

Douglas County Grouse Management Area

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This is a progress report on the conservation department's activities at the Douglas county grouse management area. This area has elicited a considerable amount of interest in the past both before and after a grouse management project was established. It is believed that far more work has been done on this area than most people have understood. It should also be realized that this area is only one of several in the state and that the amount of work attempted and accomplished is commensurate with the funds available for this type of development.

Included in the report is a history of the activities that preceded the selection of this area for intensive grouse management.

History (Compiled from Letters and Reports in Wisconsin Conservation Department Files).

January 8, 1946 – A meeting was held at the Plankinton Hotel, Milwaukee, to discuss development of bird dog field trial areas in Wisconsin. Twenty-eight persons attended, including representatives of field trial organizations (including Mr. Clare Wildner), the press, the U.S. Forest Service, and the conservation department. Ralph Conway and James Wildner were department representatives present. Comments by the dog men were all directed toward having the conservation department establish state-operated field trial grounds in grouse habitat. Mr. Conway stated that the department had no program for field trial grounds. He also stated that everyone except those interested in hunting dogs could not be excluded from public hunting grounds. The group recommended that the department establish at least two areas in central and northern Wisconsin for research and experimental work on sharp-tailed grouse, prairie chicken and quail. They further recommended continuation of controlled burning, thinning of cover, spring planting for fall bird feeding, and predator control at the Douglas County Bird Sanctuary.

March 26, 1946 – In a memo to W.F. Grimmer, Therman Deerwester reported on his survey of the "Solon Springs field trial area." He suggested establishing an area of 17 ½ sections to be administered by a P-R research project for experimental work on grouse. He proposed a system of food patches, predator control, and population studies. Of the various persons he contacted (only Clare Wildner and a Mr. Arnold are listed by name), "...none...were willing to commit themselves to the extent of definitely claiming any benefit as a result of the burning." Only Mr. Wildner expressed an interest in thinning of cover on field trial courses. Mr. Arnold, chairman of the county board committee on conservation, felt that thinning the field trial courses should be the responsibility of the field trial

association, since they were the only group interested. Considerable local interest in propagating grouse artificially was reported by Deerwester in this memo.

June 25 and 26, 1946 – Irven O. Buss and Therman Deerwester investigated the “Douglas County Bird Sanctuary.” In a memo about this survey to Ralph Conway, dated July 8, 1946, Mr. Buss recommended that if a grouse project is continued by the department, this area be included as “...one of several experimental areas to study grouse under protected conditions.” He also recommended that all management work be kept on an experimental level, including cutting and/or burning. Further recommendations were for studies on the effect of controlled burns, periodic cuttings, a food patch system, winter feeding, and predator control if it can be “... practiced under supervisory guidance.”

July 1, 1947 – Pittman-Robertson Grouse Management Research Project (13-R) was activated. The grouse project is the immediate administrative unit for operating the Douglas county grouse area.

August 6, 1947 – Senator A.A. Lenroot, Jr., in a letter to Director E.J. Vanderwell, urged that the department begin a grouse research and management program on the Douglas county area immediately, and requested that the matter be discussed at the next commission meeting on August 15, 1947.

August 11, 1947 – Mr. Vanderwell informed Senator Lenroot that the policy of the department was to proceed slowly on the Douglas county grouse project, so that arrangements with all parties concerned could be completed satisfactorily.

August 26, 1947 – W.S. Feeney met with the Conservation Committee of the Douglas county board. This meeting resulted in a proposal to withdraw “Bird Sanctuary” lands from forest crop and lease them to the state for grouse management purposes.

October 14, 1947 – The Conservation Commission authorized a public hearing to determine public sentiment on the matter of withdrawing Douglas county forest crop lands to be leased to the state for a grouse study area.

November 8, 1947 – The public hearing was held in the courthouse at Superior. The hearing was conducted by Ernest Swift. It was unanimously voted that the grouse study area (“Bird Sanctuary”) be established, and the conservation department meet with the Douglas county conservation committee to determine lease or purchase terms for acquiring the necessary land. No transcript of proceedings at this hearing was taken.

November 14, 1947 – The Conservation Commission unanimously approved a request for permission to proceed with the Douglas county grouse project after a report on the November 8 hearing and favorable statements by Commissioner Mooreland. The commission instructed the department to meet with the Douglas County

Conservation Committee to settle terms of the state-county contract, and to report back to the commission regarding any action taken.

