. In 1961, 25 of 32 ducklings hatched in captivity were raised to maturity. Pairs of these young ducks were distributed to aviculturists who agreed to assist in the propagation effort. In 1962, 16 pairs of Mexican Ducks were provided the U.S. Bureau of Sport Fisheries and Wildlife for a captive flock at the Bosque del Apache National Wildlife Refuge. The first releases of ducklings into suitable wild habitat are planned on a limited basis for 1963. These initial efforts of personnel of the New Mexico Department of Game and Fish constitute a valuable timely contribution toward the welfare of this subspecies within their state.

Hawaiian Duck.—The exact status of this bird is uncertain, although it is known to be in a precarious state (Cottam, 1962*b*). This small Mallard-like duck is gravely endangered by destruction of its essential habitat. More information on the abundance of this duck is required. Officers of the World Wildlife Fund have appropriated money to start in Hawaii a propagation program similar to the one that has helped so greatly to improve the status of the Nene.

Other Hawaiian birds.—The Hawaiian Gallinule and, to a lesser extent, the coot and stilt are seriously endangered by loss of essential habitat. On the islands a total of 11 endemic species is now considered endangered (Cottam et al., 1962). How many of these threatened species will be added to the list of 14 species already believed to be extinct (Peterson, 1961:331), will be determined by time and the efforts of conservationists.

Bald Eagle.—Since Congress selected the "American Eagle" as our national bird in 1782, efforts have been directed toward considering the bird's welfare. The Bald Eagle Act of 1940 gave protection to the bird. Subsequent concern over the status of the Bald Eagle led to the establishment of the cooperative Continental Bald Eagle Project under the auspices of the National Audubon Society. Under this project, the first continental winter inventory of Bald Eagles was completed in January 1961, with a total of 3,642 birds being reported in the United States, exclusive of Alaska. On a subsequent census in January 1962, a total of 3,807 birds was counted (Sprunt and Cunningham, 1962). Improvement in coverage on the census probably resulted in more birds being seen in 1962. Four major winter-concentration areas have been established: Middle West, 57 per cent; Florida, 14 per cent; Pacific Northwest, 10 per cent; and Middle Atlantic, 6 per cent. The Chesapeake Bay region is an important wintering area in the east. Over a third of the reported U.S. eagle population occurred in the Mississippi Valley between southern Minnesota and Arkansas.

Of major concern is the wide range in reproductive success in Bald Eagles. Nesting success in 1962 in the East Coast (Virginia to Maine) population was only about 10 per cent; in the Middle West (Wisconsin-Michigan-Ohio), 40.5 per cent; and in southern Florida, 57 per cent. Available evidence suggests that pesticides may be involved in cur-

tailoring reproduction (Dewitt and Buckley, 1962). Of 27 dead Bald Eagles shipped to the Patuxent Wildlife Research Laboratory for analysis, all but one (from Alaska) had measurable amounts of DDT or its metabolites in their tissues. Studies on captive eagles in Alaska by the U.S. Fish and Wildlife Service showed that all eagles fed 160 ppm or more of DDT developed severe tremors and died. Effect of exposure to DDT on spermatogenesis is being investigated. Three Bald Eagle eggs collected from unsuccessful nests in New Jersey contained DDT.

Despite federal protection since 1941, the gun remains an important cause of death of eagles. The National Audubon Society tabulated the cause of death of 118 eagles and found that 77 per cent were shot (Sprunt and Cunningham, 1962). This loss, attributable to irresponsible shooting, was not determined by a scientifically satisfactory procedure. However, it is a good clue indicating the magnitude of the education and enforcement job that remains to be done.

An important step in intensifying protection for the Bald Eagle was achieved in 1962. The first cooperative Bald Eagle Sanctuary was established in Florida under the direction of the Florida Audubon Society. A total of 59 ranchers in the Kissimmee River Valley agreed to the cooperative plan and brought 659,000 acres into the protected area. Sixty-five active eagle nests were located on these lands. Each rancher has agreed to (1) protect the eagles from disturbance, (2) protect the nests, (3) refrain from removing any nest trees until at least one breeding season has passed without eagles being present, (4) allow Audubon personnel to post the land and inspect the nests, and (5) notify the Florida Audubon Society in the event his land is sold. This approach of maintaining suitable habitat for the Bald Eagle on private lands through a cooperative arrangement deserves special attention. It may have application in other locations and for other species of wildlife. The National Audubon Society is presently drafting recommendations designed to protect eagle nesting habitat.

The New Jersey Audubon Society is also promoting habitat management for the Bald Eagle. They suggested that the U.S. Fish and Wildlife Service plant pitch pines in suitable locations on National Wildlife Refuges for future eagle nesting sites. This is being undertaken.

The National Audubon Society is continuing its important two-phase Continental Bald Eagle Project. Phase I deals with population status and distribution, while Phase II is concerned with detailed studies of eagle biology.

