

Chase copy

Maine Cooperative Wildlife Research Unit
University of Maine
Orono, Maine

QUARTERLY REPORT

January-March

1946

During the past quarter very little research activity was carried out by Unit personnel except on the muskrat studies. Mendall did practically no field work during the period as he was on sick leave for about 6 weeks due to the necessity of having a surgical operation. This resulted in additional administrative duties for Gashwiler with lessened opportunities for field studies.

RESEARCH PROJECTS

RUFFED GROUSE MANAGEMENT

Sub-project: Cover requirements and populations.

Objectives: To determine preferred cover types and population densities.

Assignment: Howard L. Mendall.

Because of his extensive sick leave, Mendall was able to devote only about a week during January to field studies on grouse. This work was chiefly in northern Penobscot and southern Aroostook counties, making the usual winter checks on populations and cover preferences.

The annual questionnaires relative to grouse conditions were sent out in January to all State game wardens and the replies have been now tabulated. These verify quite well the data previously obtained from other sources as to the continued unsatisfactory status of the birds over much of Maine. There were 65 warden reports received from men with two or more continuous years in a given district. Of these, 20 reported an increase in grouse numbers in comparison with last year; 24 reported a decrease; and 21 reported no appreciable change in population (of this latter group over half indicated an unsatisfactory status). It is significant that over half of the reports of increase came from eastern and east-central Maine, chiefly Penobscot and Washington counties. Elsewhere, except for scattered favorable reports, primarily in extreme northern Aroostook County, the wardens found conditions on the whole to be poor. The most apparent decreases occurred in the southern coastal counties of Waldo, Knox, Lincoln, and Sagadahoc; also in western Maine, with most reports from York, Franklin, and Oxford counties showing noticeable decreases.

Attempts to gain a reasonably accurate picture of grouse populations, and especially numerical changes from season to season, are difficult in a state as large as Maine and with such limited personnel as the Unit has available. Yet a knowledge of these conditions is necessary before intelligent management studies can be undertaken. Accordingly, arrangements have now been made for obtaining better coverage on this work, and the Unit and Pittman-Robertson personnel will cooperate actively. During the coming season 20 permanent census areas will be established as a Pittman-Robertson project. These are to be widely scattered throughout the State with the majority in sections which have not been sufficiently covered in past studies.

MUSKRAT MANAGEMENT

Sub-project: Life history studies.

Objectives: A study of life history and environmental factors leading to management recommendations.

Assignment: Jay S. Gashwiler, Assistant Leader.

In spite of having an unusual number of administrative duties, Gashwiler spent about 3 weeks in active participation on this project. The regular periodic checks were made throughout the quarter on the Lincoln and Eddington study areas with considerable information on muskrat life history being obtained. In addition, several days were spent late in January on the Calais area. A marked variation as to the chief winter foods was observed on the different study areas. At Mattanawcook Lake (Lincoln) the principal foods at this season were cattail (Typha latifolia), arrowhead (Sagittaria graminea), and spike rush (Eleocharis acicularis). On the other hand, the muskrats at the Eddington area were consuming large quantities of water bulrush (Scirpus subterminalis) and pickerel weed (Pontederia cordata).

During the coming quarter, close contacts will be kept with the trappers operating in the vicinity of Lincoln and Eddington to obtain all possible data relative to the trapping season. Life history studies will be continued, and the mapping of study areas (not completed last fall) will be finished.

Sub-project: Muskrat habitat study.

Objectives: To determine the seasonal use of specific muskrat habitat types and to analyze the data thus obtained as to the management applications.

Assignment: Malcolm W. Coulter, Graduate Ass't.

Coulter's data are being obtained on the Davis-Holbrook marsh in Eddington, one of the study areas utilized by Gashwiler in his project. Approximately 20 acres of the best muskrat habitat have been gridironed by Coulter into 100-foot squares and marked with poles to facilitate the

taking of accurate data. Seventy-one muskrat lodges have been marked and numbered. A close check is being kept of these to determine muskrat activities and ecological factors affected by habitat conditions and changes. Bank den counts were made in three sections of the area, and indications to date show somewhat more use of burrows than of houses.

Ashman was associated with the Forestry Department until the coming season, particular emphasis will be placed on obtaining data relative to specific habitat uses during the breeding season, the development of plant types, and the effects on muskrats of the habitat changes. A further addition to the gridironed area will be made.

by Miss Bulalie Comstock.

COOPERATION AND EDUCATIONAL WORK

Robert Montgomery, former Graduate Assistant who resigned several months ago, has returned to the University as a graduate student and will complete his thesis study dealing with the Mendall and Gashwiler continued their cooperation with the Department of Inland Fisheries and Game on the Federal Aid program. Since this work is now being reorganized on a post-war basis, several conferences between Unit and Federal Aid personnel were held both in Orono and in Augusta.

