

Research Report No. 24  
(Game)

AN EVALUATION  
of  
WISCONSIN'S LICENSED SHOOTING PRESERVE PROGRAM

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## ABSTRACT

In 1965 there were 138 shooting preserves licensed to stock and shoot pheasants in the state. An evaluation was carried on in 1964 and 1965 to determine the location and extent of the pheasant harvest on shooting preserves under recent regulation changes which further liberalized hunting opportunities.

In 1964-65, 25,600 pheasants were stocked on licensed preserves, mainly in fall shortly before or during the hunting season. Operators reported a total harvest of 13,486 pheasants; 9,418 (70%) were cocks.

A special survey of 52 selected preserve operators showed that hunting activity was greatest during November and December, with weekend hunting being most popular. During the 1964-65 season, 7,687 pheasants were reported shot on the sampled preserves, with about 13% of the kill containing wild-reared birds. Forty percent of the total kill of wild-reared birds occurred during the statewide pheasant hunting season.

The licensed shooting preserve program has been an accepted game management function for over 35 years. It preserves some marsh habitat, accommodates a small portion of the state's upland game hunters, provides additional sport and, on a limited scale, encourages private game management. However, under present regulations, shooting preserves in some areas have operated to the detriment of native pheasant populations.

Three recommendations are made to protect native pheasant populations without seriously compromising growth of the shooting preserve program:

- (1) Develop a shooting preserve policy stating the official position of the Department which would allow regulated growth of the program according to planned objectives. This policy would be implemented by guidelines which game managers could use in reviewing applications for new preserves;
- (2) Divide the state into two management zones with specific regulations and criteria for establishing preserves to fulfill the needs of both pheasants and hunters;
- and (3) Promote private game management on preserves with technical assistance and cost-sharing for wildlife practices provided by various state and federal agencies.

#### ACKNOWLEDGEMENTS

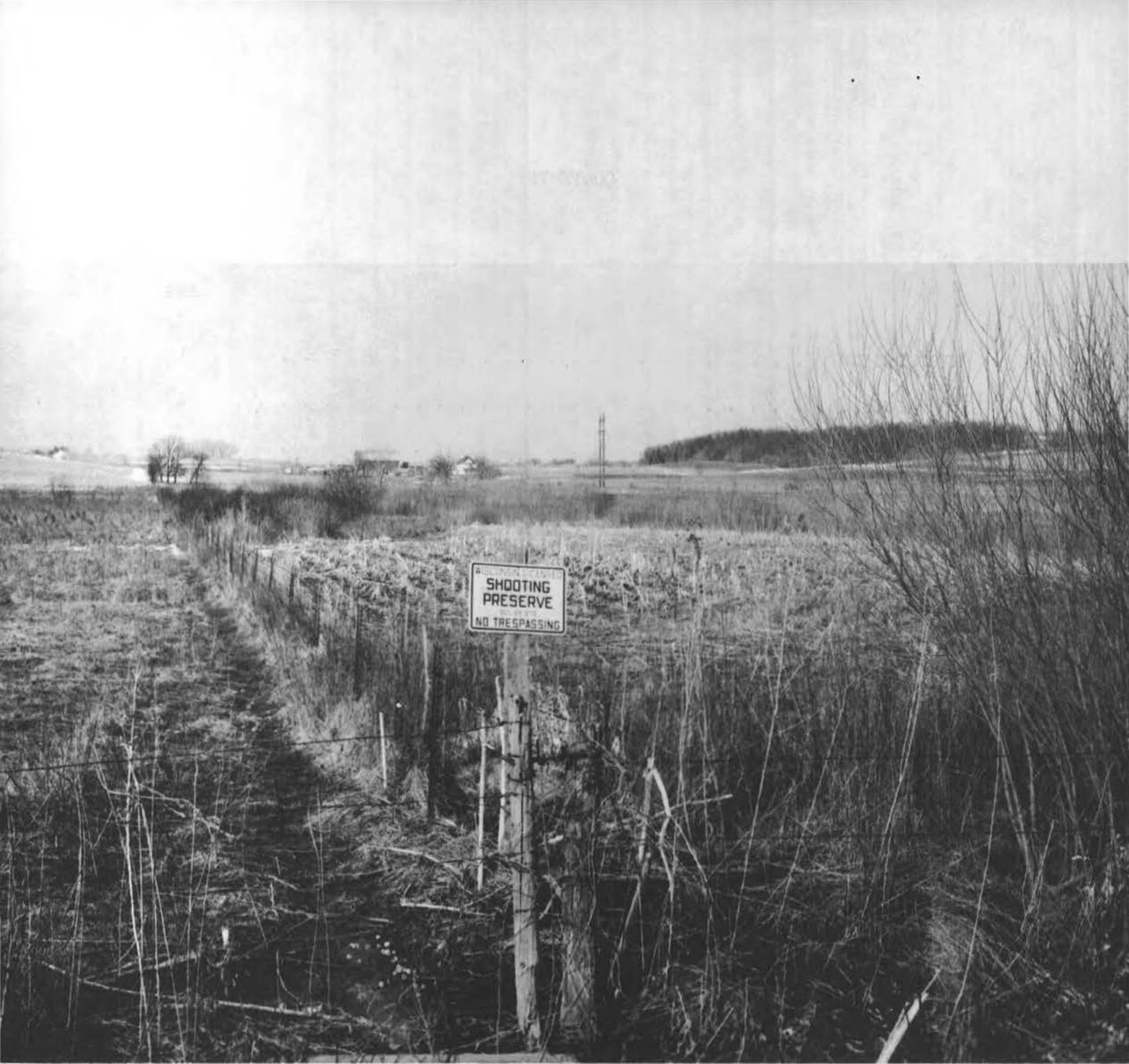
I am grateful to the Wisconsin licensed shooting preserve operators who supplied detailed information on their pheasant stocking and shooting activities during the 1964-65 season. Their voluntary efforts made this study possible. Officers of the Wisconsin Game Preserve Association contributed suggestions during the initial stages of this study. Special thanks go to Otto R. Kuehn, secretary of the Association, who was especially helpful and understanding. William H. Field and Dorothy Paulson made available the annual shooting preserve reports in the Department files. John M. Gates reviewed the manuscript and provided many helpful suggestions during its preparation.