Golden Eagle.—On 24 October 1962, Congress amended the Bald Eagle Act of 1940 to extend statutory protection from shooting to the Golden Eagle. Support was generated when individual members of Congress learned that approval of the law also could indirectly benefit immature Bald Eagles, which, in the field, can be easily mistaken for Golden Eagles. Senate sponsors were forced to accept an amendment authorizing the shooting of Golden Eagles on petition of a Governor and a finding of the Secretary of the Interior that livestock, agriculture, or other interests are being damaged. The Interior Department subsequently proposed regulations to implement the Act. On objections from several members of Congress and from conservationists, the provision that would have allowed the emergency taking of Golden Eagles from airplanes was eliminated. The law now requires the Secretary of the Interior, when requested by the Governor of any state, to authorize the taking of Golden Eagles for the seasonal protection of livestock for such time and in such areas as the Secretary considers necessary. Secretary Udall has received a request from the Governor of Texas and has authorized the killing of Golden Eagles—except by poison and from airplanes—by livestock operators and their agents in 28 Texas counties (Nat. Aud. Soc., 1963e). Both the Fish and Wildlife Service and the

National Audubon Society had qualified personnel in Texas to conduct a field study of Golden Eagle depredations in the designated area during the period covered by the special permit, which ended 30 April 1963. It is indeed encouraging to note that an objective evaluation of the anticipated depredations was carried out.

Kites.—All species of kites are in short supply and decreasing (Cottam, 1962*b*). The Florida Everglade Kite population probably now consists of four males and two females. These birds are restricted to a narrow belt on the shore of Lake Okeechobee in southern Florida.

Other raptors.—The National Audubon Society recently completed a survey of state laws providing protection to hawks and owls (Natl. Aud. Soc., 1963*f*). Nineteen states now protect all raptors, 26 others protect some, and in four states (Arkansas, Montana, Nevada, and New Mexico) none are protected. Specific information is lacking for Hawaii. However, our newest state probably does not have a law to protect the Hawaiian Hawk and two species of owls. A copy of the complete summary can be secured from R. C. Clement of the National Audubon Society.

Besides protection from shooting, many raptors are threatened with possible inhibition of reproduction from chemical compounds applied as pesticides and potentially concentrated in organisms serving as food. Expanding on remarks made at the 1962 Audubon Convention in Texas, R. T. Peterson (personal communication) stated that he felt the decline of Ospreys on the Connecticut coast and the virtual disappearance of the Peregrine Falcon as nesting birds in the New York City region, including the Palisades of the Hudson Valley, may be due to chemical poisoning. Unpublished studies of Ospreys in Connecticut by Peter Ames show accumulations of DDE in eggs which failed to hatch. Laboratory studies are needed to establish the relationship between reproductive capacities of raptors and reported or continuous exposure to sublethal quantities of pesticides.

California Condor.—America's largest vulture has maintained a population of approximately 60 birds for more than a dozen years in the mountains in California (Cottam, 1962*b*). The condor's future is questionable. Man is extending roads into the mountain retreat of this shy bird. Wildland meeting the habitat requirements of this species is being converted to other human uses. The National Audubon Society is now reassessing the condor's population and chances for continued survival.

Attwater Prairie Chicken.—Before the turn of the century this bird was abundant in the grassy prairies along almost the entire Gulf Coast of Texas and halfway across Louisiana. Conversion of the wild prairie to cropland, heavy grazing, clean farming, and relentless slaughter reduced the original population of possibly a million birds in Texas to about 8,700 in 1937, and now probably to a few hundred (Cottam, 1962*a*). In 1960, the remaining birds were scattered over 11 counties in small disjunct populations. These small remnants are well protected. However, there is an urgent need for state, federal, and private interests to develop a sound habitat management program to meet the restrictive habitat requirements of this species.

Greater Prairie Chicken.—This grouse declined rapidly as its former prairie habitat was converted to cropland (Hamerstrom, F. and F., 1960). While fairly continuous populations, varying from low to medium density, still inhabit parts of North Dakota, South Dakota, and Nebraska, only comparatively small and isolated populations survive in Wisconsin, Michigan, Minnesota, Illinois, Missouri, and Indiana. Although prairie chickens have been numerous enough in the Dakotas and Nebraska to permit some hunting during recent years, small populations in other states have been protected from shooting. Closed seasons have not brought the Prairie Chicken back to former abundance. Lands entered under the Soil Bank Program have helped its survival in some localities.

Provision of undisturbed nesting cover has aided the birds in Missouri and Wisconsin. A private foundation in Wisconsin has contributed over \$100,000 for the habitat management program. Lands obtained with the private funds are turned over to the Wisconsin Conservation Department for development and maintenance. In many states the habitat situation is much more critical. The chief problems have been the lack of sufficient public interest and funds to support management measures required to insure survival of the scattered remnant populations. These same conditions prevail for the Lesser Prairie Chicken.

Whooping Crane.—This bird suffered a setback in 1962. No young were produced and six adult or subadult birds were lost, dropping the total population to 32 wild birds. Apparently production was hampered by late ice conditions on the Canadian breeding grounds. This decline in numbers of cranes is neither unprecedented nor irreversible, and should not be the basis of alarmists calling for the wild flock to be placed in captivity.

