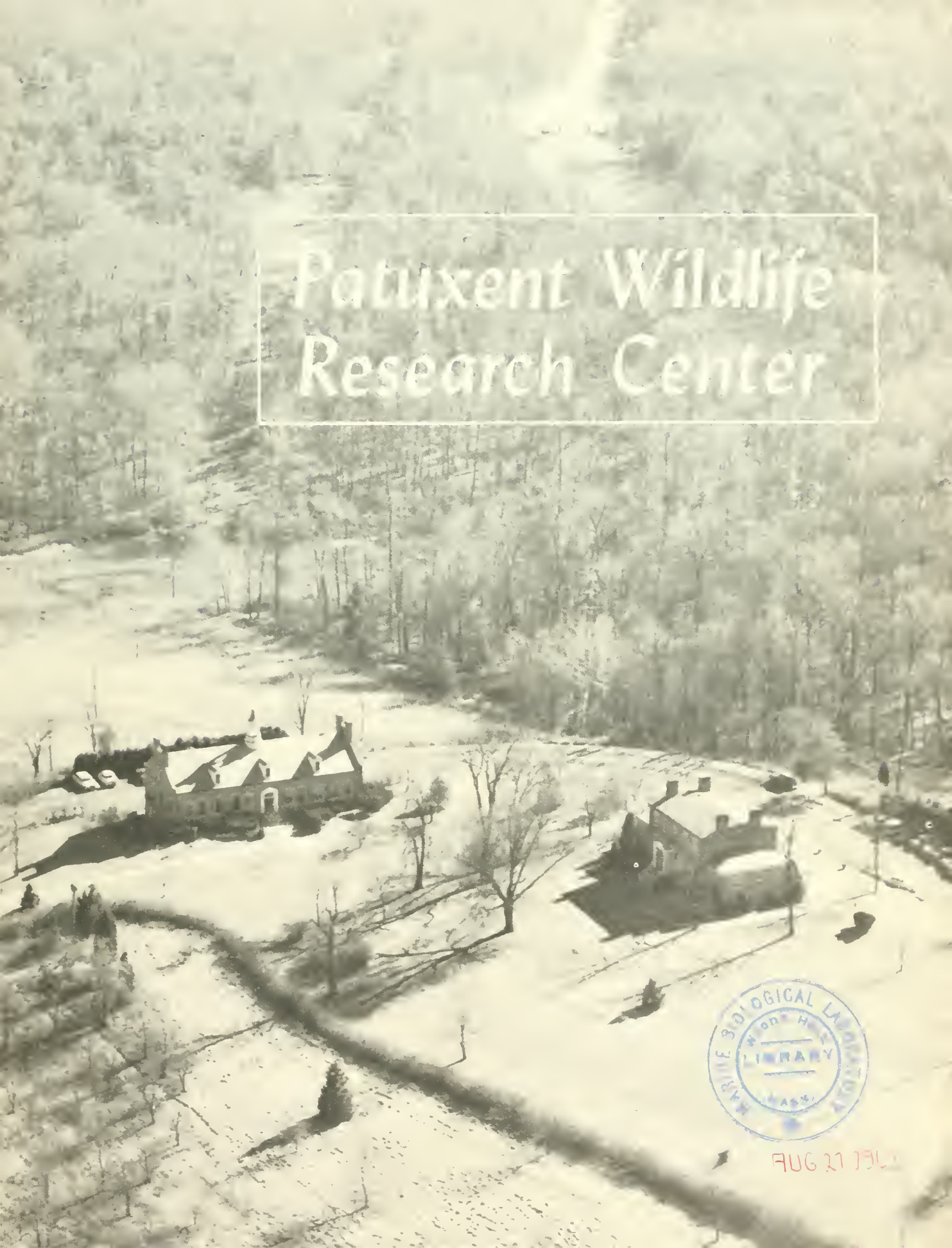


Patuxent Wildlife Research Center



AUG 27 1960



Patuxent Wildlife Research Center

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BRANCH OF WILDLIFE RESEARCH















Daniel L. Leedy, *Chief*

PATUXENT WILDLIFE RESEARCH CENTER

John L. Buckley, *Director*

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Cover—View of the headquarters area at Patuxent Wildlife Research Center. The buildings are identified on the map on pages 12 and 13.

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Snowden Hall—Colonial manor house built by the Snowden family over 200 years ago, now used as temporary office quarters.

The beginning

This modern center of research on wildlife occupies part of a colonial manor of three centuries ago.

In 1658, when Maj. Richard Snowden of Wales emigrated to America, he acquired some 10,000 acres in the central part of the new colony of Maryland. His estate included most of the present Patuxent Wildlife Research Center. Snowden Hall, still standing at the Center's headquarters, was one of seven manor houses built by the Snowden family.

Through the years, the land was cleared and cropped and divided into smaller holdings, and in time the soil was depleted. In the 1930's much of the land was classed as submarginal

farmland and was taken over by the Resettlement Administration. In 1936 the Bureau of Biological Survey, predecessor of the Bureau of Sport Fisheries and Wildlife, obtained 2,670 acres of this forest and farmland along the Patuxent River, as the site of the first major wildlife research station in the United States.