Unit personnel analyzed the contents of a considerable number of water-fowl stomachs as a special service to the Massachusetts Department of Conservation.

Mendall and Gashwiler assisted the Zoology Department in connection with the staff vacancy in Ornithology.

Several lectures were given by the Unit staff to civic and educational groups.

Respectfully submitted,

PUBLICATIONS

A detailed article by former Assistant Leader Charles Brown entitled "Food of Maine Ruffed Grouse by Seasons and Cover Types" was published in the January issue of the Journal of Wildlife Management. The study, made while Brown was a member of the Maine Unit, is a very important contribution to our knowledge of the ruffed grouse. Reprints of this article have been sent to all cooperators.

An article by Mendall entitled "Food Habits of Common Hawks and Owls in Maine" was published in the April issue of the Bulletin of the Maine Audubon Society.

MISCELLANEOUS

Gashwiler and Mendall attended the North American Wildlife Conference held in New York City during March and participated in the Unit Leaders' meetings that preceded the Conference. Professor Ashman, newly appointed University representative of the Unit, likewise participated in the Unit Leaders' meetings.

taking of accurate data. Seventy-one muskrat lodges have been marked and numbered. A close check is being kept of these to determine muskrat activities and ecological factors affected by habitat conditions and changes. Bank den counts were made in three sections of the area and indications to date show somewhat more use of burrows than of houses.

During the coming season, particular emphasis will be placed on obtaining data relative to specific habitat uses during the breeding season, the development of plant types, and the effects on muskrats of the habitat changes. A further addition to the gridironed area will be made.

COOPERATION AND EDUCATIONAL WORK

Mendall and Gashwiler continued their cooperation with the Department of Inland Fisheries and Game on the Federal Aid program. Since this work is now being reorganized on a post-war basis, several conferences between Unit and Federal Aid personnel were held both in Orono and in Augusta.

Unit personnel analyzed the contents of a considerable number of waterfowl stomachs as a special service to the Massachusetts Department of Conservation.

Mendall and Gashwiler assisted the Zoology Department in connection with the staff vacancy in Ornithology.

Several lectures were given by the Unit staff to civic and educational groups.

PUBLICATIONS

A detailed article by former Assistant Leader Charles Brown entitled "Food of Maine Ruffed Grouse by Seasons and Cover Types" was published in the January issue of the Journal of Wildlife Management. The study, made while Brown was a member of the Maine Unit, is a very important contribution to our knowledge of the ruffed grouse. Reprints of this article have been sent to all cooperators.

An article by Mendall entitled "Food Habits of Common Hawks and Owls in Maine" was published in the April issue of the Bulletin of the Maine Audubon Society.

MISCELLANEOUS

Gashwiler and Mendall attended the North American Wildlife Conference held in New York City during March and participated in the Unit Leaders' meetings that preceded the Conference. Professor Ashman, newly appointed University representative of the Unit, likewise participated in the Unit Leaders' meetings.

PERSONNEL

Professor Dwight Demeritt, head of the Forestry Department, and the University representative of the Unit since its establishment in 1936, resigned in January. His place has been ably filled by Professor Robert Ashman. Ashman was associated with the Forestry Department until the war and was familiar with the Unit program.

Mrs. Grace Hanscom, who was appointed as Secretary-Clerk of the Unit in November, resigned her position in January. She has been replaced by Miss Eulalie Comstock.

Robert Montgomery, former Graduate Assistant who resigned several years ago before completing his program, has returned to the University as a graduate student and will complete his thesis study dealing with the reproduction of northern white cedar for deer food. A new graduate student, James Reilly, was enrolled in February. A former graduate of the University of Maine, Reilly will work on diseases and parasites of ruffed grouse. Although both Montgomery and Reilly are enrolled as graduate students rather than assistants and hence are not on the Unit payroll, nevertheless supervision of their program is by the Unit staff.

The vacancy in the Zoology Department in ichthyology and ornithology that has existed for some time has now been filled by the appointment of Mr. Ernest A. Lachner of Cornell University. Thus this gap in the training program of wildlife students will be taken care of at the start of the next semester.

Respectfully submitted,

Howard L. Mendall, Leader
Maine Cooperative Wildlife
Research Unit

Univ. of Maine,
Orono, Maine,
April 5, 1946.

copy

Maine Cooperative Wildlife Research Unit
University of Maine
Orono, Maine

QUARTERLY REPORT

April-June

1946

RESEARCH PROJECTS

MUSKRAT MANAGEMENT

Sub-project: Life history studies.