In addition to the wild whoopers, seven are in captivity, of which six are in the Audubon Park Zoo in New Orleans and one cripple in the zoo at San Antonio, Texas (Cottam, 1962*b*).

The U.S. Bureau of Sport Fisheries and Wildlife is continuing its periodic crane censuses and public educational efforts to protect the birds. The National Audubon Society is helping provide added protection on the Texas coast wintering grounds. People in Canada contributed importantly in 1961–62 by diverting the location of a proposed railroad construction project which threatened to disrupt the crane breeding grounds in Wood Buffalo Park located in the District of MacKenzie and Alberta. The small total numbers, low rate of reproduction, and restricted winter range continue to make the status of whoopers serious. Flyway education and protection efforts deserve increased emphasis for the wild cranes. Better techniques are needed to handle captive birds.

Eskimo Curlew.—During the existence of the Wilson Ornithological Society (1888–1963), this bird has gone from a period of abundance, to almost extinction, to rediscovery. In 1887, E. W. Nelson found it the most abundant curlew at Kotzebue Sound, Alaska (Emanuel, 1962). By 1900, its numbers were so reduced that Joseph Grinnell could not find a single Eskimo Curlew at the same location. For 14 years prior to 1959 there were no published sight records of this formerly abundant shorebird (Emanuel, 1962). On 22 March 1959, a strange curlew was observed on Galveston Island, Texas. It was tentatively identified as an Eskimo Curlew. A single bird was observed at Galveston Island in spring in 1960 and 1961. In 1962, two birds were observed simultaneously (Emanuel, 1962). The true identity of these birds remains to be confirmed. However, these sight records suggest that the Eskimo Curlew still exists in at least very meager numbers. Both amateur and professional ornithologists should examine shorebirds in the field with increased care. They may be rewarded with a new sight record of the Eskimo Curlew and add to the knowledge of the distribution of this rare species.

Wading and other water birds.—Status and challenging management possibilities for many of these birds were recently reported (Cottam, 1962*b*; Cottam et al., 1962). Highlights of these statements are summarized here. The Roseate Spoonbill, Wood Ibis, Reddish Egret, and Hudsonian Godwit are still uncommon and need effective protection, as do all waders. The Hawaiian Gallinule is found on three islands of Hawaii and is endangered because of drainage and destruction of habitat. Likewise, the Hawaiian Stilt is endangered by loss of habitat.

Vigorous protection of nesting islands is needed for many of the colonial nesting water birds, including terns, skimmers, herons, ibises, and egrets. Accretion islands afford

some of the best nesting sites along the Gulf Coast, particularly in Texas. The Fish and Wildlife Service and state game departments can contribute by encouraging dredging companies and operators to construct suitable islands and locate them in the most desirable places. The Fish and Wildlife Service, because of its close cooperation with the U.S. Corps of Engineers and Bureau of Reclamation, has already furnished much help along this line. W.O.S. members, state and local bird and nature clubs, and civic organizations can render great service by getting title to many of these areas turned over to organizations that recognize their value and who will provide the necessary management. National conservation organizations, such as the National Audubon Society and the Nature Conservancy, at times can and do help in obtaining titles and in making arrangements for protection and management.

Kirtland's Warbler.—This rare wood warbler now probably numbers about 1,000 (Mayfield, 1963). It inhabits a narrow and transitory habitat for nesting in Michigan and winters only in the Bahama Islands. The ecology of the wintering grounds is unknown. Attempts to establish special management areas for breeders were started in 1955. In 1957, the Michigan Conservation Commission formally established three warbler management areas totaling 7,680 acres (Radke and Byelich, 1963). In 1962, the Forest Service established an additional 4,010-acre warbler management area on the Lower Michigan National Forest. Both agencies are to be commended highly for designating these sites and for adjusting forest management practices to maintain suitable nesting habitat for this rare songbird. Recent reports in *The Wilson Bulletin* on intensive breeding habitat management for the Kirtland's Warbler are highly recommended for reading. A remaining pressing need is to learn the problems this bird faces on its wintering grounds.

Ivory-billed Woodpecker.—Reports within the past two years indicate the possibility of one bird being in South Carolina and up to five in east Texas (Cottam et al., 1962). In view of the extremely precarious status of this large woodpecker, more intensive efforts to protect the few survivors seem appropriate in the localities frequented by the birds.

Puerto Rican Parrot.—Restricted forest habitat and predation by rats endanger this bird (Cottam, 1962b). A population of some 200 remains. Although the nature of efforts is unknown to us at this time, we understand that attempts are being made to help this species.

Other American birds.—Other species endangered or having seriously reduced populations include the following:

- Bachman's Warbler
- Harlequin Quail
- Puerto Rican Whip-poor-will
- Cape Sable Seaside Sparrow
- Dusky Seaside Sparrow
- Ipswich Sparrow
- Song Sparrow (three races in the San Francisco Bay area).

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