In 1939, preliminary surveys and essential construction were completed, and the Center was dedicated on June 30, in the presence of conservation leaders of the United States Congress and representatives of many public and private conservation organizations, who recognized the significance of this event in American wildlife conservation.

The Center, its work and its facilities

The Center is the Bureau's eastern headquarters for research on wildlife problems of general concern. It is on Maryland Route 197, about halfway between Laurel and Bowie, and adjoins the Beltsville Agricultural Research Center of the U.S. Department of Agriculture. Research is conducted on such subjects as management of wetlands for waterfowl, wildlife management on forest and agricultural lands, control of bird damage to farm crops, control of diseases and parasites of wildlife, effects of pesticides on wildlife, and status and distribution of migratory birds.

Of the research staff of some 115 employees, about half are scientists and technicians. Major facilities are 2 laboratories, 2 office buildings, 2 fenced areas with buildings and pens for small animals, 3 experimental farm areas, 20 water impoundments, and sizable tracts of flood plain and upland forest.

The Center operates field stations in Delaware, Virginia, North Carolina, Alabama, Florida, and Louisiana. Scientists of the Center frequently use areas and wildlife populations in other States for field experiments. On many research projects

they are assisted by other Branches of the Bureau, other land-use agencies of the Federal Government, State conservation departments, and colleges and universities. Results of research are made available in various Bureau publications, in scientific journals, and at national and regional conferences.

Although the Center is reserved primarily for research, a few other Bureau activities are located here. The Atlantic Flyway Representative, with headquarters at the Center, is liaison officer between the Bureau and the conservation departments of eastern States on waterfowl conservation and management. He participates in the work of the Atlantic Waterfowl Flyway Council, a waterfowl management coordinating group representing the States in the flyway.

The Atlantic Flyway Biologist also is stationed at the Center. He makes aerial surveys of waterfowl populations and distribution.

Wildlife Review, the Bureau's journal of wildlife bibliography, is prepared and issued from the Center as a service to conservation agencies and libraries, educational institutions, and research biologists.

Atlantic Flyway biologist checking flight plans for waterfowl survey.



Developing new habitats for waterfowl

Waterfowl biologists at the Center are testing methods and materials for development of duck nesting and feeding areas on lands that are not in demand for other purposes. Rarely are wetlands preserved for waterfowl or other wildlife values if they can be drained for farming or filled in for industrial or other uses. More than half of the country's original 127,000,000 acres of wetlands have already been spoiled or destroyed for waterfowl use, and the destruction continues.

Biologists have planned their experiments to find ways to create ponds and marshes where waterfowl can nest and feed and to increase the productivity of remaining areas. The Center has constructed 20 lakes and ponds in which water levels can be regulated to provide a variety of conditions for studying the growth of waterfowl food plants. Most of these impoundments, 1 to 53 acres in size, are in former swamps, gravel pits, or similar waste areas (see map, pp. 12 and 13).

Even though many of the impoundments are still in early stages of development, the migratory waterfowl population of the Center has increased each year. On approximately 160 acres of these partially developed areas, up to 3,000 migratory waterfowl now find a suitable place to winter where none existed before. In 1959, 66 broods of waterfowl were produced, with a total of 415 young. Among the nesters are wood ducks, mallards, Canada geese, and black ducks. The biologists found that after construction of several small islands, where nests were safer from predators, geese were more successful in hatching and rearing their young. Trials are underway to find ways to provide safe nesting structures for wood ducks and mallards.

Water drawdown in ponds is a promising technique for increasing waterfowl-food production. Where feasible, ponds are constructed in pairs or groups so that one pond of a pair can be drained in summer and seeded to waterfowl-food plants such as panic grasses, wild millets, or smartweeds. When the crop is ripe in the fall, the pond is flooded again to make the seed available as food to migrating and wintering birds. This pond re-

mains flooded through the next year while its counterpart is drained and seeded. If the same pond were drained each year, undesirable plants would begin to replace food-producing ones. With drawdowns in alternate years, seed production can be maintained year after year without reseeding.

The problem of providing food cannot be solved so simply in all water areas. Permanent ponds have their special problems. For example, runoff from fields causes turbidity in ponds with clay-soil bottoms, as does the rooting of carp and bullheads. Clouded water interferes with the penetration of sunlight, necessary for a good growth of waterfowl-food plants. Desirable plants do not grow well in dark-stained waters or in those that are acid or shaded. Biologists are directing their research both toward finding immediate remedies, such as liming, and toward finding the best plants for growing in acid water or in poor light.



Building steel-reinforced concrete water-control structure for new waterfowl impoundment.



Cash Lake at full pool. Rice cutgrass, wild millets, panic grasses, and smartweeds grown during summer in the drained lake bed became available as food for waterfowl after flooding in early fall.

Below: Left—Raccoon climbing metal post to wood-duck nest box in search of eggs. Right—Bracket-type mounting for wood-duck nest box developed at Center to prevent raccoons from entering boxes.



Biologist examining native wildrice, an important food for migratory waterfowl.



