

Maine Cooperative Wildlife Research Unit
University of Maine
Orono, Maine

QUARTERLY REPORT

January-March
1943

RESEARCH PROJECTS^{1/}

DEER MANAGEMENT STUDIES

Sub-project: A study of conditions in winter deer yards

- Objectives: 1. To locate the important deer yards in Maine.
2. To develop plans for improving food and cover conditions in such yards as may be inadequate at present.

Assignment: Leslie L. Glasgow, Graduate Assistant

Glasgow made two trips of several days' duration each to the study areas during January and was accompanied by Brown on one trip. Some data on mortality and browsing were obtained.

Glasgow resigned his assistantship the first of February to accept war employment by the Army in a glider factory. Because of a lack of personnel, work on this project has been temporarily suspended.

RUFFED GROUSE MANAGEMENT STUDIES

Sub-project: Cover requirements of grouse in Maine

- Objectives: To determine the forest cover types preferred or required by the birds with particular reference to those during the winter months and during the breeding season.

Assignment: Howard L. Mendall, Leader.

Mendall devoted about two weeks in January, ten days in February, and ten days in March during this quarter to making field checks in

^{1/}Only those projects on which work was actually carried out during the present quarter are listed in this report. For the complete list of active projects of the Maine Unit, see memorandums to Dr. Bell of February 27, 1942, and June 15, 1942.

central and northern Maine. Winter losses among the birds in the northern sections of the State appear to have been light this winter. Favorable climatic conditions have existed nearly all winter. In the central and south-central parts of Maine, much more adverse weather has occurred, with numerous rain and ice storms. The general trend of the birds has been toward the use of coniferous tracts for resting cover and hardwood types (or mixed growth with hardwoods predominating) for feeding purposes.

Sub-project: Influence of forest types on food habits of ruffed grouse in Maine

Objectives: To ascertain, by collection of the digestive tracts of grouse and analyses of contents of same, the relative amounts of the various kinds of food taken, as correlated with the cover type in which feeding occurred.

Assignment: Charles P. Brown, Assistant Leader.

All stomach collections made up to March 15, 1943, have now been analyzed by Brown, with the total number of digestive tracts now being approximately 255. Brown is now tabulating the data thus obtained and preparing tables showing seasonal food habits of the grouse. A number of specimens were accumulated during this quarter by accession from wardens and by collecting under permit. Mendall assisted in this project in the work of collecting.

MISCELLANEOUS STUDIES

Hungarian Partridge Studies

Objectives: To release Hungarian partridges in a carefully selected study area, and to check on the success or failure of these releases in an endeavor to obtain specific information on the feasibility of attempting to stock certain areas in Maine with this species.

Assignment: Howard L. Mendall, Leader.

Mendall devoted three days late in January to field checks in the Fort Fairfield study area in extreme northern Maine. Numerous reports of the presence of the birds obtained by State Game Warden Charles Harriman were investigated by Harriman and Mendall. Although only two birds were actually seen on this trip, nevertheless many of the reports that were investigated appeared to be definitely authentic. Flocks of birds, ranging from 7 to 15 individuals, have been seen at close range on several occasions by reliable people. Since Mendall's visit to Fort Fairfield, Warden Harriman has obtained a number of other reports of the flocks. It is interesting that

all reports of the birds being seen have been within five miles of the spot of the original release, and most of them within a radius of two miles. In view of the fact that only 39 birds were released a year ago, indications to date appear very encouraging.

COOPERATION AND EDUCATIONAL WORK

Mendall continued his supervisory duties of the State Pittman-Robertson projects and participated in several conferences relating to this work. The analysis of 1942 waterfowl stomachs by the Pittman-Robertson personnel was carried out during February and early March at the Unit laboratory under Mendall's supervision. A number of mammalian stomachs were likewise analyzed under Brown's supervision.

Brown and Glasgow reorganized and grouped the Unit's museum skin collection and added a few new specimens.

Several lectures were given during this quarter to civic groups by Brown and Mendall.

Mendall attended the North American Wildlife Conference in Denver, Colorado, and while enroute home, spent two days in the Chicago office, conferring with Fish and Wildlife Service personnel and looking up file data.

