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THE CONTROLLED HUNTING AREAS AND THE PHEASANT REFUGE-MANAGEMENT SYSTEM
IN NORTHWESTERN OHIO

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Introduction

Pheasant management, as developed in the study conducted in northwestern Ohio, involves two phases--production and harvest. Production problems are disposed of by the Ohio pheasant refuge-management system, and the harvest problems by various modifications of the Wood County controlled-hunting system. The two systems--production and harvest--exist and function well separately, but because of their interdependence they reach their maximum efficiency when operated simultaneously on the same areas.

This report is not of a proposed or theoretical management-production plan, but of management systems now in operation and carefully tested over periods exceeding five years. The one best test of any management plan is whether it actually succeeds, and at a cost less than that of other existing methods. The present plan survives this test as it (a) produces pheasants by natural propagation at a small fraction of artificial propagation costs; (b) makes possible an average take of 50 to 80 cock birds per square mile; (c) produces surplus birds for stocking purposes, of which more than 2,000 have been live-trapped in a single winter at low cost on a single refuge; (d) provides good hunting for more sportsmen, not less; (e) involves participation of the landowner in both the production (management) and the harvest of the crop; and (f) provides an orderly harvesting system without abuses, which safeguards the crop and creates ideal sportsmen-landowner relationships.

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General Statement

1. Ohio has 28 southeastern unglaciated hill counties that are essentially worthless for pheasant production and 15 additional counties (mostly northeastern) that are relatively unproductive, because of miscellaneous factors.
2. In the remaining 45 counties (all either Till Plain or Lake Plain counties) corn is the predominant agricultural crop and the natural pheasant-producing capacity is high.
3. In many of these 45 counties (west central and northwestern Ohio) the pheasant-producing capacity has been greatly increased during the last ten years by the adoption and extension of the Ohio pheasant-refuge management system and the spread of the Wood County plan of controlled hunting.
4. These developments have made the ring-necked pheasant the principal game bird of Ohio and have made possible the largest pheasant harvest of any State east of the Mississippi, a take of more than 620,000 male birds annually. More than 98 percent of this crop is produced by natural propagation, and in the best producing counties no artificially propagated birds are released.
5. The Ohio pheasant-refuge management system was developed from 1928 to 1932 and has been expanding rapidly and with increasing success since that time.
6. The Wood County controlled-hunting plan began in 1930 and 1931 and has been so successful that it has spread to all but one township in the county and is being adopted as rapidly as organization can be effected in many townships of other counties of northwestern Ohio.
7. The Ohio Wildlife Research Station, a cooperative organization maintained jointly by the Ohio State University, the American Wildlife Institute, the State Division of Conservation, and the Federal Bureau of Biological Survey, has made both the pheasant refuge-management system and the controlled-hunting system the subjects of major research, with three men assigned to the work. One of its staff members has been closely associated with the present problems and related pheasant research since 1925.

The Ohio Pheasant-Refuge Management System

The Ohio pheasant-refuge management system involves--

1. A large permanent State-owned or State-leased centrally located refuge in each township of 100 to 400 acres, including at least 40 acres of timber and brush with some adjacent waste land and a network of drainage ditches for use as dispersal paths.

2. The maintenance of about four smaller auxiliary refuges, one to serve each corner of the township. These smaller refuges may be temporary (for one or two years only) and without extensive management improvements. They are locally maintained by the individual farmer, by a group of farmers and sportsmen, or by the township cooperative-hunting association.

3. The production of a very large pheasant crop on high-value lands without interference with agriculture. The region is intensively cultivated. Forest land is less than 5 percent. Townships have 88 percent to 99 percent of their total area in farms and 70 percent to 90 percent in harvested crops. Farms by township average 75 to 110 acres each and are worth \$100 to \$175 per acre, even at present reduced land values.

4. Education and cooperation of landowners in the best utilization of the small acreage of wild land available for pheasant production: (a) Improvement and preservation of small wooded or brushy tracts; (b) occasional weedy fallow land for nest cover; (c) roadside cover improvements and restriction on mowing; (d) leaving fencerow cover; (e) use of occasional low-land-value sand ridges with oak brush as refuges; (f) appreciation of high value of ditches for nesting, shelter, and travel purposes; (g) minimizing of nest destruction during mowing of meadows; (h) leaving majority of corn crop uncut and a small part or the gleanings unharvested for winter feeding; (i) control of the chief predators: man, dogs, cats, and crows.