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## INTRODUCTION

Shooting preserves are privately owned areas, licensed by the state, on which liberalized hunting of pen-reared and wild-produced game is allowed by special permission of the preserve operator. Regulations require payment of an annual license fee, posting and fencing of boundaries, releasing of pen-reared game, limiting the harvest to a predetermined percentage of the released game, a shooting season of fixed length, and submission of annual reports. In 1965, there were 138 licensed shooting preserves in the state.

Wisconsin's Licensed Shooting Preserve Act was passed by the state legislature in 1931 (Section 29.573, Wis. Stats.). According to the provisions of this act, "The Conservation Commission is hereby authorized to issue licenses for shooting preserves and the releasing, shooting, possession and use of pheasants thereon when in the judgment of the Commission operations under such license will result in a net increase in the supply of pheasants in the state, and will otherwise be in the public interest".

Since 1931, there have been nine revisions in the administrative code covering various regulations of the shooting preserve program (Wis. Administrative Code - Section WCD 19.07). The changes through 1957 generally placed progressively more restrictions upon the preserve operators (restricting size, number and location of preserves and specifying stocking policies and shooting seasons for pheasants).

In 1959, several major changes in the administrative code provided incentives for existing preserve operators to increase their activities and afforded new opportunities for others to establish preserves. These changes included:

- (1) Eliminating the restriction against granting licenses for areas including pheasant wintering areas;
- (2) Eliminating extra credits for spring hen stocking;
- (3) Increasing the hunting season length through January 31;
- (4) Providing a minimum stocking of pheasants in the ratio of not less than one pheasant for each four acres of area licensed up to 640 acres; and
- (5) Increasing incentives for habitat preservation and improvement.

In 1963, three important changes were made in the shooting preserve code which included:

- (1) Providing several methods for posting preserves with the method to be selected at the discretion of the preserve owner;
- (2) Allowing the hunting of cock and hen pheasants from the beginning of the statewide season through the end of February; and
- (3) Requiring the banding of all pheasants liberated on licensed preserves.

The shooting preserve program has received periodic criticism from sportsmen in Wisconsin (Schorger, 1955). Major objections revolved around liberal seasons and restriction of public hunting in some areas. Wisconsin's licensed shooting preserve program was evaluated in 1953 (Wagner, Field and Ozburn) and 1962 (Burger) to determine what effect earlier regulation changes had on the operation of shooting preserves.

This evaluation was aimed at updating our knowledge of preserve activities. Specific objectives were to determine: (1) Which licensed shooting preserves stock and shoot the majority of pheasants each year; (2) What percentage of the monthly pheasant kill on preserves is made up of stocked and wild-reared birds; (3) If shooting wild-reared pheasants in January and February is locally detrimental to the native pheasant populations; and (4) What types and amount of permanent cover are being licensed under the preserve program.

The study was carried out in 1964 and 1965. This report covers material obtained from the Department files and from shooting preserve operators. A detailed review of the philosophy of controlled shooting and history of preserves in Wisconsin was beyond the scope of this study. These subjects were previously covered by Burger (1962).