December 3, 1947 – Fred G. Wilson, Alex Yorman and Irven O. Buss of the conservation department met with the Douglas County Conservation Committee at Superior. It was unanimously voted that 63 county-owned forties (2520 acres) be withdrawn from forest crop lands and leased to the conservation department for 50 years at \$.10 per acre per year. Timber stumpage on the area remained the property of the county, but all land management practices were to be recommended by the conservation department.

December 12, 1947 – The Conservation Commission unanimously approved the procedure agreed upon at the December 3 meeting.

February 17, 1948 – Mr. S.P. Gray, Douglas county clerk, returned signed leases to I.O. Buss of the conservation department.

March 15, 1948 – The conservation department director signed the order for withdrawal of Douglas county forest crop lands for grouse management purposes. The withdrawal order was dated February 16, 1948.

Spring, 1948 – Active field work was started by the P-R Grouse Research Project at the Douglas County Grouse Management Area. A summary report of work to date on the area follows:

PERSONNEL*

B.J. Bradle – July, 1947 - September, 1947
R.B. Hovind – July, 1947 - February, 1948
James B. Hale – October 1, 1947 - November 1, 1949
George C. Halazon – April 1, 1948 - August 1, 1949
W.S. Feeney – November, 1948 - May 10, 1949
F.V. Holzer – October, 1949 - to date
William C. Clark (Temporary) - September 1949 only
Harold E. Etienne (Temporary) - October 1949 only
F.N. Hamerstrom Jr. – October 5, 1949 - to date
Frances Hamerstrom – March 29, 1950 - to date

*Project leaders and assistants

LAND CLEARING

May 17, 1948 – One hundred twenty acres experimentally burned with help of Forest Protection Division. Total cost, based on Forest Protection Division Manual of charges \$82.87 (\$.69 per acre).

Summer, 1948 – Four quadrats each (one in each major cover type) established in burned and non-burned areas to follow effect of fire on plant successions; total of eight quadrats. Soil samples taken to study effect of fire on soils before and after burning. Small mammal trappings inaugurated to study effect of fire on other wildlife, particularly buffer species for grouse predators.

Summer, 1949 – Seventy acres of jackpine, popple and willow and hazel brush cleared by hand. Rented Seaman Tiller used for clearing 27 acres at a total cost of \$488.90 (\$18.10 per acre) excluding project labor. Twenty-four quadrats established to check effort of tiller on plant successions. Plant quadrats and mammal traplines for 1948 spring burn, were re-tallied. Some burn and control quadrats destroyed by unauthorized mowing.

Summer, 1950 – Remaining burn plus control quadrats re-tallied.

Summer, 1951 – Tiller quadrats re-examined.

FOOD PATCHES

June, 1948 – Twenty acres of buckwheat planted and fenced with single-wire deer-proof fence. Total cost for planting and fencing, excluding project labor - \$274.47 (\$13.72/acre).

June, 1949 – Fifteen acres of 20-acre field replanted to buckwheat, remaining five acres planted to plots of vetch, sunflowers, soybeans and field peas (these never matured due to competition from volunteer buckwheat). Six one-half acre buckwheat patches were planted, one on each of the remaining six field trial courses. There was thus a food patch on each of the seven courses. Cost \$242.09.

1950 – Five acres of 20-acre field dragged to encourage volunteer buckwheat. One food patch planted on each of seven field trial courses, each patch consisting of one acre of buckwheat, one-half acre of corn, one-half acre plowed and left to weeds. Also an extra acre patch of buckwheat, and small acreage of corn on shares with local farmer. Corn and buckwheat damaged by frost and deer; seven one-acre patches of rye planted in late summer. Total cost, excluding project labor, \$327.50.

1951 – Seven patches, one on each field trial course, consisting of ½-acre plot of alfalfa and brome with a nurse crop of oats, plus one acre of rye (planted 1950). In the 20-acre field, two acres of alfalfa-brome and oats, plus 2 ½ acres of buckwheat were planted. Total cost, exclusive of project labor, \$280.23.

1952 – No new planting. Fair catch of alfalfa in plot on each course and in 20-acre field; a little volunteer buckwheat and rye.

WINTER FEEDING

1947-48 – Five feeders; three privately-operated hoppers (Wildner) and two project spike feeders for ear corn. Harvesting and distributing buckwheat, cost \$89.00.