Controlling pest plants in marshes

One of the best ways to improve food conditions for waterfowl is to replace undesirable plants with desirable species of high food value, but that is not always easy to do in marshes. Patuxent biologists are conducting field studies on pest-plant control in experimental plots in various States from New York to South Carolina. Alligatorweed, cattails, needlerush, waterchestnut, watermilfoil, and phragmites are a few of the species for which

control measures are being developed. Burning, fluctuating water levels, mechanical control, and herbicides are common approaches in destroying unwanted marsh and water plants. Special emphasis is placed on testing new herbicides developed by the chemical industry. Several of these are proving to be important tools in management of Federal and State waterfowl areas and of private and commercial marshes.

Waterchestnut, an introduced Eurasian plant, blankets water surface where it occurs and shades out growths of desirable waterfowl-food plants.





Through research it has been found that applications of granular 2,4-D effectively destroy waterchestnut infestations. Airtight boat is used to apply chemical treatment.



The Back Bay-Currituck Sound problem

The Back Bay-Currituck Sound area of Virginia and North Carolina is one of the important waterfowl concentration areas on the east coast. More than a million ducks, geese, coots, and swans were reported wintering there in the 1940's. Only a seventh of that number winter there now. In cooperation with the States of Virginia and North Carolina, a Patuxent biologist is stationed in that area to investigate this sharp decline in waterfowl numbers. Man and nature have made many changes in and around this waterfowl haven, and

determining what changes are responsible for the decline in the waterfowl population is a complex job. The biologist's approach is to study the waterfowl of the area, the environment that produces their food supply, and the activities of man in and about the Bay as they may relate to the problem. The goal is to restore this ancestral home of migratory fowl to its former usefulness as a wintering area. If this can be accomplished, the remedial procedures would have application in a number of other coastal waters.

Modern diving equipment is used in research on waterfowl food plants in Back Bay and Currituck Sound.



Migratory bird populations

Management and conservation of migratory birds, including waterfowl, mourning doves, rails, snipe, woodcock, and many song birds, are the responsibility of the Bureau of Sport Fisheries and Wildlife under Migratory Bird Treaties between the United States and Canada and Mexico. Patuxent biologists and statisticians help the Bureau to meet this responsibility, primarily by developing techniques of measuring production and status of populations, and by supplying facts on migration, distribution, and biology of the various species.

They appraise the effects of Federal hunting regulations on the number of waterfowl shot each year in the United States. They make these appraisals in part by a statistically planned survey of hunters. In 1957, the survey showed that 17 million ducks, geese, and coots were bagged. They also estimate the waterfowl kill in a particular State when the State wishes the information and shares the expense of obtaining it.

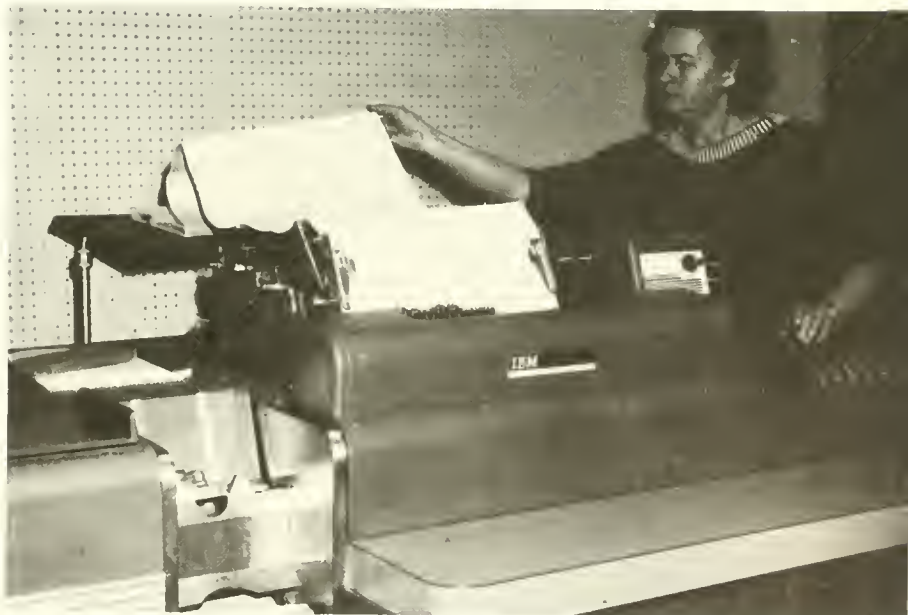
Files of the Center's Bird Banding Office hold records of all birds banded in the United States and Canada since cooperative banding began in the 1920's. Records are coded on punch cards. By machine tabulation of these cards biologists can learn just where and when birds were banded and where and when they were captured or shot.

They use these records in many ways, but especially to evaluate mortality—how much and where and when it occurs in different parts of the Americas. From this information, they pinpoint problem areas and make management recommendations.

They are experimenting with methods for using wings sent in by hunters to measure success of the waterfowl breeding season. They have developed good visual methods for "aging" snow, blue, and white-fronted geese for use in aerial surveys of wintering populations. Estimates of the breeding success can be made from these data, and such estimates guide the Bureau in setting bag limits and length of hunting season.