Objectives: A study of life history and environmental factors leading to management recommendations.

Assignment: Jay S. Gashwiler, Assistant Leader.

Gashwiler devoted nearly all of his time during the muskrat trapping season (April 1 to May 10) to working with the trappers in central Penobscot County, with the result that a great deal of valuable information was obtained. A study was made of trapping methods and results; pelts were measured, weighed, and examined for primeness and damage. Carcasses were also weighed and sexed, and the sexual organs removed for laboratory study. Through the cooperation of the U. S. Fish and Wildlife Service, Gashwiler was able to supplement this information with similar material from the Missisquoi National Wildlife Refuge at Swanton, Vermont.

During the latter part of May and in early June, complete post-trapping censuses have been taken on the Eddington and Lincoln study areas. Considerable information was thus obtained on the extent to which heavy trapping, such as was carried out throughout Maine this spring, can make serious inroads on the muskrat population of a given marsh.

The regular bi-monthly food checks were made on all study areas. Litter checks have also been made on all three areas--data being obtained on the time the litters are born, number of young, sex, weights, and physical conditions. These phases of the study are to receive chief attention throughout the summer.

Sub-project: Muskrat habitat study.

Objectives: To determine the seasonal use of specific muskrat Habitat types and to analyze the data thus obtained as to the management applications.

Assignment: Malcolm W. Coulter, Graduate Ass't.

Because of a very light class schedule this spring, Coulter has been able to devote most of his time to his thesis problem. He kept in constant touch with the trappers operating on his study area and, with Gashwiler's assistance, made a complete post-trapping census. On this marsh (Davis-Holbrook Thoroughfare in Eddington) it was found that three trapping parties took approximately 150 muskrats during the open season and that, as far as could be determined, a breeding population of only 17 animals remained! Thus, in round figures, about 90% of the muskrats were trapped off this area prior to breeding.

During the quarter Coulter type-mapped about 30 acres of his check area and obtained data on habitat use by the muskrats; and also kept a close check on water levels and plant phenology in the marsh.

Plans for the summer include the completion of the type map, a quadrat study of the aquatic and marsh plants, a muskrat tagging study, litter checks, and habitat use studies.

DEER MANAGEMENT

Sub-project: Cedar reproduction and utilization.

Objectives: To determine the factors affecting the reproduction of northern white cedar and to obtain specific information on cedar utilization by deer.

Assignment: Robert Montgomery, Graduate Student.

With the return to the Unit of former Graduate Assistant Montgomery, the completion of this long suspended study on the reproduction of northern white cedar can be expected this fall. This work will supplement the studies which have been carried out by Professor Curtis of the Forestry Department.

Montgomery spent about 4 weeks in the field during the quarter, rechecking all his old plots and measuring the changes on them. Field work on this sub-project is scheduled to be entirely completed this summer.

RUFFED GROUSE MANAGEMENT

Sub-project: Grouse diseases and parasites.

Objectives: To study the diseases and parasites of ruffed grouse in Maine and to determine their importance to the welfare of the birds.

Assignment: James Reilly, Graduate Student.

Because of a particularly heavy class schedule during the spring semester, Reilly was unable to devote much time to his thesis study.

However, a review of the literature was made and plans were formulated for the coming year's work. Several specimens sent in by game wardens were examined. This sub-project will get under way on an intensive basis this summer.

WATERFOWL DISTRIBUTION AND MANAGEMENT

Objectives: To obtain all possible data on the abundance, distribution, and migration of waterfowl species in Maine; and to conduct research that will assist in the management of the important species breeding in Maine, especially the ring-necked duck and the black duck.

Assignment: Howard L. Mendall, Leader.

Mendall spent a week during April, two weeks in May, and three weeks in June in the field obtaining migration and nesting data. In addition to the work in Maine, three days were spent in western New Brunswick. A few days' assistance was given by Gashwiler, Coulter, and Montgomery; also a temporary field assistant was employed for ten days during the height of the nesting season.

Spring waterfowl flights were again unusually early for all species except the blue-winged teal, as was the case last year. The status of waterfowl in Maine during migration and the early part of the nesting season varied greatly with the various species. Canada geese and brant appeared to be present during the migration in slightly increased numbers over last year. A noticeable increase was also apparent in the green-winged teal. Wood ducks and goldeneyes showed no further decrease from 1945 but their status last year was very unsatisfactory. A further decrease was noted in migrating lesser scaups, although it is hard to conceive of these birds being any less numerous than in 1945. On the other hand, greater scaups were observed in more numbers than last spring. Maine's two most important breeding species, the black duck and the ring-necked duck, both showed decreases--slight in the case of the black but rather noticeable with the ring-neck. In neither was the decrease such as to cause undue apprehension. A slight decrease was recorded in the blue-winged teal.