1948-49 – Six feeders of elevated type for feeding shocked buckwheat for the 20-acre field were used. In January 1949 buckwheat was stockpiled at each feeder location at a cost of \$27.00.

1949-50 – Nine feeder locations utilizing stacked buckwheat. Four acres of buckwheat left standing in big field.

1950-51 – Nine feeder locations: last year's buckwheat stacks, opened to expose grain stored inside. Fresh stacks (two) at 20-acre field.

1951-52 – Some grain still available in old stacks; new buckwheat stacked in 20-acre field and at one other feeder.

Wintering flocks

Utilization

The purpose of establishing cultivated food patches was to experiment with the possibility that this type of range management would bolster a relatively poor range. Sharptail grouse populations have thrived and increased to tremendous proportions in natural range where there were few or no cultivated food patches. It was hoped that the cultivated food patches might improve range conditions.

The above section on winter feeding shows the effect made to increase winter food supplies. Field studies have shown that the food patches received the greatest utilization in late fall and early winter. For example, in the winter of 1949-50 the highest flock counts using the food patches occurred in December when 95 birds were tallied. The counts for the remainder of the winter were as follows: January, 19; February, 31; and March, 23. This pattern of utilization was observed during each of the winters in the period 1949-51. The degree to which the food patches were used during the entire winter is illustrated in the following history:

<u>Winter</u>	<u>Utilization</u>
1948-49	Feeders were not utilized from January to March. After the first week in March feeders were used regularly.
1949-50	Four of the nine feeders were used by 95 birds in December, 19 in January, 31 in February, and 23 in March.

1950-51 The feeders were used very little this winter.

The feeders were created by stacking buckwheat in the food patch sites.

DANCING GROUND SURVEYS

1948 – One dancing ground on area averaging six cocks present through the season.

1949 – One dancing ground - about 14 cocks.

1950 – Three sections added to survey area on east side to make total of about half a township. Five dancing grounds (one in newly added area) - two to 11 cocks each. About twice as many cocks as in 1949. Fall booming noted on all grounds.

1951 – About one-third more cocks than 1950. Five dancing grounds observed. One dancing ground (in newly added area, not on Douglas county area proper) planted to pines by Douglas county.

1952 – Decrease of about 50 per cent in the number of cocks.

BROOD COUNTS

1948 – 6 broods found on area: 13, 10, 10, 7, 6, 2.

1949 – 13 broods found on area; range 3-18, average 7.4.

1950 – 21 separate broods on area; range 2-9, average 5.4. Hatch later in 1950 than in 1949.

1951 – 30 broods observed. Hatch again late, but about a week earlier than 1950.

MISCELLANEOUS

Cover map of area completed in fall, 1947.

Counts were kept of grouse flushed during field trials in fall:

1947 – “about fifty flushes per day”

1948 – 96 flushes in 8 circuits of course (average 28/day)

1949 – 538 flushes in 10 circuits of course (average 106/day)

1950 – Birds flushed wild and often off the courses; accurate count impossible. However, “both sharptails and ruffed grouse were even more prevalent than last season.” (Jack E. Downs, “Northern States Trials,” American Field 154(41)1950:372-373.

1951 – 125 flushes daily

Commission order closing leased lands and surrounding area (5440 acres) to all hunting and trapping except deer hunting obtained in fall of 1948.

Closed area boundary lines and/or roads brushed and posted in September 1948.

Boundaries and roads re-posted in October 1949, September 1950, and September 1951.

Trapping and banding

1949-50 – 72 sharptails banded.

1950-51 – 17 sharptails banded and 7 recoveries from last year.

Project Expenditures

For the most part it was possible to keep accurate records of the cost of the various phases of the project area activities. A breakdown of the expenditures is shown below:

Douglas County Grouse Management Area Expenditures 1948-51

Habitat Improvement and management:

Clearing, brushing and burning	\$1,403.77
Winter feeding	585.00
Food patches	1,124.29
Posting (5440 acres)	87.00
Field trials (personnel assisting)	96.00
Leasing (2480 acres)	<u>1,240.00</u>
Total	\$4,531.06

Population Survey and Investigation:

Spring surveys	535.00
Winter survey and trapping	1,630.00
Brood survey	851.00
Hunter checks	<u>244.00</u>
Total	\$3,260.00

Administration and supervision*

1,000.00

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Grand Total \$8,791.06

*Includes hearings, supervision of area work, mapping, accounting, report writing, and other administrative routine.