In many States mourning doves, woodcock, and snipe are popular gamebirds. Biologists at Patuxent and in the States are working together to learn more of the migration, biology, and habits of these birds as a basis for better hunting regulations. They are testing improved methods of estimating woodcock and dove numbers during the breeding season; they are collaborating in research to find suitable sampling methods of measuring the annual take of doves by hunters; and they are cooperating in winter counts of snipe to provide the Bureau with current information on the status of that species.

Tabulating machines and skilled operators summarize distribution of waterfowl mortality in the United States and Canada.





Age of a baldpate duck can be determined by examining wing feathers. This type of aging technique is used to measure annual production of several kinds of waterfowl.

The Center directs several cooperative programs aimed at understanding the status and migratory habits of song birds. General migration patterns and trends are followed by means of an annual inquiry sent to 3,000 observers across the country. The observers report on the abundance of about 40 key species of birds selected as representative. Seasonal counts by qualified observers and a cooperative netting and banding program give more detailed information. Migration patterns of hawks and owls over a 10-year

period are now being summarized. Special attention is being given to the bald eagle, our national bird, whose numbers are reported to be waning sharply in the eastern part of the United States.

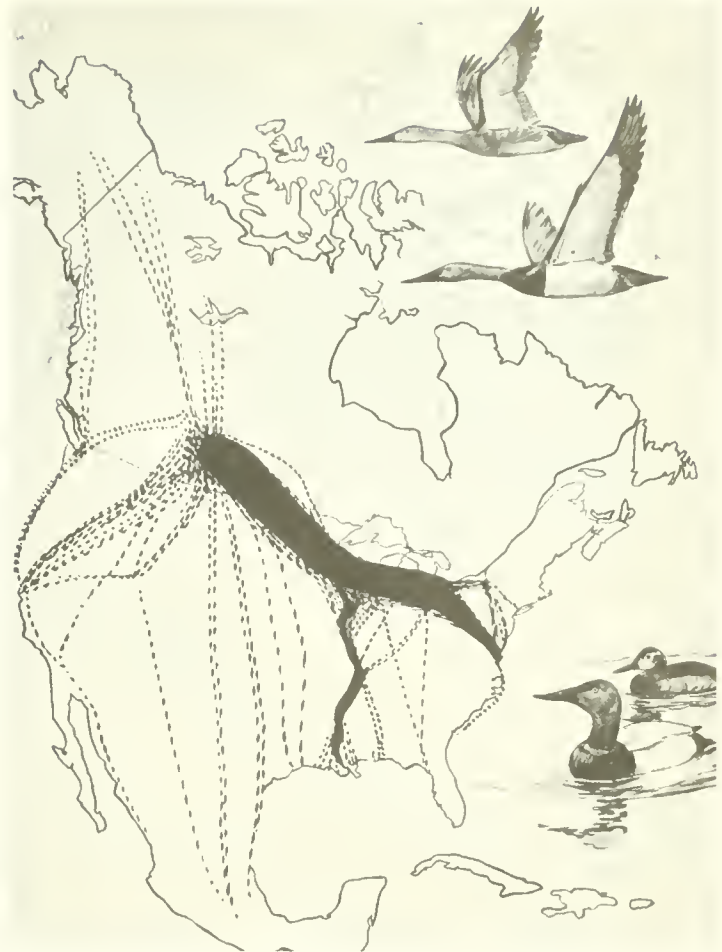
The Bird Banding Office has records of bird distribution in the United States from 1881 to the present. These files of original and published reports on bird distribution are the chief source of basic information on this subject in the United States.

U.S. Game Management Agent receiving mallard from trained Labrador retriever. The bird will be banded and released.





By analysis of banding returns it was possible to prepare this diagrammatic map showing the principal migration routes of the canvasback. Each dotted line represents the course followed by approximately 3,000 wintering birds.



Pesticide-wildlife studies

When DDT was a new chemical in 1945, entomologists of the U.S. Bureau of Entomology and Plant Quarantine were anxious to test it for control of the gypsy moth and spruce budworm, insects that cause extensive damage to eastern forests. They hoped to use doses and techniques that would not damage the wildlife of the forests, so they discussed the problem with biologists at Patuxent. Together the two groups conducted field experiments in Pennsylvania and New York and on two wooded areas of the Patuxent Center. The results of these experiments established guidelines for reasonably safe use of DDT in pest control. This research made possible extensive forest-insect control with a minimum of observable damage to warm-blooded animals.

Since then, chemists have developed many new, potent, long-lasting poisons, and pest-control programs have greatly increased in number and extent—in 1958, airplanes spread chemicals upon 60,000,000 acres of land in the United States. Research on the effects of new pesticides on wildlife has rarely preceded operations in recent years, and damage to wildlife has been well documented. As a result, Congress in August 1958 directed the Secretary of Interior “to undertake comprehensive continuing studies on the effects of insecticides, herbicides, fungicides and pesticides, upon the fish and wildlife resources of the United States . . . and thereby prevent losses of fish and wildlife from such spraying, dusting, or other treatment.”

Patuxent is the principal headquarters for this

research in the East. Biologists assigned to the Center and stationed at Gadsden, Ala., are measuring the effects of dieldrin and heptachlor on wildlife in the Southeast, where these chemicals are used in a large-scale program against the imported fire ant. In three field tests they have found that bobwhite quail populations were reduced 85 percent after applications of 2 pounds of granular heptachlor to the acre. In these same tests, many other bird and mammal species were also sharply reduced in numbers.