The nesting studies are proving the most successful of any year since this project was initiated. As of July 1, more than 50 nests had been located, the majority being of the black duck and the ring-neck. Each of these has been, or will be, re-checked at intervals by Mendall until successfully hatched or destroyed.

During the summer, Mendall will continue the nesting studies and will concentrate on filling in as many of the gaps in the waterfowl studies as possible, with the emphasis on the black duck and the ring-neck. Work on the latter is now in an advanced stage of progress and it is believed that a completion report, with management recommendations, can be made at the conclusion of this year's work.

An interesting sidelight of the past season has been the determination of the high mortality of waterfowl during the spring muskrat trapping activities. It has long been known that certain losses were occasioned by the ducks being caught in traps but the significance of these losses was not appreciated until this year when additional data were obtained through the intensive spring muskrat studies. It is now believed that spring trapping in Maine and New Brunswick constitutes an important mortality factor to migrating and breeding waterfowl. Black ducks, wood ducks, and green-winged teal are the species most seriously affected, although all species of Maine ducks suffer losses except the blue-winged teal which does not ordinarily arrive in the interior of the State until most of the trapping has been concluded.

WOODCOCK RESEARCH

- Objectives: 1. To take an annual census on the Unit's census area located at the Moosehorn Refuge in Washington County, and on supplemental areas in the State.
2. To band as many juvenile woodcock as possible during the height of the hatching season.

Assignment: Howard L. Mendall, Leader.

Mendall devoted most of his time from the middle of April to the middle of May to the annual woodcock census studies. An increase of 3% in the population was found on the Unit's census areas in eastern Maine. On the new areas established last year by cooperators who report their findings to the Maine Unit, no change was noted from 1945. These areas are located in parts of Maine not covered by the Unit's censuses, and also in Vermont, Connecticut, and New York. Since a separate report on woodcock conditions was submitted by Mendall under date of June 4, it does not appear necessary to repeat these details at this time.

Because of insufficient funds and manpower, the Unit has not been able to resume the pre-war banding program. Nevertheless, through the cooperation of the personnel of the Moosehorn National Wildlife Refuge and of State Warden Lloyd Clark, 6 broods of woodcock were banded during May.

COOPERATION AND EDUCATIONAL WORK

The Unit's cooperative work with the State Pittman-Robertson program has continued and several conferences were held between Unit and Pittman-Robertson personnel. In addition, Gashwiler spent two days on an inspection trip of the State's Swan Island Refuge in an advisory capacity.

Several lectures were given by the Unit staff during the quarter to civic and educational groups.

Gashwiler spent 9 days during the middle of May cooperating with the U. S. Fish and Wildlife Service on the Gull and Cormorant Control program along the Maine coast.

Respectfully submitted,

Howard L. Mendall

Howard L. Mendall, Leader
Maine Cooperative Wildlife
Research Unit

July 12, 1946

MAINE COOPERATIVE WILDLIFE RESEARCH UNIT

University of Maine

Orono, Maine

QUARTERLY REPORT

July-September, 1946

Cooperating Agencies

Maine Department of Inland Fisheries and Game
Wildlife Management Institute
University of Maine
U. S. Fish and Wildlife Service

Unit Personnel

Leader - Howard L. Mendall
Assistant Leader - Jay S. Gashwiler
University Representative - Prof. Robert I. Ashman
Graduate Assistants - Malcolm W. Coulter
 Leslie L. Glasgow
Graduate Students - James R. Reilly
 Robert D. Montgomery
 Gerardus C. deRoth
Clerk - Eulalie Comstock

MAINE COOPERATIVE WILDLIFE RESEARCH UNIT

Quarterly Report

July-September, 1946

Note: Commencing at this time, quarterly reports are being mimeographed to permit distribution to the other Unit leaders. For the information of those who are not familiar with the style of previous reports of the Maine Unit, it may be pointed out that the projects mentioned do not constitute the complete list of active projects of this Unit. Only projects upon which work has been carried out in any given quarter are discussed in the report for that quarter.

RESEARCH PROJECTS

MUSKRAT MANAGEMENT

Sub-project: Life history studies.

Objectives: A study of life history and environmental factors leading to management recommendations.