PERSONNEL NOTES

With the resignation of Graduate Assistant Glasgow the first of February, the Unit is now left without any graduate assistants. Active work on the various projects has been greatly curtailed by lack of personnel and by travel restrictions, with some projects being suspended altogether. It is the desire of the State cooperators (likewise approved by the Chicago office) that the organization of the Unit's projects remain intact as long as possible but that active work be largely confined to those projects which can be conveniently carried out by Brown and Mendall, without supplementary manpower. Therefore, for the spring and summer months, it would appear that field studies should be restricted to ruffed grouse, woodcock, waterfowl, and muskrat, with what assistance the personnel of the Forestry Department can give on the deer management project.

Respectfully submitted,



Howard L. Mendall, Leader,
Maine Cooperative Wildlife
Research Unit

Orono, Maine
April 1, 1943.

Maine Cooperative Wildlife Research Unit
University of Maine
Orono, Maine

office

QUARTERLY REPORT

April-June
1943

RESEARCH PROJECTS

ECOLOGICAL STUDIES OF MUSKRAT HABITATS IN CENTRAL MAINE

- Objectives:
1. To study environmental conditions and factors influencing muskrat populations in Maine.
 2. To determine specific interrelationships existing between the muskrat and its plant environment as well as between the muskrat and other wildlife species inhabiting the same marsh areas.

Assignment: Charles P. Brown, Assistant Leader

Because of the lack of any graduate assistants, intensive work on this project could not be carried out. During the course of the waterfowl studies, however, both Brown and Mendall took advantage of all opportunities to accumulate data on the distribution and abundance of muskrats. In addition, some information was obtained from trappers and game wardens.

In general, it may be stated that the muskrat population in central and eastern Maine is at a rather unsatisfactory level. In spite of considerable relaxation in trapping pressure since the start of the war, the animals have not as yet shown appreciable increases on the areas checked. Of the few trappers who were active this spring, the majority reported light catches. The retarded spring season and high water conditions were partly responsible for the poor trapping success, but a scarcity of muskrats was likewise an important factor.

DEER MANAGEMENT STUDIES

Sub-project: Northern white cedar investigations

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

1/ Only those projects on which work was actually carried out during the present quarter are listed in this report. For the complete list of active projects of the Maine Unit, see memorandums to Dr. Bell of February 27, 1942, and June 15, 1942.

Assignment: Professor James D. Curtis, Forestry Dept.

Early in June, Curtis initiated the season's field observations on the cedar studies. Although handicapped by a lack of student assistants and by the press of other duties, he believes that the work of previous years can be followed through without a serious break in the continuity.

Sub-project: Layering experiments with white cedar

- Objectives:
1. To determine what percentage of living limbs which are put in contact with the soil will send out roots.
 2. To determine whether the branches which are not in contact with the soil will continue to grow and produce trees of browse size for white-tailed deer.
 3. To determine in this connection the approximate time required to place the trees in a position so that layering will take place.
 4. To determine what size of trees it is feasible to work with.

Assignment: Professor D. S. Demeritt, Forestry Dept.

Demeritt was able to make several checks in June on plots previously laid out. It is planned to continue this sub-project more intensively during July and August.

RUFFED GROUSE MANAGEMENT STUDIES

Sub-project: Cover requirements of grouse in Maine

- Objectives: To determine the forest cover types preferred or required by the birds with particular reference to those during the winter months and during the breeding season.

Assignment: Howard L. Mandall, Leader

Mandall devoted about two weeks in April to full time work on this study and also accumulated considerable data in May during the course of the woodcock studies.

It was gratifying to observe that ruffed grouse appeared to have gone through the winter in remarkably good condition, and it is believed that losses from climatic factors were held to a minimum.

In central Maine, the status of the bird is very satisfactory this spring, but in northern and eastern Maine the scarcity--as noted in previous quarterly reports--is even more apparent than a year ago.

Sub-project: Influence of forest types on food habits of ruffed grouse in Maine

Objectives: To ascertain, by collection of the digestive tracts of grouse and analyses of contents of same, the relative amounts of the various kinds of food taken, as correlated with the cover type in which feeding occurred.

Assignment: Charles P. Brown, Assistant Leader

During the past quarter, Brown brought the analyses of stomach collections completely up to date and also made a number of additions to the Unit's reference collection of grouse foods. A number of specimens were obtained by Brown and Mendall during April and early May to illustrate the change from winter to spring foods.

MISCELLANEOUS STUDIES

Waterfowl Distribution Studies

Objectives: To obtain and compile all possible data on the distribution and abundance of waterfowl species in Maine, especially during the breeding and migration seasons.