Several universities, under contracts with the Bureau of Sport Fisheries and Wildlife, are working with Patuxent scientists to find answers to specific questions about the effects of dieldrin, heptachlor, and other insecticides on migratory birds. Chemists at Patuxent determine the amount of poison in samples of birds and mammals found dead in areas that have been treated with pesticide chemicals. They conduct controlled experiments with pheasants, quail, and mallard ducks to measure the effects of various pesticides on production of eggs, hatchability of eggs, crippling of chicks, and survival of young. These experiments have revealed, for example, that pheasants, fed a diet containing small amounts of dieldrin, laid eggs that hatched poorly and produced a greater than normal number of crippled chicks. Bird-production facilities at Patuxent are adequate to supply 1,000 mallard ducks, 3,000 quail, and 1,500 pheasant each year for research on the physiological and toxic effects of pesticide chemicals.

Widespread chemical treatments underway in the Southeast may affect many migratory birds that winter there. The woodcock is particularly vulnerable, as its winter range is centered in the southern Coastal Plain. The principal food

of this species is earthworms, which can concentrate as much as 10 parts per million of poison in their bodies. By feeding on contaminated earthworms, the woodcock can be slowly poisoned. Patuxent biologists and chemists are studying trends in numbers of woodcock, their breeding success, and the extent of poison contamination in woodcock populations. In this effort, thousands of sportsmen of the northern and northeastern States are helping by sending in woodcock wings. Since young of the year differ from adults in certain wing features, biologists can use wings to measure success of the breeding season and thereby learn each year whether the birds have reproduced normally.

When first used for mosquito control over marshes, DDT proved to be a very effective pesticide. Within a few years, though, some mosquitoes began to develop resistance to the chemical, and again the mosquito problem was acute. As doses had to be increased or more poisonous materials used to accomplish control, reports of damage to fish and wildlife increased. Patuxent biologists are working with entomologists on this common problem in an effort to develop mosquito-control techniques that will not harm waterfowl and other wildlife and that may actually improve conditions for them. The most promising leads include water-level control, management of vegetation, and introduction of fish that eat mosquitoes.

Through intensive research on the hazards of chemicals to wildlife and on substitute methods for combating mosquitoes, the Patuxent Center is contributing substantially to the development of safer and more specific methods of pest-insect control.

Chemist extracting pesticides from animal tissue.





Biologist dipping for mosquito larvae in a Center waterfowl impoundment. This water area has an abundance of top minnows which effectively control mosquito production.

Diseases and parasites of wildlife

Wild birds and mammals are subject to infection with many diseases and parasites, some of which are transmissible to man and his domestic animals. When a disease is epidemic, dead birds and animals may be noticed by the general public and reported to conservation agencies. Tularemia in rabbits, hemorrhagic septicemia in deer, rabies in foxes, and botulism in waterfowl are examples of diseases that produce high mortality when they occur in epidemic proportions. But most wildlife diseases have an effect that is less noticeable. For the most part, losses from them go by unobserved, although

they may finally reduce populations to such low levels that the loss is apparent to the public. Identifying the bacterium, virus, or parasite causing

Pathologists inoculating Canada goose.



an infection, determining the extent of occurrence of specific infections in wildlife populations, tracing the cycle of infection and the mode of transmission to wildlife species, and appraising the effect of the infection on an individual animal or populations of animals are the long-range goals of the wildlife pathologists at the Center.

To reach these goals, Center pathologists investigate outbreaks of disease reported to the station. They bring sick animals back to the laboratory for detailed study. They survey latent disease in wild animals by blood studies and autopsies and by laboratory examination of tissues. For example, they are now conducting studies on trichomonas infection in doves and pigeons, a protozoan disease

that kills thousands of doves each year in the southern States. They are also working on distemper, a virus disease that affects wild carnivores and has symptoms like those of rabies. Surveys of the parasites and diseases of the Canada goose and the raccoon are largely completed, and detailed surveys of the ailments of blackbirds are underway in a search for biological methods for control of these birds where they do excessive damage to agricultural crops.

For mutual benefit, the staff works closely with governmental and other research agencies conducting studies on diseases and parasites of man and domestic animals.

The blackbird problem

Corn and rice growers have complained in recent years of increasing crop losses due to damage by blackbirds. As a result, Congress appropriated funds for research to find ways to reduce the damage.

Biologists assigned to the problem made plans for both basic and applied research on this group of birds, which in the East includes primarily red-wings, grackles, and cowbirds. The first step was to establish dependable methods of measuring blackbird damage to corn in the field. Ways are being sought to scare the birds away from standing crops. The rope firecracker and other frightening devices have been developed; these are often effective in reducing damage locally, but they are not a final solution. Some biologists are exploring methods of reducing populations of the birds that cause the damage. Others are testing chemicals that repel birds and deter them from pulling seed corn or eating maturing ears. Since some varieties of corn are more heavily attacked than others, agricultural scientists are being encouraged to develop damage-resistant varieties.