Assignment: Jay S. Gashwiler, Assistant Leader

Gashwiler devoted about 10 days during each month of the quarter to the muskrat project. He was assisted several days by Coulter and Glasgow. Considerable new data were obtained on the three experimental areas, although the low population of animals was a disappointment. This was especially true on the Lincoln area where the recovery of the population following spring trapping was unusually poor.

bi-monthly The regular bi-monthly food checks and plant phenological checks were made on both the Lincoln and the Eddington areas. Chief plant food utilized during the period on the Lincoln area was cattail (Typha latifolia) and pond weed (Potamogeton natans); on the Eddington marsh, arrowhead (Sagittaria latifolia), burreed (Sparganium fluctuans), water bulrush (Scirpus subterminalis), and pickerel weed (Pontederia cordata) were of most importance. Mollusks (chiefly fresh water clams) were eaten very extensively at both areas during August and September. The abnormally low water that prevailed during late summer apparently made clams more available than usual as a source of food.

Special efforts were made this year to obtain as much information as possible on muskrat productivity. Litter checks were made throughout the spring and summer by opening houses at periodic intervals on the Eddington and Calais areas. Plant quadrat data were also obtained, and the Eddington area was type-mapped.

Proposed work during the fall includes taking the bi-monthly food and plant phenological data, census studies, and predation studies. In addition, a series of animals will be trapped on the Moosehorn Refuge in Washington County to obtain pelt data. This information is badly needed since under State law, the regular trapping season comes in the spring and hence fall pelts are not available.

Sub-project: Muskrat habitat study.

Objectives: To determine the seasonal use of specific muskrat habitat types and to analyze the data thus obtained as to the management applications.

Assignment: Malcolm W. Coulter, Graduate Assistant

Coulter was able to devote practically his entire time throughout the summer to his thesis project and made excellent progress. Litter data were obtained from the houses and each lodge was marked and the location plotted on the type map. An extensive vegetation study was made and 415 sample plots were established--each plant occurring being given an abundance rating. Soil samples were also taken and these will be analyzed this winter.

Coulter devoted much of his time during the latter part of the summer to live-trapping. In spite of the poor population of muskrats on his study area, he was successful in capturing and tagging 70 animals, 38 of which were retaken one or more times. Complete measurements were made of each muskrat caught; physical condition was recorded; external parasites were collected; and pelage changes were noted. In addition, the trapping operations yielded valuable information on rearing areas, summer concentrations, seasonal movements, and population build-ups.

Plans for the coming quarter include lodge and den checks, mortality studies, and live trapping as long as mild weather prevails.

DEER MANAGEMENT

Sub-project: Cedar reproduction and utilization.

Objectives: To determine the factors affecting the reproduction of northern white cedar and to obtain specific information on cedar utilization by deer.

Assignment: Robert D. Montgomery, Graduate Student

In September, Montgomery completed all field work on this project. His data have been compiled and he is now engaged in writing up his thesis. Since the completed report will be available in the near future, no details will be given at this time.

RUFFED GROUSE MANAGEMENT

Sub-project: Cover requirements and populations.

Objectives: To determine preferred cover types and population densities

Assignment: Howard L. Mendall, Leader

Mendall spent about a week during each of August and September making post-breeding season field checks, chiefly in Washington and Arcoostook counties. In addition, a considerable number of the State wardens were contacted as to general grouse conditions.

Populations continue at an unsatisfactory level over much of the State, although a decided improvement was noted in Washington County and in scattered localities of south-central Maine. In the vast covers of northern Maine, a continued decrease was apparent both from Mendall's checks and from warden's reports.

The 20 permanent grouse census areas (to be maintained as a joint project of the Unit and the Federal Aid Division of the Department of Inland Fisheries and Game) were established during the summer by the Federal Aid personnel.

WATERFOWL DISTRIBUTION AND MANAGEMENT

Objectives: To obtain all possible data on the abundance, distribution, and migration of waterfowl species in Maine; and to conduct research that will assist in the management of the important species breeding in Maine, especially the ring-necked duck and the black duck.

Assignment: Howard L. Mendall, Leader

Mendall devoted much of July and about two weeks during each of August and September to this project. The nesting study, reported on last quarter, was continued; and special attention was paid to habitat requirements during late summer. Work in Maine was supplemented by 12 days of study in western New Brunswick. Gashwiler spent several days on this project as did graduate students Coulter, Glasgow, and Montgomery.

A few new nests were located early in July and the total found during the season was 57. These were distributed as follows: ring-necked duck - 41; black duck - 12; American goldeneye - 2; wood duck - 1; and hooded merganser - 1. With two exceptions (located in remote areas), all the nests were re-checked at intervals until hatched or destroyed. 62% of these nests hatched -- a decided improvement over last year. However, the ring-necked duck fared much better than the black duck, a situation which has seldom been noted in previous years. Lower water levels are believed to be the most responsible factor for this year's increased nesting success. Although some flood losses occurred early in the season (especially among the black ducks), such losses

were much less numerous than in 1945. Mortality from predators was divided among many different species but crows and minks were of most importance.