Assignment: Howard L. Mendall, Leader

Mendall devoted approximately a week in May and three weeks in June to field studies on migration, distribution, and nesting. Because of travel difficulties, it was decided to concentrate most of the work this year to nesting studies on a few of the most important and accessible breeding areas. Special attention was paid to the ring-necked duck, since this species is a comparative newcomer as a breeding bird in the northeast. Excellent progress has been made and to date 22 nests of the ring-necked duck alone have been located. It is hoped that considerable additions may be made to our knowledge of the life history of this little-studied species.

Good spring flights of most species of waterfowl were recorded. Likewise, good breeding populations were noted throughout the state, especially of blacks, golden-eyes, and ring-necks. Although the retarded spring season resulted in abnormally late nesting, a good breeding season is indicated--at least to date.

The wood duck continued to be scarce in Maine, both in migration and on the breeding grounds. This is the second successive year that an unsatisfactory status of the wood duck has been recorded in this section.

Brown devoted two weeks in June to assisting Mendall in locating nests.

Woodcock Studies

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

Assignment: Howard L. Mendall, Leader

Brown and Mendall spent 10 days in April and three weeks in May conducting the annual census and banding studies, chiefly in eastern Maine. A complete report on the census studies (which showed approximately a 10% decrease in population on the study areas over 1942) has already been submitted. The decrease is hard to explain in view of the light hunting pressure of last fall and may reflect back to adverse weather conditions during the breeding season of a year ago. On the other hand, wardens' reports from southern and western Maine indicated good breeding populations this year. It is to be regretted that the present census areas are not representative of all parts of Maine and it is planned to correct this deficiency at the conclusion of the war when more adequate personnel is available.

Because of adverse weather, a scarcity of birds in the easily reached covers, and the extreme difficulty of obtaining a trained bird dog, the banding studies were very disappointing and only 16 juveniles were tagged.

COOPERATION AND EDUCATIONAL WORK

Mendall continued his supervisory duties of the State Pittman-Robertson projects and participated in several conferences with Pittman-Robertson personnel. Two days were spent the last of June inspecting the Swan Island Development Project.

Considerable attention has been paid to participation in the Government's "Food for Freedom" program, especially in formulating plans for the increased production of domestic rabbits. The Unit is cooperating with the Extension Service and College of Agriculture in this endeavor.

Assistance has been rendered to members of the Maine warden force in identifying specimens, bones, and fragmentary remains of possible game animals killed illegally.

PUBLICATIONS

A manuscript by former Graduate Assistant Walter Pittman entitled "October Foods of Ruffed Grouse in Maine" appeared in the April issue

of the Journal of Wildlife Management.

Mendall completely revised the manuscript of the Unit's major project on the woodcock and the material was given its final editing in the Chicago office. It is now in the hands of the printer and is expected to come off the press in August.

A manuscript on the food of hawks and owls in Maine--based on 22 years' collections and analyses by the late W. J. Clayton--was prepared by Mendall, who tabulated Clayton's data. This manuscript has just been edited in the Chicago office and approved for publication.

Respectfully submitted,



Howard L. Mendall, Leader,
Maine Cooperative Wildlife
Research Unit

University of Maine,
Orono, Maine,
July 1, 1943.

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Maine Cooperative Wildlife Research Unit
University of Maine
Orono, Maine

QUARTERLY REPORT

July-September
1943

RESEARCH PROJECTS ^{1/}

DEER MANAGEMENT STUDIES

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 Dept.

Curtis spent considerable time during the summer in a continuation of the cedar studies. Good progress was made in spite of a shortage of student assistants. At present he is engaged in the annual fall checks of the plots.

Sub-project: Layering experiments with white cedar

- Objectives:
1. To determine what percentage of living limbs which are put in contact with the soil will send out roots.
 2. To determine whether the branches which are not in contact with the soil will continue to grow and produce trees of browse size for white-tailed deer.
 3. To determine in this connection the approximate time required to place the trees in a position so that layering will take place.
 4. To determine what size of trees it is feasible to work with.

Assignment: Professor D. B. Demeritt, Forestry Dept.

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Because of the press of added official duties, Demeritt was unable to do any intensive work on this subproject this year. However, it was possible for him to devote a little time to making observations during the course of his regular field work.

RUFFED GROUSE MANAGEMENT STUDIES

Sub-project: Cover requirements of grouse in Maine

Objectives: To determine the forest cover types preferred or required by the birds with particular reference to those during the winter months and during the breeding season.