One group of biologists has been making surveys

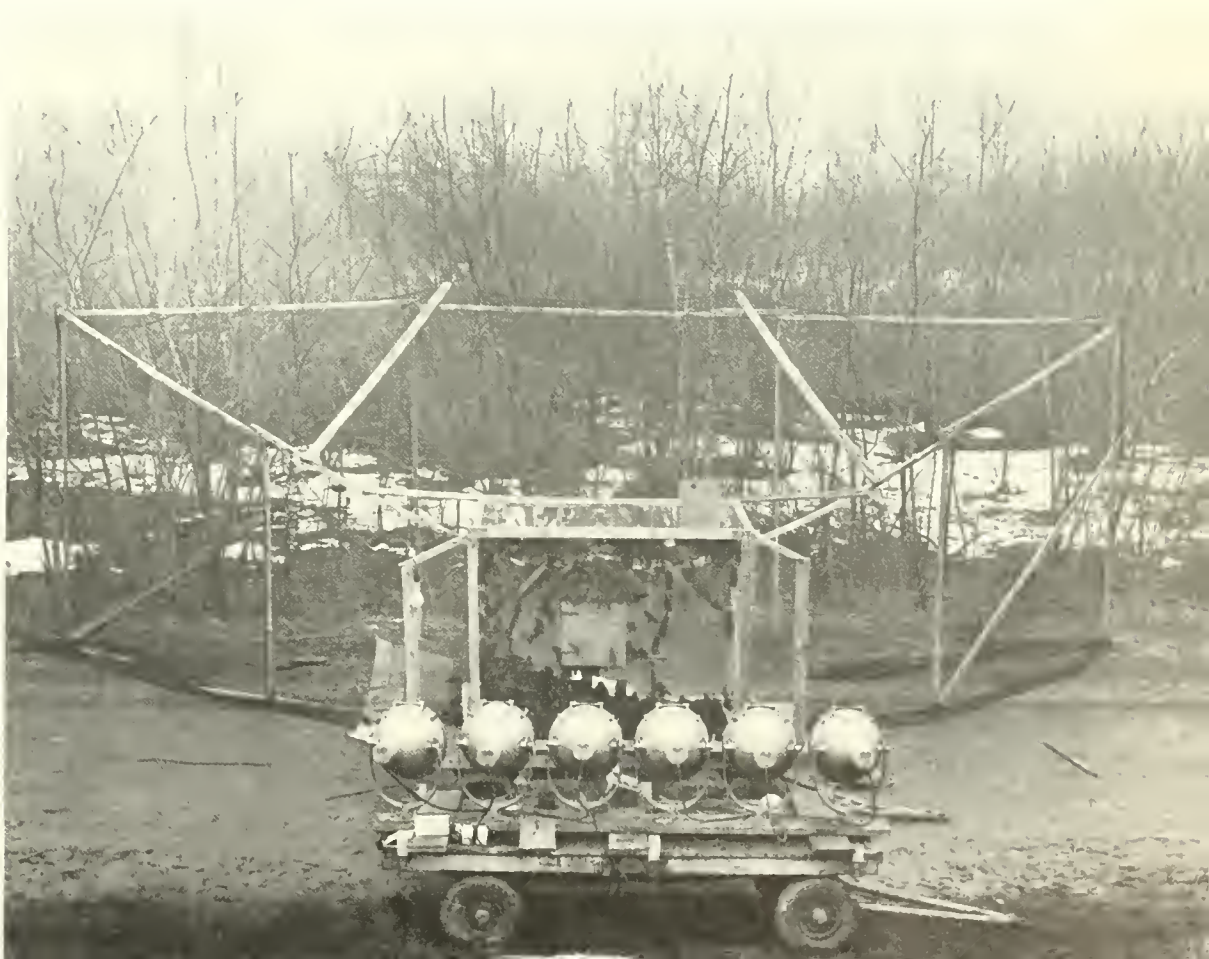
to find where blackbirds live at different times of the year, how many young they produce, and what habitat favors their breeding and increase. In winter, blackbirds roost in flocks of several million birds in remote parts of isolated swamps along the Coastal Plain from Virginia southward; in summer, they spread out into marshes and surrounding fields. In 1958, it was estimated that red-wings produced 240,000 young on 200,000 acres of marshland in the Lower Chesapeake Bay region.

Biologists at the Center have begun a blackbird-banding program to help spot the winter concentrations of the birds that do the damage next summer. With a new-type light trap developed at the Center, they can capture thousands of starlings, grackles, and cowbirds in an evening at roosting sites. Japanese silk nets, often referred to as mist nets, are mounted on poles and used to capture birds during the day. Blackbird research is going on at the Center's headquarters and at substations at Gainesville, Fla., and Newark, Del. Effective methods of depredation control acceptable both to the farmer and to the public are the goal toward which the biologists are working.



Blackbirds beginning to assemble in a large night roost. Several million birds may congregate in a single roost.

A new-type light trap developed at the Center for capturing birds at roosts.





There are no year-round quarters for wildlife on the Center's Control Farm which lacks protective cover.