The regulations under which Wisconsin licensed shooting preserves currently operate are listed in Appendix A.

## TECHNIQUES

At the time shooting preserve applications are submitted to the Department for review, applicants must furnish a description of the area and include the types and amount of habitat to be covered by the license. Licensees are required by law to submit annual reports summarizing their stocking and shooting activities. These data, maintained in Department files, were examined and tabulations made of the number of active preserves, number of pheasants stocked and harvested, and type and amount of habitat on each preserve. This approach provided information on the status of preserves licensed in Wisconsin through 1964-65.

I attended two meetings of the Wisconsin Game Preserve Association in 1964 to discuss objectives of this study with preserve operators and to determine the most practical method of obtaining detailed information unavailable in annual reports for this evaluation. While several operators expressed reservations about the study, many welcomed an evaluation so they could appraise their own operation in relation to the entire program.

With concurrence of the Wisconsin Game Preserve Association, I sampled shooting preserves in the state using a special report form. A preserve was included in this study if 50 or more pheasants were reported shot during the 1963-64 hunting season, with two exceptions: (1) Several preserves reporting fewer than 50 birds shot were included to get a desirable distribution of preserves in southeastern Wisconsin; and (2) one preserve which harvested approximately 1,800 pheasants was not included because of complicated record-keeping.

Shortly before the start of the 1964-65 hunting season, 52 preserve operators were sent special report forms to record: (1) daily kill of stocked (banded) and wild-reared (unbanded) pheasants; and (2) band numbers of individual birds killed. Operators were also asked to record dates and numbers of birds stocked (including band numbers) when stocking procedures permitted this type of information. Completed forms were returned monthly to the Department for review and tabulation. Forty-three preserve operators cooperated in this study.

### FINDINGS

#### Status of Licensed Shooting Preserves Through 1964-65

##### Number

Between 1931 and 1935, 63 preserves were licensed for pheasant hunting in Wisconsin. From 1935 to 1957, the number of licensed preserves varied between 60 and 75 with the number of new licenses generally keeping pace with cancellations. Because of the more liberalized regulations beginning in 1959, there has been a steady increase in the number of preserves licensed (Table 1).

TABLE I

#### Preserves Licensed, 1957-65

	Year								
	1957	1958	1959	1960	1961	1962	1963	1964	1965
Number Licensed	72	79	87	100	110	116	125	127	138

Approximately 80% of the preserves licensed in 1964-65 lie within the primary southeastern Wisconsin pheasant range (Figure 1). The number of preserves outside this range has always remained a small percentage of the total although it has increased slightly in recent years.

##### Acreage

Beginning December 1, 1959, administrative regulations were changed and no new preserve licenses were issued for tracts larger than 640 acres or smaller than 120 acres. A tabulation was made of the size of each preserve licensed in 1964-65 (Table 2). The preserves with acreages above and below the new regulation size limitations were licensed prior to 1959 and were allowed to maintain these acreages in the program.



Figure 1. Location of licensed shooting preserves, 1964-65.

TABLE 2

Size of Shooting Preserves, 1964-65

	Acres										
	0- 50	51- 100	101- 150	151- 200	201- 250	251- 300	301- 350	351- 400	401- 450	451- 500	501-
Number of Preserves	3	4	25	19	14	11	9	10	7	4	2
Percent of Total	2.4	3.1	19.7	15.0	11.0	8.7	7.1	7.9	5.5	3.1	1.6

	Acres									
	551- 600	601- 650	651- 700	701- 750	751- 800	801- 850	851- 900	901- 950	951- 1000	Over 1000
Number of Preserves	3	6	0	1	0	1	0	0	0	8
Percent of total	2.4	4.7	--	0.8	--	0.8	--	--	--	6.4

Over 45% (58) of the licensed preserves ranged in size from 100 to 250 acres; 41% (52) contained between 250 and 650 acres. Eight preserves (6%) were over 1,000 acres; seven of these were located in the primary southeastern Wisconsin pheasant range. A total of 43,907 acres was licensed under the shooting preserve program in 1964-65.

Habitat

Information on the type and amount of habitat included in the shooting preserve program during 1964-65 was tabulated for 70 preserves (Table 3). This information was available only for preserves licensed since 1959 and did not include preserves under 120 or over 640 acres. The data were obtained from Department files and are listed according to categories used by district game managers to evaluate preserve applications.