Assignment: Howard L. Mendall, Leader

Mendall spent approximately two weeks during the quarter checking grouse covers in central and northern Maine; also a number of wardens were contacted and furnished data concerning birds observed.

Ruffed grouse enjoyed a very good breeding season in Maine and the absence of both prolonged rains or drought during the hatching season apparently was the principal factor. Large broods were noted during mid-summer and the September flocks were likewise large. Probably because of somewhat more than the normal amount of precipitation in August and September, the trend in cover preference has been toward the mixed growth and hardwood ridge types.

Sub-project: Influence of forest types on food habits of ruffed grouse in Maine

Objectives: To ascertain, by collection of the digestive tracts of grouse and analyses of contents of same, the relative amounts of the various kinds of food taken, as correlated with the cover type in which feeding occurred.

Assignment: Charles F. Brown, Assistant Leader

Brown devoted the greater part of his time during the quarter to a tabulation of data obtained during the past two years. A total of 266 stomachs have now been analyzed. The material has been tabulated on a seasonal basis. It is believed the results will prove an important contribution to our knowledge of the food habits of this bird in the northeastern part of the United States. Of special importance is the analysis of stomachs collected during the winter and spring months. A highlight of the investigation to date has been the observation of remarkably late dates in spring at which budding has still furnished the bulk of the birds' food. Even birds collected in early May had consumed large amounts of buds.

MISCELLANEOUS STUDIES

Waterfowl Distribution Studies

Objectives: To obtain and compile all possible data on the distribution and abundance of waterfowl species in Maine, especially during the breeding and migration seasons.

Assignment: Howard L. Mandall, Leader

Mandall devoted the greater part of July, about two weeks in August, and one week in September to field studies on this project. The work was a continuation of the nesting study initiated in June, the annual brood counts made on the regular check areas, and early migration checks. Investigations in Maine were supplemented by five days' work in western New Brunswick.

For the most part, resident waterfowl in this section had a good breeding season, although it was late and somewhat prolonged by a retarded spring season and by extremely high water conditions during May and June. Since the high water was present at the beginning of the breeding season and was not the result of flood conditions, it is probable that it caused little serious concern to the ducks. The late start in nesting, however, probably did work adversely to a certain extent, in that it lessened the chances for re-nesting among birds which lost their first clutches. The production of black ducks, golden-eyes, and ring-necks appeared to be normal, and large flocks of these species were found in the breeding marshes during September checks. The writer's prediction (in the last quarterly report) of another poor year for wood ducks was not borne out, as the scarcity of birds noted during the spring migration did not hold true on the breeding grounds. Although not quite up to their peak numbers of 1940 and 1941, the status of the wood duck was a great deal improved over that of last year.

Teal, both blue- and green-winged teal, were decidedly scarcer than for several years, both during the breeding season and in September. This was true not only in Maine but in the Woodstock and Fredericton sections of New Brunswick. No reason can be assigned for this condition, although it appears that the kill of teal in Maine and western New Brunswick a year ago was unusually heavy.

It is believed that considerable data of value were accumulated during the past season on the life history of the black duck and the ring-necked duck--the two species with which the summer's nesting study was chiefly concerned.

COOPERATION AND EDUCATIONAL WORK

Because of a complete lack of senior students in the forestry and wildlife conservation curricula, the regular course in game management is not being offered this fall. Brown's services have been loaned to the Zoology Department, however, for four afternoons a week to help relieve the short-handed personnel there.

Cooperative work has continued with the Extension Service in participating in the Government's "Food for Freedom" program, through the increased production of domestic rabbits. During the past quarter, at least, this work approached the status of a minor project in the amount of time devoted to it. Maine Extension Circular 179 was prepared and printed. This was sent through the regular mailing list of both the Unit and the Maine Extension Service. Also, Fish and Wildlife Service form letter 2645, Fish and Wildlife Service Conservation Bulletin 25, and Missouri Agricultural Experiment Station Circular 289 have all been obtained in large quantity for local distribution in Maine. Many inquiries and requests for literature have already been received and it is believed this endeavor will prove very much worthwhile.

Mendall continued his duties as technical advisor of the State Pittman-Robertson projects and participated in several conferences with Pittman-Robertson personnel. Brown spent two days at the Swan Island Development Project in July advising Pittman-Robertson personnel on the deer repellent studies being carried out there.

Brown and Mendall spent several days reading the galley proof and page proof of the woodcock manuscript.