Wildlife management on the farm

Three-fourths of the harvest of small game and fur animals in the United States is on farm-lands. Many farmers want to encourage game on their farms, and they can be very effective game managers. However, they need to know more ways to combine good farming with good wildlife management, and there are too few concrete facts to give them. To provide needed information, scientists of the Soil Conservation Service and Patuxent biologists set up a modern conservation farm at the Center where they could test the effects of soil conservation practices on wildlife. This demonstration farm has contoured fields, sodded drainage channels, multiflora-rose hedges, field-border plantings, and a farm pond. A control farm was established at the same time, in which wire fences separated the fields, ditch-

banks and corners were clean, and all farm practices were aimed at crop production, none at improvement of food or cover for wildlife. Later, a third farm area was developed as a proving ground for promising new farming practices that may benefit farm game.

Biologists began studies of the wildlife populations while the farms were being altered. They trapped rabbits, quail, doves, and raccoons alive in box traps and marked them with small metal tags or bands. From recaptures they learned how far the animals traveled, which were their favorite areas, when they had their young, and about how many of them lived on each farm. When they found that rabbits were reluctant to enter the traps, they developed a combination of drift fences and traps that was more effective.



Multiflora rose fence with adjacent unmowed strip of vegetation is used as living space for rabbits, quail, and song birds on Patuxent Conservation Farm.

They used this combination at the sides of fields at harvest time. They arranged for annual harvests of small game on the three farm areas. Many of the rabbits shot were ones tagged in the summer studies. Their abundance and locations in the fall showed that the hedgerows and field borders on the conservation farm provided cover which kept them on the farm into the hunting season. On the control farm, the rabbits had to move after the harvest, to seek protective cover; consequently, fewer were available for hunting.

Each spring for several years the biologists counted the number of nesting birds by following measured routes on each farm and mapping the locations of singing male birds. These counts showed clearly that small song birds, too, are favored by conservation farming. As a supple-

ment to the conservation farm, parts of the headquarters area were set aside to field-test promising methods for increasing wildlife on farmland. Here biologists are trying to increase the numbers of animals by managing the native plants in simple, inexpensive ways. Field borders are managed to encourage growth of seed-producing annuals, and odd corners are allowed to grow up naturally with a minimum of help, to ensure that the plants that grow are the ones that will provide food and cover for wildlife.

At the Center's substation at Gadsden, Ala., one of the farm-wildlife biologists counted the quail on farms managed in different ways. Those operated under Soil Conservation Service plans had notably larger populations of quail and consistently better hunting.



Natural forests are the home for many kinds of wildlife. Finding ways to meet the needs of wildlife resources on the managed forest is the job of the forest-wildlife biologist.

Wildlife management on forest lands

Hunting is today recognized as a most important part of the recreational activity on National and State forests. In the East, many of the best game animals we have, such as white-tailed deer, black bear, wild turkey, ruffed grouse, and gray squirrels, occur commonly on many of these publicly owned tracts. How to manage game populations to provide good hunting without serious damage to the forests is a problem now receiving attention at the Center's substation at Asheville, N.C. There, a Patuxent biologist is working with the staff of the Southeastern Forest Experiment

Station to determine how many deer our southeastern forests can safely support. They are also measuring the effects of forest management practices on deer, wild turkey, gray squirrels, and quail, and are testing methods to prevent mice and squirrels from eating acorns that are planted to produce new forests. The findings from these investigations will have application in wildlife management on more than 10,000,000 acres of national forests in the Southeast and on more than 159,000,000 acres of State and commercial forests in this region.

Information for visitors

Those who are interested in learning about the Center and its research work are welcome as visitors. It is not always possible to provide a guide for a personally conducted tour. The Center does not have anyone available for full-time educational and public-relations work, and arrangement for a guide can be made only if a technical-staff member can be freed for such duty. In the absence of a personal guide, visitors are invited to take a self-guided tour of the Station. Arrangements for this tour may be made at the Headquarters Information Office in the C. Hart Merriam Laboratory.

Visitors who come to the Center for the first time often ask about the wildlife of the area. The Center does not maintain a zoo of local animals, and species that may be seen on the area are in their natural environment. Fenced areas are maintained for housing birds and mammals used in research on diseases and in studies on the

effects of pesticide chemicals on wildlife. These fenced areas are not open for general inspection because visits by the public would disturb the experimental animals and would involve hazards to the visitors.

According to an early history of Maryland, when the first white men came to the upper regions of the Patuxent they reported an abundance of fish and game. Turkeys, ruffed grouse, and woodcock were described as plentiful, with flocks of 100 or more turkeys being frequently seen. Deer were reported to be abundant. Today, woodcock may still be seen during the migration season. Although the original population of white-tailed deer did not survive, the species has been restored and is once more present on the area. Turkeys and ruffed grouse have given way to the advance of man and are now gone. However, efforts are being made to restore the wild turkey.

The forests of the Patuxent River valley still

Ponds like this one on Conservation Farm at Patuxent Center contribute to better farm living.



support many species of wild life. The headquarters site, farm areas, water impoundments, and upland forests of the Center also have many interesting and valuable mammals and birds. Gray squirrels, red and gray foxes, raccoons, opossums, cottontail rabbits, weasels, and minks are just a few of the mammals that find suitable living space. Bobwhite quail, mourning doves, pileated woodpeckers, barred owls, red-shouldered hawks, wood ducks, black ducks, Canada geese, and many species of small seed- and insect-eating song birds are among the birds that live the year around and thrive in the fields, woodlands, and marshes of the Center.