5. Management of the large State refuge. Development of cover, fencing of pastured parts, cutting of clearings, and creation of brush piles and shelters. Encouragement of bait nesting-cover on or near the refuge. Control of man, cats, dogs, crows, and other predators where destructive. Planting of food strips along refuge margins. Corn planted on or near the refuge usually shows some damage, so the damaged parts and additional rows are purchased by the State and left standing for winter feeding. Similar management measures are practiced to a greater or lesser extent by individuals and associations on the auxiliary refuges.

6. Extensive winter feeding, chiefly with corn, both standing and ear corn. Feeding is the key to a large pheasant crop, as a heavy breeding stock requires much more food than that usually available naturally. Feeding (a) attracts birds to the safety of the refuge, (b) results in increased resistance to winter hazards, (c) results in increased disease resistance, (d) reduces predation, (e) concentrates birds for scientific and management studies, (f) enables checks on size of breeding stock, condition, and undesirable shifts in the sex ratio, and (g) results in a heavier, healthier bird that nests earlier and with greater reproduction efficiency. Some feeding is done by farmers, sportsmen, and associations on the auxiliary refuges or elsewhere.

7. Live trapping of surplus stock and removal to understocked areas. A well-maintained State refuge in the center of a pheasant-management township should, with the aid of the auxiliary refuges, not only maintain the breeding stock and a large harvest each fall, but produce a considerable surplus as well. For instance, on the 36 square miles of Liberty Township, Wood County

(see accompanying map), there is a take of 1,800 to 2,880 male birds each year (50 to 80 per square mile). The take in 1936 was 2,366 (66 per square mile). In spite of this heavy kill, more than 1,800 birds were live-trapped (winter of 1936-37) on the single central refuge and removed for stocking elsewhere.

8. Leaving reproduction stock. As about 600 birds were left on the refuge for stocking purposes, the early winter population of the refuge was about 2,400 birds. As the auxiliary refuges and the remainder of the township can easily be demonstrated to have 50 percent or more of the township's pheasant population, the total pheasant population was at least twice 2,400, or 4,800 (134 birds per square mile), at the end of the hunting season and at least 4,800 plus the kill of 2,400 birds, or 7,200 birds (200 per square mile) at the beginning of the 9-day hunting season, November 15-25. Shifts in sex-ratio figures based on several thousand birds observed before and after the hunting season substantiate these figures.

9. Production of a surplus above the take. A properly maintained central refuge makes possible not only a large annual kill but also the production of a valuable surplus of 1,500 to 2,000 birds. If the total cost of the refuge maintenance be charged up to the surplus birds produced, the cost per bird (exclusive of labor costs) is no more than 20 to 24 cents. These birds are of high class stock from an inheritance standpoint and considerably healthier and heavier than most artificially propagated birds. As they are already acclimatized and adjusted to cold, natural foods, predators, and other natural conditions, and are not malnourished, they have an exceedingly high rate of survival. They tend to remain where released--not a single bird has ever returned to the refuge where trapped, and recoveries tend to be very near the point of release. For the above reasons, these naturally propagated birds have proved to be superior for stocking purposes. Research data now on file would indicate that these choice birds naturally produced have a stocking value equal to at least 1.5 to 2.0 typical game-farm adults and equal to 3 to 8 artificially propagated baby pheasants of 8 to 12 weeks of age, because of their greater survival and reproductive ability.

Such general management measures would not produce equivalent results on low-quality pheasant territory. With present techniques, costs would be much greater and the results rather disappointing on marginal and submarginal pheasant territory. In most of the instances where this system has given best results, no. 1 or no. 2 pheasant territory was concerned. The former accidental pheasant yield on these same areas, however, was only a small fraction of the present planned or managed yield.