Habitat development

As would be expected, the most important expenditure required to maintain sharptail grouse habitat at the study area was for development of habitat and its maintenance. A significant portion of the expenditures of \$1403.77 was for clearing land used in dog field trials. Most of the food patches also served a similar function.

Considering that the maximum usage of food patches should be in winter, the amount of feed provided exceeded that required by the area sharptail grouse population. The largest count of birds ever observed on the area was in the fall of 1950 when from 250-300 birds concentrated on the area for a short time. However, the maximum usage was in December 1950 when 95 birds were observed in the feed patches. This amount dwindled down to a much lower number later in the winter, as was previously shown.

Studies 1947-51

In order to determine to what extent food patches were used, how much clearing was required to keep the area attractive to birds, and the cost of various types of clearing efforts, it was necessary to conduct year round studies on the area. The cost of these efforts is shown above. Attempts were made to get information on population status throughout the year, production of broods, movement of banded birds, use of food patches, and breeding behavior. The results of these studies are all documented in Pittman-Robertson quarterly progress reports.

Future studies

When this area was first considered for experimental management purposes prior to 1940 it was surrounded by relatively good sharptail habitat. At the present time the surrounding lands have grown up out of the desirable clearing and brush stage so that it now falls in the class of being submarginal. This development immediately limits the size of the area grouse population. We consider that the amount of food, clearings, and brushy areas today is greater than the local population requires. Future development work and study will be based on these conditions.

Do we need cultivated food patches? Sharp-tailed grouse populations have been able to maintain themselves in high numbers in areas where few if any cultivated crops were available for food. Intensive food patch development work was carried on in this area. This land management practice was conducted also to learn if a sharptail grouse population on a relatively small area surrounded by inferior range could be significantly raised by increasing food supplies. To date, field studies have shown that the increase in the population of the sharptail area was no greater than that in other areas where the birds depended on wild food sources. We therefore see no reason to continue to plant extensive acreages of food patches. In the future, winter feed will be supplied as needed.

If new evidence develops to show that cultivated food patches are required in fall or some other season of the year, seedings will be made accordingly.

All Wisconsin sharptail grouse management studies (1940-52) have been reviewed and summarized by Hamerstrom and Hamerstrom (1952. "Sharptails into the Shadows?", F.N. Hamerstrom Jr., Frances Hamerstrom and O.E. Mattson, Wis. Cons. Dept., in press) and have shown that one of the most important habitat requirements is that of maintaining clearings and brushy areas. This is the number one objective of the project in future enterprises. At present the amount of this type of habitat on the area is nearly sufficient.

The Douglas county sharp-tailed grouse management area is now considered as being one of several key areas characterized by having openings that are essential for perpetuation of this game bird. It is unfortunate that the area is only 2480 acres in size. However, since the number of areas containing openings suitable for sharptails has greatly decreased, every acre counts.

The population trend will be followed closely by fall, winter, and spring surveys.

Because funds for these types of game management, including research, will always be limited, it is apparent that much more can be accomplished by working with more areas rather than expending all available monies on one location.

Dog field trials

The policy of the Wisconsin Conservation Department is to encourage field trials throughout the state. Areas will be made available for this purpose. In the past the Douglas county area (Solon Springs) has been managed for both sharptails and dog trials. Continuance of the management of the area for dog trials by intensive clearing and food patch development work no longer seems feasible. It is believed that by managing an area so that it will produce the maximum amount of wildlife, a greater service can be performed for dog owners and the public than if funds were diverted for ground work that facilitates field trials but does not necessarily affect the wildlife. If areas are kept at their maximum wildlife production capacity then dog owners interested in field trials can, with minimum expenditures, improve an area for the holding of the trials.

Summary

Intensive sharptail management studies were conducted on the Douglas county grouse management area for four years. The sharptail grouse population did not respond to this management primarily because the surrounding area's habitat has deteriorated through forest development, both natural and planted. The area will continue to be maintained as an opening and an annual census of the grouse population will be conducted to follow any trends that might develop.

A considerable amount of information was obtained during the course of the studies which is now being used in a statewide sharptail grouse habitat development program.