The annual brood counts and census studies were carried out on the regular check areas. As seems to be the case throughout much of North America this year, the status of breeding waterfowl in Maine and western New Brunswick is somewhat unfavorable and bears out very closely the observations of the spring migration. Only the two teals, especially the green-wing, could be considered as showing satisfactory numbers on the breeding marshes of this region. The fact that the wood duck and goldeneye showed little change in population from 1945 in Maine is in no way encouraging because both species suffered heavy decreases in both 1944 and 1945. With noticeable population drops this year in New Brunswick, it appears that these two ducks show the most unsatisfactory numbers of any of the resident waterfowl of this area.

The following table summarizes Mendall's conclusions on the comparative status of the game species of ducks at the beginning of the breeding season. Percentages given are estimates, except in the case of the ring-necked duck where specific figures from the permanent census areas were available:

Status of Breeding Waterfowl - 1946
(In comparison with 1945)

<u>Species</u>	<u>Maine</u>	<u>Western New Brunswick</u>
Black Duck	10-15% decrease	10-15% decrease
Wood Duck	No change	15-20% decrease
Green-winged Teal	Slight increase	10% increase
Blue-winged Teal	No change	No change
Ring-necked Duck	12% decrease	2% decrease
Goldeneye	5% decrease	15% decrease

This rather gloomy waterfowl picture was improved slightly by the fact that the nesting season was more favorable than in 1945, yet it is apparent that conditions in general are far from satisfactory.

During the next quarter, principal activities on this project will be centered around gaining as much information as possible on the fall migration, hunting conditions, and hunting success.

MISCELLANEOUS

Waterfowl Banding. - J. S. Gashwiler

Gashwiler spent the entire month of September operating the Unit's banding stations on the Penobscot River near Lincoln, with six traps being set along a five-mile stretch of river. In spite of reduced populations of birds, trapping operations were much more successful than last year and a total of 370 ducks were banded. These were distributed as follows: black

duck - 281, wood duck - 87, green-winged teal - 1, and ring-necked duck - 1. Complete data were taken on weights, sex, age, and plumage conditions.

In addition to the foregoing studies, Gashwiler banded 31 juvenile ring-necked ducks on the breeding grounds by "herding" them into a trap set across the mouth of a stream. These birds were from half-grown to full grown but were all flightless. He was assisted by Glasgow and Montgomery.

COOPERATION AND EDUCATIONAL WORK

Gashwiler and Mendall continued to serve as technical advisors to the State's Pittman-Robertson projects and several conferences were held between Unit and Pittman-Robertson personnel.

The Unit staff assisted the State wardens in performing autopsies and in furnishing them with technical data.

In August, Mendall and Gashwiler participated in a several day conference and inspection at the Moosehorn Refuge in Washington County--meeting with Fish and Wildlife Service representatives of the Boston, Washington, and Chicago offices. Future research and management plans for the refuge were formulated.

The usual assistance was given to the general public whenever such requests were made.

PERSONNEL CHANGES

In August, former graduate assistant Leslie Glasgow, returned from the Army and was re-appointed to his fellowship. Since this was effective as of September 1, Glasgow was employed by the Unit during most of August as research assistant, working on the muskrat and waterfowl projects. Glasgow's thesis project is on the white-tailed deer and he initiated his field work in September.

Robert Montgomery, graduate student assigned to the deer project completed all course work and field studies on September 30 and accepted a position as biologist with the Michigan Department of Conservation.

Respectfully submitted,

Howard L. Mendall

Howard L. Mendall, Leader
Maine Cooperative Wildlife
Research Unit

University of Maine
Orono, Maine
October 15, 1946

Office

MAINE COOPERATIVE WILDLIFE RESEARCH UNIT

University of Maine

Orono, Maine

QUARTERLY REPORT

October-December, 1946

Cooperating Agencies

Maine Department of Inland Fisheries and Game
Wildlife Management Institute
University of Maine
U. S. Fish and Wildlife Service

Unit Personnel

Leader - Howard L. Mendall
Assistant Leader - Jay S. Gashwiler
University Representative - Prof. Robert I. Ashman
Graduate Assistants - Malcolm W. Coulter
 Leslie L. Glasgow
Graduate Students - James R. Reilly
 Harold J. Dyer
 Gerardus C. deRoth
Clerk - Margaret Spencer

MAINE COOPERATIVE WILDLIFE RESEARCH UNIT

Quarterly Report

October-December, 1946

RESEARCH PROJECTS

MUSKRAT MANAGEMENT

Sub-project: Life history studies.