The success of the refuge-management system depends upon (a) proper selection of the refuge area in relation to sound wildlife-agricultural land use, (b) cooperation of landowners and sportsmen with "more pheasants desired" a universal attitude, and (c) a hard working, intelligent game protector and refuge manager of the county agricultural-agent type, who can appeal to local pride, who believes wholeheartedly in his work, and who is immune to inclement weather, bribes, and discouragements. He must be able to solve difficult local problems without guidance, to teach by demonstration and example, and to make management suggestions so indirectly and in such a subtle way that those who adopt them feel that the new practices are really their own ideas.

The pheasant refuge management system makes possible a pheasant yield sufficiently large to warrant the establishment of a controlled-hunting system. This system, in turn, helps to insure the permanency of the pheasant crop and to develop the farmer-sportsmen relationships upon which the crop in no small part depends. Either system can be developed and function separately, but the most striking results and the greatest pheasant yields have been obtained where the two systems have functioned side by side.

The Wood County Controlled-Hunting System

The Wood County controlled-hunting system began its development in 1930 as a defense against trespassing abuses during the hunting season. The following notice to hunters was issued by the Plain Church Game Protective Association of Wood County:

As the hunting season approaches, the anxiety of land-owners increases. It is a deplorable and well-known fact that many who are otherwise law-abiding citizens become outlaws when out hunting. They kill our quail, hen pheasants, poultry, and sometimes our livestock, destroy our fences, and utterly disregard the game laws by trespassing upon our land without permission. Since these laws are so flagrantly violated by so many unscrupulous hunters, therefore, we, as farmers have met and organized ourselves into an association:

In spite of their common complaint against trespassing abuses and their common desire to end them, organization difficulties might have prevented any cooperative solution had it not been that the township was a natural unit, that is, the majority of the residents of each township attended the same township school, church, grange, or lodge. Hence, the social factor was important, individual differences of opinion being submerged in the cooperative plan so that to remain outside meant a degree of social ostracism. The first real association, the Plain Church Game Protective Association, succeeded because of an additional community objective, the raising of money to pay off a mortgage and build a new church.

The development of these associations has been carefully followed from the beginning, and during the past year a project of the Ohio Wildlife Research Station has included a careful survey of each association, with a tabulation of some 140 points about each, followed by an individual analysis and evaluation. It has been an unusual opportunity to observe this big out-door experiment, with contrasting systems developing side by side. Features that have proved desirable or undesirable have been carefully analyzed as to Why did it work? or Why did it fail to work? As the years have passed the set-up for the associations has tended toward standardization by borrowing the best features of the most successful.

No two associations have the same regulations but the general set-up is about as follows:

1. The majority of the landowners of a township (or part of a township) form a game-protective association.

2. Hunting is by association members only.

3. Landowners, tenants, and their children hunt on their own land without permit or elsewhere in the territory of the association on a 25-cent permit.

4. Township residents who do not own land can join the association for 50 cents.

5. Nonresidents of the township become members of the association by purchase of a permit tag at prices ranging from \$2 to \$3.50. Depending on the size of the game crop, an upper limit of 200 to 350 outsider permits to be sold is established (about 2 for each 50 acres).

6. Purchase of nonresident permit (permit tag is worn on hunting coat) entitles the holder to hunt on all association lands in the township (usually 5,000 to 20,000 acres--a map given with permit designates the open areas) during the 9-day open season (November 15-25, one Sunday out) and the kill is restricted to three species: Pheasants, Hungarian partridges, and rabbits.

7. General information about the permit holder is recorded, including name, description, residence, and State hunting-license number.

8. The landowners' interests are protected by forbidding (a) hunting within 500 feet of any building or in standing corn where a team is at work, (b) destruction of fences or other property, and (c) killing or shooting at protected game. Violation of these regulations results in revoking the permit and in prosecution. A landowner or tenant usually reserves the right to say under what conditions any person or persons may hunt on his land and to limit the number to 6 on each 80 acres if he so desires.

9. Each township association elects a president and a secretary-treasurer, and all arrangements are made through its officers. From 2 to 20 enforcement deputies are appointed to minimize violations before, during, and after the hunting season, and necessary mimeographing and printing are done. Each landowner is signed up for participation in the coming hunting season. Refuges and closed areas are posted. Open areas are given "welcome signs". Refuge care, winter feeding, and certain other pheasant-management work are arranged for. Landowners are encouraged to recognize key pheasant-producing areas and to develop and protect them.