Respectfully submitted,



Howard L. Mendall, Leader,
Maine Cooperative Wildlife
Research Unit

University of Maine,
Orono, Maine,
October 12, 1945.

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Maine Cooperative Wildlife Research Unit
University of Maine
Orono, Maine

QUARTERLY REPORT

October-December

1943

RESEARCH PROJECTS^{1/}

DEER MANAGEMENT STUDIES

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 Dept.

Curtis completed his fall checks on the study areas and is now engaged in working up his data. Considerable progress was made on this sub-project during the past year and, although much of the data obtained on germination and survival factors affecting the seedlings was of a negative type, worthwhile information has been acquired. The season's results may be summarized as follows:

Rechecks of Permanent Plots:

A. Alton. The principal work carried on was the spring and fall collection of foliage and the annual fall inspection of the artificially sown seed spots, square foot plots and individual trees. The survival rate of the seedlings was very unsatisfactory. In November some trapping was done to determine what rodents might be damaging seedlings on the plots. Brown assisted Curtis in this latter activity. Only red-backed mice (Clethrionomys gapperi) were caught.

B. North Bradford. In July some pruning was done on two plots and, in addition, on some larger trees (6" - 8" d.b.h.) adjacent to the plots to serve as a comparison in growth rates as they affect healing times for the cuts. This winter, it is planned to complete the small amount of thinning required in the isolation strips around the plots.

C. Forest Nursery. Two beds were sown in the fall of 1942 and one in the spring of 1943. On half of each fall-sown bed soil was used

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to cover the seed and on the other half sand was used. One bed was left uncovered while the other was covered with dry leaves. There was little difference observed in the amount of germination of earth- and sand-covered fall-sown beds but there was a marked difference, as there was in the previous year, on the bed covered by leaves as compared with the one left bare. The latter had excellent germination; the former practically none.

An additional spring-sown bed was successful although germination and growth were slightly behind the fall-sown beds. Here again, there was little to choose between the soil- and sand-covered seeds.

D. Seed spots and broadcast sowings. Spring and fall examinations of the seed spots were made and substantial loss from frost-heaving in the clay soil was recorded. Rodents accounted for some additional losses. The density of vegetation excluded an examination of the broadcast seeded areas.

E. Because of the heavy precipitation of the spring, summer and fall, it was impossible to finish the broadcast burning of the area in the cedar swale as previously planned.

New Studies on Seedling Survival;

In order to follow through the survival of year-old cedar seedlings, some 500 of them were tagged on various sites in different localities. These will be examined in the spring and fall of 1944 to determine winter and summer mortality.

Sub-project: Layering experiments with white cedar

- Objectives:
1. To determine what percentage of living limbs which are put in contact with the soil will send out roots.
 2. To determine whether the branches which are not in contact with the soil will continue to grow and produce trees of browse size for white-tailed deer.
 3. To determine in this connection the approximate time required to place the trees in a position so that layering will take place.
 4. To determine what size of trees it is feasible to work with.

Assignment: Professor D. B. Demeritt, Forestry Dept.

Administrative duties at the University prevented Demeritt from carrying on intensive research on this sub-project and field work consisted chiefly of general observations only. One very interesting survey with Curtis was made on the Alton study area.

During November 22 and 23, 1943, an ice storm did considerable damage over much of the southern two-thirds of Maine. A check of the Alton study plots revealed that many cedars, spruces and tamaracks were either thrown, broken or uprooted. Cedars were mostly bowed and uprooted, spruces mostly broken or uprooted and the tamaracks mostly broken.

In effect, the result of the storm was to make available a substantial amount of cedar browse, and it was therefore considered advisable to secure some record of the amount. The examination was made four days after the storm with the objective of retallying the same area next summer to find how many of the stems were permanently bent. The trees were tallied by crown classes if they had been forced down by the storm to a point where the bulk of their foliage was available for deer. Damage was heaviest in the lower crown classes.

RUFFED GROUSE MANAGEMENT STUDIES

Sub-project: Cover requirements of grouse in Maine

Objectives: To determine the forest cover types preferred or required by the birds with particular reference to those during the winter months and during the breeding season.

Assignment: Howard L. Mendall, Leader

Mendall devoted about one week in October, 10 days in November, and two weeks in December to field studies. Grouse populations were checked in areas previously surveyed and several new areas were investigated including a few covers in east-central New Hampshire.