Objectives: A study of life history and environmental factors leading to management recommendations.

Assignment: Jay S. Gashwiler, Assistant Leader

Gashwiler spent about two weeks during each month of the quarter carrying on his studies on this project. The regular food checks were made on the Lincoln and Eddington areas at bi-weekly intervals. This phase of the study has now been maintained for practically a year and will be concluded in January.

Through the cooperation of the Fish and Wildlife Service, Gashwiler was able to make a detailed examination of 183 muskrats trapped during the fall on the Missisquoi National Wildlife Refuge in Vermont. This should prove especially valuable since, under present laws, there is no fall trapping season in Maine and it is difficult to obtain many specimens. Climatic and habitat conditions at the Vermont refuge are similar to those in parts of Maine so the data will have direct applications here. Securing information on pelts primeness was the chief objective of this work although weights and measurements were obtained as well, and the genital organs were preserved for laboratory examinations. Gashwiler was assisted by the Missisquoi Refuge personnel. To supplement these data, 31 animals were trapped under permit, at intervals during October and November on the Moosehorn National Wildlife Refuge, in eastern Maine.

Considerable time was spent marking houses and obtaining usage data at Pushaw Stream near Orono and on the three regular study areas. Fall populations appear to be reasonably good, considering the extremely heavy trapping of last spring, except on the Lincoln area. Here, the combination of heavy trapping and unusually low water has apparently resulted in very few animals at the present time. On the Calais marsh, which is on a refuge and not open to trapping, the muskrat population has shown a remarkably heavy build-up this year.

Several nights were spent live-trapping and banding muskrats at Pushaw Stream. Only 16 individuals were caught before freezing temperatures halted activities but this is an area that is heavily trapped in spring and there is a reasonable chance of obtaining several returns.

In December Gashwiler began the laboratory studies of genital organs previously collected from spring and fall trappings. This is resulting in valuable information, especially with respect to the proportion of pregnant females caught during spring trapping.

Plans for the next quarter include the completion of the food checks, a study of winter house usage, mortality, and the continuation of the laboratory determinations.

Sub-project: Muskrat habitat study.

Objectives: To determine the seasonal use of specific muskrat habitat types and to analyze the data thus obtained as to the management applications.

Assignment: Malcolm W. Coulter, Graduate Assistant

Coulter continued the live-trapping and tagging operations begun last quarter. At the time the marsh froze on November 25, a total of 73 muskrats had been tagged. Recaptures amounted to 152; it was interesting to note that 60% of all tagged individuals were recaptured at least once.

During October and November 18 new houses were constructed by the muskrats on the study area, and the majority of the old lodges were repaired. It was found that most of the existing houses which were not repaired were those located near the shrubby margin of the marsh. A definite dispersal of the animals within the marsh was observed in late fall and many sections of the study area which were vacant or little used throughout the summer contained lodges in November.

Coulter made a house count in December with the following results: of 111 houses examined, 39 were not used; 35 were being used occasionally--chiefly as feeding sites; and 37 were apparently occupied regularly.

Proposed work during the remainder of the winter will be centered largely around the habitat study, house checks, feeding activities, and mortality factors.

DEER MANAGEMENT

Sub-project: Winter deer yard studies

Objectives: To determine the amount of available food in two typical deer yards; to determine the preferences and utilization of the food by deer; and to obtain all possible information on the activities and mortality of deer while in the yards.

Assignment: Leslie L. Glasgow, Graduate Assistant

In October, Glasgow initiated field work on his thesis study. After inspecting several regularly-used yards, two study areas were selected which are small enough to permit reasonably thorough coverage and at the same time permit the accumulation of sufficient data. One of the areas is in the vicinity of Pushaw Lake, close to the University; the terrain is low and flat, consisting of spruce-cedar and hardwood types. The other area is in Chesterville, in northwestern Kennebec County. This yard is located in the so-called "snow belt" of the State where heavy snows and very low temperatures occur regularly. It is a more diversified area than the one near Orono. It is limited in width to a half mile on either side of a valley stream and contains marshland, an alder swale, a spruce-cedar bog, and upland mixed hardwoods and conifers.

Early in December a track census was made on the Chesterville area after a light snowfall. Although no deer had started to "yard" at this time, it was determined that there were from 25-30 deer remaining in the vicinity, following the close of the hunting season.

In an effort to gain information on sex ratios and the physical condition of deer killed during the hunting season were distributed among the game checking stations in the vicinity of the two study areas.