The advantages of the controlled-hunting system may be enumerated as follows:

1. There is an orderly harvest of the surplus crop each year.

2. Law violations are minimized. Unscrupulous hunters avoid controlled hunting areas.

3. Property interests of landowners are protected by the elimination of trespassing abuses.

4. An adequate brood stock is preserved.

5. A larger pheasant yield is possible and a given area provides good hunting for more hunters--not less.

6. Landowners regard larger game crops as an asset, not as a liability.

7. Landowners modify agricultural operations in the direction of pheasant management.

8. From 65 percent to 95 percent of the farmer-landowners are themselves hunters, and so view game production from both the farmers' and sportsmen's viewpoints.

9. Ideal farmer-sportsmen relationships are made possible. Sportsmen value highly the privileges granted, and farmers take great pride in the number of birds taken on their farms. Instead of finding repeated posting of lands with "No Hunting" signs, hunters are pleased to see such refreshing and psychologically sound signs as "Welcome Members of Blank Township Game Protective Association."

10. The nonresident hunter (city man) is pleased with the system because he is guaranteed good hunting close to his home and thus is saved much in time and travel expense.

11. The system is essentially a democratic and a nonprofit one--no one who obeys the regulations is excluded. Hunters consider that the small fees paid merely support the regulation and management upon which a continued crop depends. This mutually advantageous system prevents the development of exclusive nondemocratic harvest plans.

A number of townships each collect \$500 to \$1,000 a year (about \$20 to \$40 for each section of land involved). The Liberty Township Association collected \$965.25 in fees in 1936. The income is expended for the following items:

1. Printing and mimeographing, posting of association lands, and cost of contacting association members. (The officers usually serve without pay.)

2. Wages. The unemployment problem in the township is solved by hiring 2 to 20 part-time (often 2 to 4 full-time) enforcement officers to check on regulations and reduce violations.

3. Management measures, refuge developments, winter feeding, and new breeding stock.

4. Social events. Some associations use 10 percent to 20 percent of proceeds to pay for two social events for association members--one before the hunting season and one after. These are important in the administration of the system, particularly in smoothing differences and in promoting community interest in the plan.

5. Other items. A rather typical distribution of the unexpended balance is as follows: One-sixth to the township school, one-sixth to the township church, and four-sixths prorated to the landowners on an acreage basis. The landowners usually feel sufficiently compensated if their payments cover damage to fences and crops by hunters and corn consumption by pheasants.

That this controlled-hunting system works is shown by the following:

1. Because of the eleven important advantages outlined under the above heading on the subject.

2. Because the plan produces more pheasants, results in an orderly harvest, protects property rights, causes the landowner to want more game--not less--and results in ideal farmer-sportsmen relationships.

3. Because the plan recognizes the landowner's individual pride in his land and what it produces and appeals to his ego, as he likes to have his farm attractive to pheasants and to harbor more birds than that of his neighbor.

4. Because the plan is developed and maintained as a local project with local initiative and local talent doing the work--hence local pride and local interest in the results.

5. Because of the Ohio pheasant refuge-management system, which provides the key to high-production yields.

6. Because of the application of scientific management practices, both in the production and in the harvest of the crop. This information has been supplied in a subtle way, not forced on the township residents.

7. Most valuable of all has been the contribution of hard-working county game protectors with sufficient ability to recognize weaknesses and with sufficient tact to correct them; and yet doing nothing to detract from the community nature of the project.