TABLE 3

Cover Types on 70 Shooting Preserves, 1964-65

Cover Type	Percent of Total Land Area					Total Acres	Percent of Total
	0	1-25	26-50	51-75	76-100		
Marsh, cattail	14*	43	9	3	1	2,739	14.7
Marsh, sedge	31	30	4	3	2	1,755	9.4
Marsh, grass	31	37	1	1	0	777	4.2
Marsh, brush	48	21	1	0	0	584	3.1
Woods	10	52	7	0	1	2,601	14.0
Upland brush	52	18	0	0	0	226	1.2
Hay or perm. pasture	33	28	7	2	0	2,037	11.0
Cultivated land	3	22	19	21	5	7,563	40.7
Other	42	27	1	0	0	311	1.7

\* No. of preserves

All Wisconsin shooting preserves were associated with agricultural activities. Over 40% of the total acreage of the 70 preserves was under cultivation with an additional 11% devoted to hay or permanent pasture. Approximately 31% of the acreage was in marsh cover. Woodlands and upland brush accounted for 15% of the acreage. Approximately 25% of the acreage on these preserves contained good winter habitat for pheasants according to observations of district game managers.

A review was made of the percentage of total land area occupied by the various cover types on each preserve. Analysis of marsh vegetation on the 70 preserves showed that 48 (69%) had no brush cover, 31 (44%) lacked sedge or grass cover and 14 (20%) were devoid of cattail cover. Some form of marsh cover was, however, an integral part of every preserve. On a few preserves, marsh cover occupied between 50 and 100% of the licensed acreage.

Results of the 1964-65 Evaluation

Pheasant Stocking

All preserves must make a yearly minimum stocking of pheasants to maintain their license. Birds are stocked in the ratio of not less than one pheasant for each four acres licensed except that preserves larger than 640 acres are required to stock a minimum of 160 pheasants. Birds must be of high quality and not less than 12 weeks old. While some preserve operators hatch and raise pheasants for stocking, most operators purchase birds from commercial game breeders.

Approximately 25,600 pheasants were stocked on Wisconsin's licensed shooting preserves in 1964-65 (Table 4). Of the 127 preserves licensed, 32 (25%) reported stocking birds between March 1 and June 30, one of two major time periods listed on the annual report forms supplied by the Department. Twenty-four of these preserves also reported stocking some birds in fall. The majority of birds were stocked on 114 preserves between July 1 and February 28.

TABLE 4

Preserve Stocking Activities, 1964-65

Sex	Time Period	
	March 1 - June 30	July 1 - February 28
Cocks	336	15,023
Hens	1,187	7,518
Unknown	0	1,566
Total	1,523	24,107

Only 15 of the 52 preserve operators sampled in this study (29%) supplied usable information on birds stocked by month throughout the 1964-65 season. Their reports showed stocking only during the hunting season. Cocks and hens were stocked on most preserves, although cocks were exclusively stocked on several preserves.

Four of the 15 preserves were hunted only on the day pheasants were stocked; eight were hunted on the day of stocking and for several days thereafter. Two preserves were hunted during months when no stocking took place. One preserve made a practice of permitting hunting only on the day after birds were stocked. These data suggest that hunting shortly after stocking was the general practice, which should have promoted the harvest of a large percentage of the stocked birds.

Preserve records indicate an average of 40-50% of the stocked birds shot within a year of release. This recovery figure is comparable to that obtained for cocks stocked on Department public hunting grounds (Kabat, Kozlik, Thompson and Wagner, 1955).

Hunting Pressure

Detailed hunting pressure information was obtained from 43 of the 52 preserves sampled. One preserve license was cancelled early in the year and eight operators either did not supply data or provided information of limited value for this analysis.

The 1964-65 pheasant hunting season on Wisconsin licensed shooting preserves extended from October 17, 1964 to February 28, 1965, a period of 135 days. Less than half the sampled preserves were open to hunting on any one day during the season, with the exception of two days (Fig. 2). Approximately 50% of the preserves sampled were hunted for five days or less in any one month.

Seventeen preserves (40%) opened for pheasant hunting on the weekend of October 17-18, 1964, the opening weekend of the statewide pheasant season; 30 (70%) opened sometime during October (Table 5). Ten preserves (23%) were not open to hunting until November; four of these opened after the statewide pheasant season closed on November 22, 1964.

While one preserve ended hunting activities on October 25, 1964, the majority remained open into February. Sixteen preserves (37%) closed on the weekend of February 27-28, 1965.