A variety of migratory birds stop over or pass through the area in traveling between northern breeding and southern wintering grounds. A visitor to the Center may see, by chance, some of the native species of mammals along the roads, but most of them are shy and secretive and prefer

to avoid man. The visitor may observe resident birds more frequently, but many of them are inconspicuous and easily missed by casual observation.

The lowland forest of the Center was logged in Colonial days and more recently, but one 7-acre island has a virgin stand of beech which is now set aside as a natural area. Many large trees of other species also occur in the flood-plain forest which extends through the entire north tract of the Center. The rich bottomland woods are a garden of wild flowers in the spring. Records of plant and animal distribution on the Center are maintained for historical and research purposes.

The map on the opposite page shows the location of the Patuxent Wildlife Research Center and the primary access roads. Office hours are 8 a.m. to 4:30 p.m., Monday through Friday. There is no public transportation to the Center. Baltimore and Ohio trains and Greyhound and Trailways buses stop in Laurel, about 5 miles to the northwest. Highway buses also serve nearby Beltsville. Visitors arriving in the evening will find motel and eating accommodations in Laurel and on U.S. Highway 1 north and south of Laurel. A noon meal is served at the cafeteria of the Agricultural Research Center at Beltsville, and visitors to the Patuxent Center are welcome there. Mail address of the Wildlife Research Center is Laurel, Md. The telephone number is Granite 4-6760.



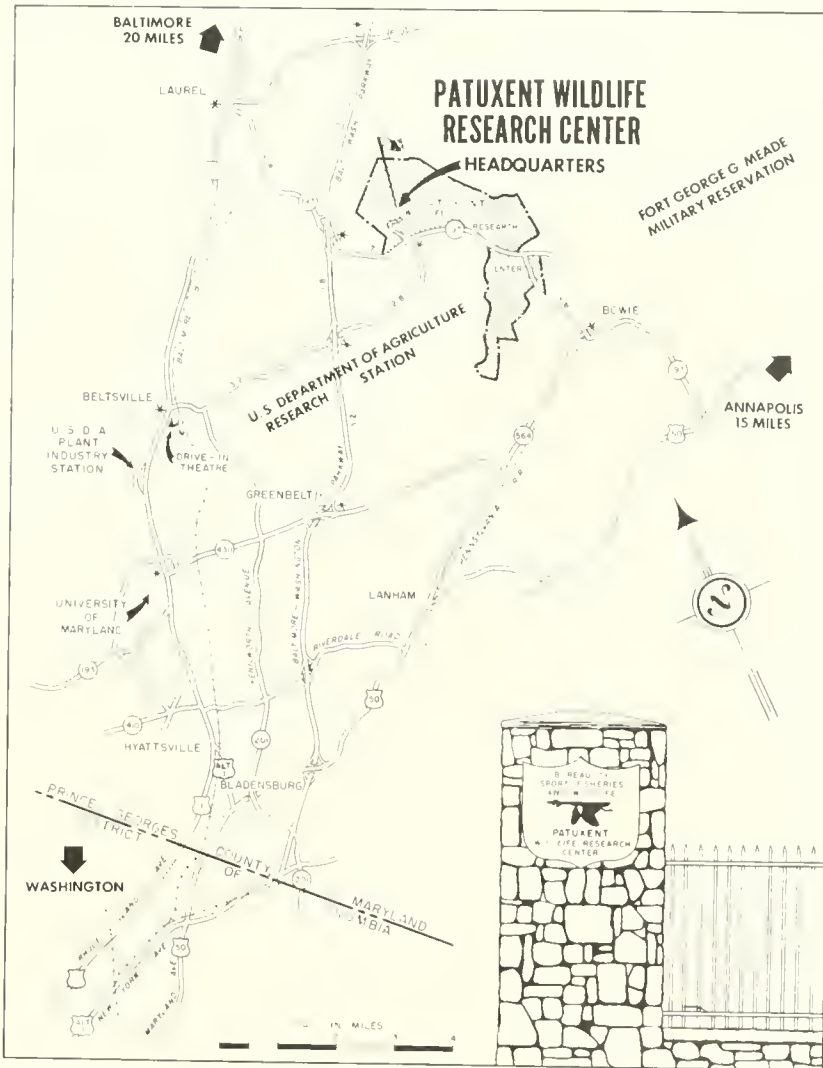
Large beech trees
in Patuxent Center
bottomland.



Conservation means the wise use of the earth and its resources for the lasting good of men.—Pinchot



In the conservation and management of wildlife resources, research is the key to progress just as it is in agriculture, industry, and public health. At the Patuxent Wildlife Research Center and throughout the Bureau of Sport Fisheries and Wildlife, emphasis is on finding ways to meet the needs of wildlife populations in a fast-changing world. Wildlife resources are products of the land, and they have contributed substantially to our high standard of living by providing much-needed wholesome outdoor recreation in the sport of hunting, and creative inspiration to millions of Americans in song, poetry, and literature. As our human population increases and the demands on our land grow, the Nation is striving to provide adequate living space for wildlife and a sound technology for wildlife management. In these endeavors research must play an important role.



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Research is a key to progress