With the grouse project in its third year, a few indications are now at hand relative to the phase of the cycle. In general, substantial population declines over last year have been noted throughout much of central, eastern, and northern Maine. Except in the former region this trend was expected, based on previous studies. The reduced numbers in north-central Maine, after the favorable populations of a year ago, especially noted in the Moosehead Lake region, would indicate that portion of Maine to be at an early stage of the decline. In southern and western Maine fewer field studies were made but these, together with wardens' reports, show slightly more favorable populations, although there is little indication to date as to whether the cycle there is on the upswing or is moving downward. One point is becoming increasingly evident--the cycle is extremely variable over different parts of the State; extensive regions of low populations may still contain localized areas of grouse abundance.

The general population shift from hardwood types to those with an abundance of conifers was much more strongly evident in December this season than in 1942. Apparently this was due to the heavy snowfall

and intense cold of late November and the first half of December. By mid-December the depth of snow in the woods in central and southern Maine was greater than at any time last winter.

Two bad ice storms have occurred to date in western, south-central, and west-central Maine and probably have resulted in a certain amount of grouse mortality, although no positive evidence of this was obtained.

Sub-project: Influence of forest types on food habits of ruffed grouse in Maine

Objectives: To ascertain, by collection of the digestive tracts of grouse and analyses of contents of same, the relative amounts of the various kinds of food taken, as correlated with the cover type in which feeding occurred.

Assignment: Charles P. Brown, Assistant Leader

Brown closed out the accumulation of data on this sub-project as of October 1 insofar as his thesis is concerned, although the work will continue from that date as a Unit project. All stomachs to be used in the thesis write-up have now been analyzed and the material tabulated and correlated with cover-type data. Brown is now engaged in the actual preparation of his thesis.

In connection with the continuation of this study--with certain variations--as a Unit project, stomachs obtained from wardens and sportsmen during the past hunting season as well as those collected by Brown and Mendall under permit are now being analyzed.

Brown spent three days in field work in western Maine on this sub-project.

MISCELLANEOUS STUDIES

Waterfowl Distribution Studies

Objectives: To obtain and compile all possible data on the distribution and abundance of waterfowl species in Maine, especially during the breeding and migration seasons.

Assignment: Howard L. Mendall, Leader

Mendall was in the field for about two and one-half weeks in October and 10 days in November obtaining data on the distribution and abundance of waterfowl during the fall season and in obtaining specimens for the museum and for stomach analysis.

Weather conditions were very similar to those of a year ago--that is, above normal temperatures for October and early November, broken by sudden and severe cold in mid-November. Because of this fact, migration data and figures on comparative abundance at given localities were difficult to obtain. There were no well defined "flights" through the State, and data secured at concentration points are misleading. For instance, at the famous concentration area in Merymeeting Bay in late September and early October, blue-winged teal were reported as "more abundant than ever" with black ducks practically non-existent--both evidences presenting, in this writer's opinion, entirely false pictures as to the status of these two species. In general, black ducks, ring-necked ducks, and wood ducks were present in very satisfactory numbers in Maine as a whole. The status of golden-eyes, both species of teal, and buffleheads appeared "fair." Scaups were largely absent, and even after the mid-November freeze they did not appear in their usual numbers. Pintails--until recent years comparatively rare except in extreme southern Maine--are continuing to be increasingly common in the northern and eastern counties.

Mendall spent several days in tabulating nesting and brood data obtained during the summer.

COOPERATION AND EDUCATIONAL WORK

Brown continued his teaching duties in the Zoology laboratories until the close of the fall semester in December. At present he is giving the regular game management course under the A.S.T.P. curricula.

Mendall continued his cooperative work with the State Pittman-Robertson program; also with the Extension Service in encouraging the production of domestic rabbits. Assistance has been given wardens in the identification of specimens, and fragmentary remains of animals found or seized.

PUBLICATIONS

A paper by former Graduate Assistant Takos appeared in the October issue of the Journal of Wildlife Management under the title "Trapping and Banding Muskrats." This material was prepared while Takos was at the Unit.

The Unit's woodcock bulletin entitled "The Ecology and Management of the American Woodcock", with Mendall and C. M. Aldous as authors, came off the press in December and is now being distributed. Publication costs were paid by the Unit out of Fish and Game Department funds carried over from last year.

Respectfully submitted,

Howard L. Mendall

Howard L. Mendall, Leader,
Maine Cooperative Wildlife
Research Unit

University of Maine,
Orono, Maine,
January 10, 1944.