During the coming quarter Glasgow will spend as much time on the study areas as his class schedule will permit.

Sub-project: Northern white cedar investigations

Objectives: To determine silvicultural factors involved in obtaining cedar reproduction suitable for deer browse.

Assignment: Professor James D. Curtis, Forestry Department.

Curtis has now completed all work on this sub-project, and is preparing a final report. Since this will summarize all his accomplishments to date and will be submitted within a few weeks, it does not seem worthwhile to report on the study at this time.

RUFFED GROUSE MANAGEMENT

Sub-project: Cover requirements and populations

Objectives: To determine preferred cover types and population densities

Assignment: Howard L. Mendall, Leader

Mendall devoted about a week during each month of the quarter to field checks of grouse covers in various parts of the State, and also contacted as many game wardens as possible relative to population changes.

A decided improvement in grouse numbers was apparent this fall in many parts of southern, western, and south-central Maine. In the southeastern coastal counties (south of Hancock County), in north-central Maine (especially Penobscot County), and in much of the northern part of the State, the decline reported on previously has continued. In central Penobscot County, near Orono, the birds were almost non-existent in many good covers that were checked after the close of the hunting season.

WATERFOWL DISTRIBUTION AND MANAGEMENT

Objectives: To obtain all possible data on the abundance, distribution, and migration of waterfowl species in Maine; and to conduct research that will assist in the management of the important species breeding in Maine, especially the ring-necked duck and the black duck.

Assignment: Howard L. Mendall, Leader

Two weeks of field work on the waterfowl project were spent by Mendall during each of October and November. As effort was made to obtain as much migration data as possible in view of the uncertainty this year as to the status of many species. Considerable information was also gathered on hunting conditions and hunting success. Work in Maine was supplemented by five days of study in western New Brunswick.

For the first time in several years, there was a clear-cut break in the migration through Maine. In fact there was a period of more than two weeks in October when there were comparatively no birds in the inland marshes. Apparently because of a combination of unusual water levels and weather conditions the early flight was earlier than normal and the late flight was much later than is customary.

The over-all waterfowl picture is difficult to state with accuracy. In the earlier flights there was a very apparent decrease (in comparison with 1945) of all species except the green-winged teal which showed a noticeable increase. This situation correlated closely with the summer observations on the breeding grounds in Maine, southern Quebec and the Maritime provinces.

The late flights through Maine, which did not begin until mid-November, were somewhat more difficult to interpret. With November water levels in many parts of Maine being abnormally low, the ducks showed unexpected concentrations in some sections and complete absences in others. The goldeneye showed the heaviest decrease. Green-winged teal, abundant in the early flights, were somewhat scarce during the last of the season. Scaups, showing a continued decline in Maine for several years, were again very scarce. On the other hand, some very heavy flights of black ducks occurred during the second half of November and the first week of December. From a consideration of the entire fall migration period, there was little change noted in the status of the black duck from 1945.

Hunting conditions in Maine were the poorest in many years. Shooting in the inland marshes were decidedly unsatisfactory during much of the season. Along the coast, fair hunting was obtained for a few days at the beginning of the open season and again toward the close. At famed Merrymeeting Bay 1500 hunters, a record number, were present on opening day; yet the bag checks, as tabulated by the checking wardens, averaged considerably less than one duck per hunter!

COOPERATION AND EDUCATIONAL WORK

Gashwiler conducted the regular undergraduate course in Game Management throughout the quarter.

Gashwiler and Mendall continued to serve as technical advisors to the State's Federal Aid projects.

In November, Mendall accompanied John Pearce, Regional Director, to Fredericton, N.B. to confer with representatives of Ducks Unlimited and to advise them relative to their program in the Maritime provinces. Later the eastern Canadian manager of D.U. and his assistant spent three days at the Maine Unit. During this time the Unit staff gave them instructions in stomach analysis techniques, predation studies, and blood parasite determinations; also assisted them in identifying material collected during the summer on their New Brunswick study areas.

Several public lectures were given during the quarter by Gashwiler and Mendall to sportsmen's and civic groups.

The usual assistance was given to game wardens and the general public whenever such requests were made.

PERSONNEL CHANGES

Miss Eulalie Comstock, clerk, resigned in November, and her place was filled by Mrs. Margaret Spencer.

In December, Harold J. Dyer, graduate student, returned to the Unit. He will complete his studies which were nearly finished when interrupted by the war. His thesis deals with a wildlife management plan for Baxter State Park. Dyer is on leave of absence as Superintendent of the Park.

Respectfully submitted,

Howard L. Mendall, Leader
Maine Cooperative Wildlife
Research Unit

University of Maine
Orono, Maine
January 10, 1947