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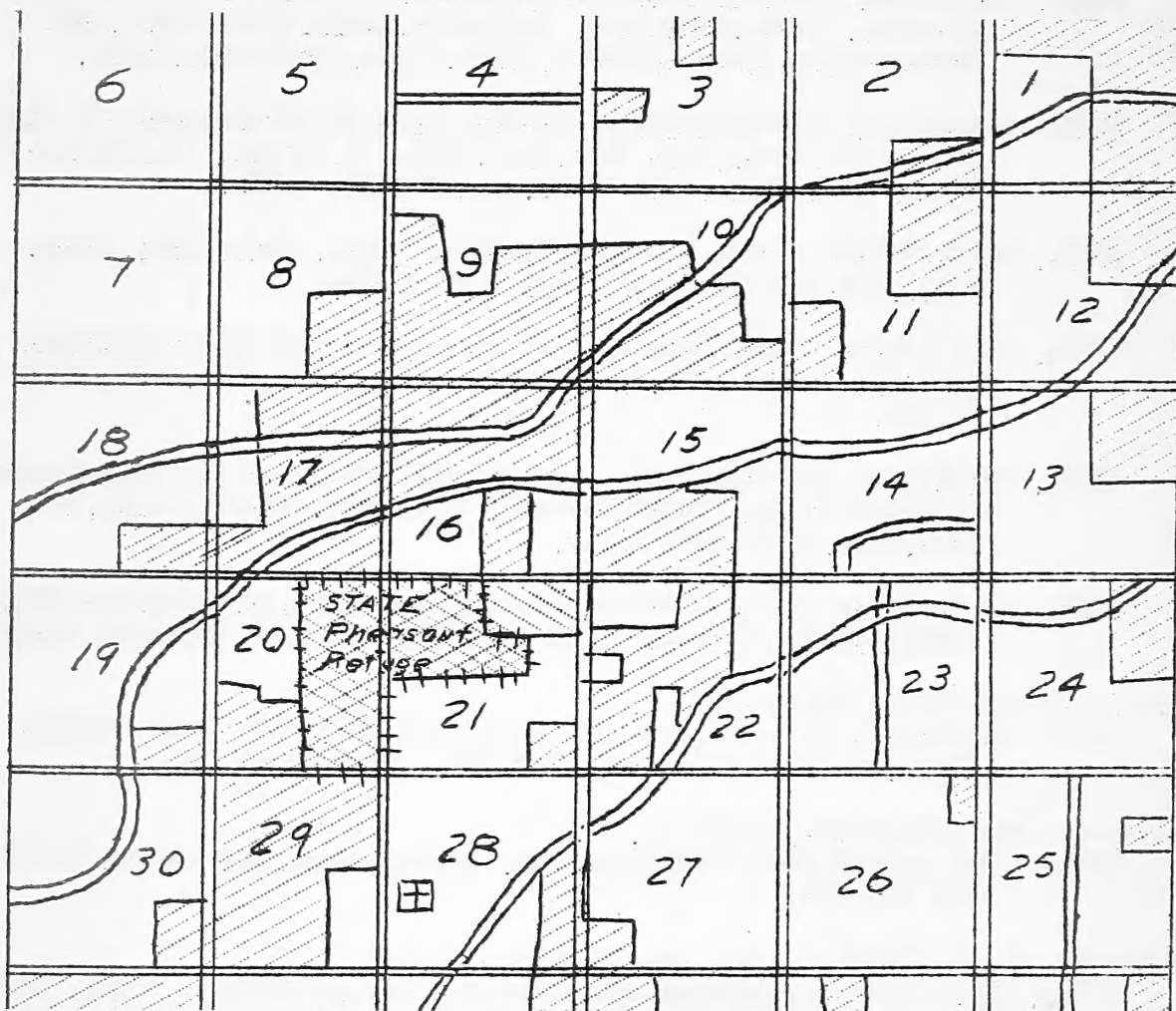
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Map of Liberty Township Game Protective Association lands, Wood County, Ohio, 1936.

The white area is open to hunting, the shaded area is closed. Area of township 23,040 acres, of which 76 percent, or 17,500 acres, is open to hunting by holders of association permits. (Nearly all the closed area, except the State refuge, is a part of two other hunting associations and is open to hunting by permit holders of these associations.)



During the winter following the hunting season each year 1,500 to 2,000 surplus birds are live-trapped on the central refuge and removed elsewhere for breeding stock, at a cost of 20 to 40 cents each.

In 1936, 300 nonresident permits at \$3 each were sold to 300 hunters who traveled from 38 cities in 21 counties of the State. There were also sold 72 resident-nonlandowner permits at 50 cents each and 117 resident-landowner permits at 25 cents each. There were 11 honorary permits, 140 farmers hunted on their own lands without permit, and 210 hunted on the lands of the other two associations in the township. The 850 hunters (24 per square mile) during the 9-day season made a kill of 2,366 male pheasants (66 per square mile), 216 Hungarian partridges, and 840 rabbits.