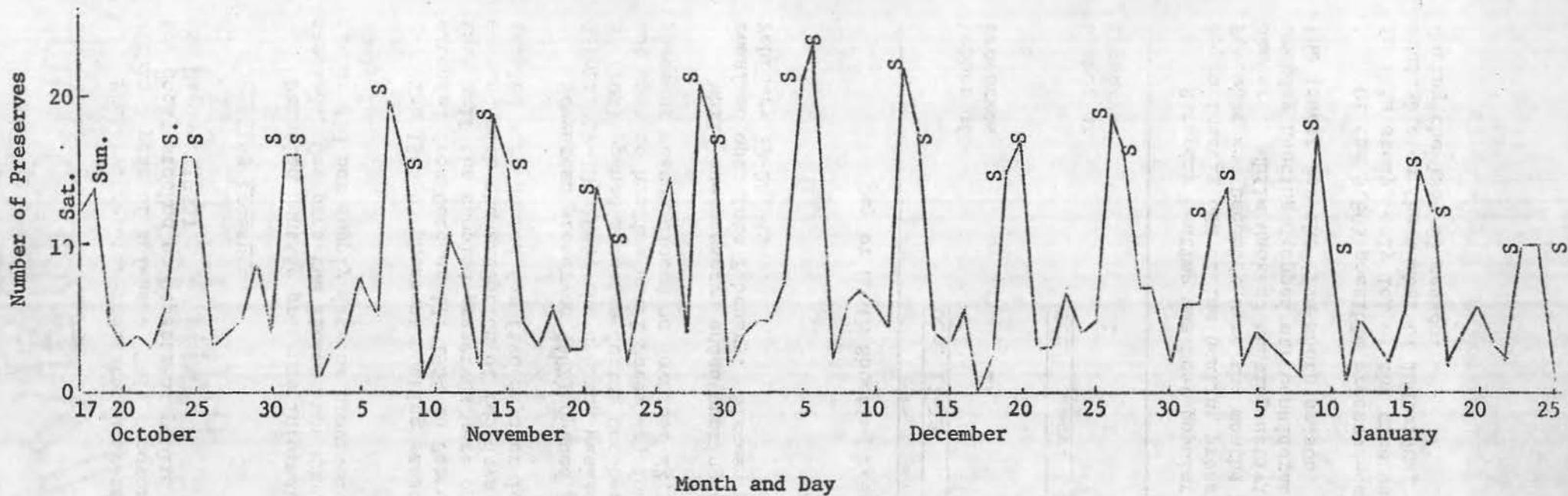
TABLE 5

Day or Month Shooting Preserves Opened or Closed, 1964-65

Number of Preserves	Opened for Season					Unknown	
	Oct. 17-18	October	November	December			
	17	30	10	1		2	
Number of Preserves	Closed for Season						
	Oct.	Nov.	Dec.	Jan.	Feb.	Feb. 27-28	Unknown
	1	1	7	3	26	16	5

Saturday hunting was most popular, followed closely by Sunday (Table 6). Approximately 60% of the hunting pressure on preserves took place on weekends. November and December were the months of greatest hunting activity, followed by January. While weekend hunting activity in February was comparable to October, weekday hunting dropped off considerably with the preserve-days of hunting being the lowest for the five-month season.

Of the 5,805 possible preserve-days of hunting on the 43 preserves reporting in this study, only 16% of the time was actually utilized. No information was available on the number of individual hunters using these preserves on any one day during the 1964-65 season.



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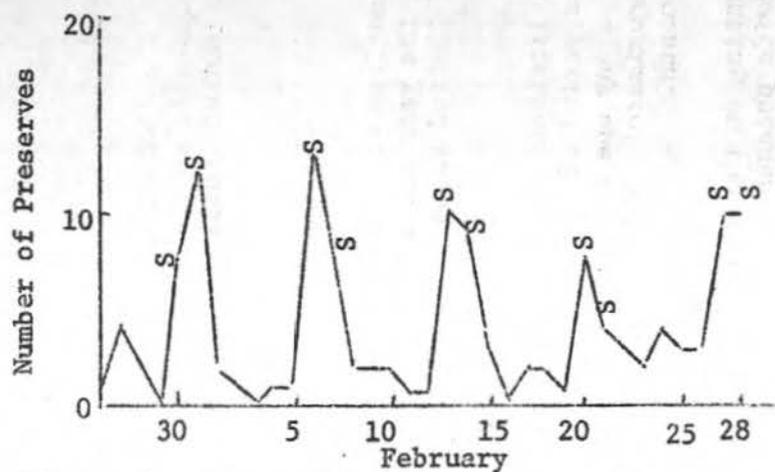


Figure 2. Number of preserves open to hunting, October 17, 1964 to February 28, 1965. Sample of 43 preserves.

TABLE 6

Preserve-days of Hunting, 1964-65

Day of Week	Month						Total	Percent of Total
	Oct.	Nov.	Dec.	Jan.	Feb.	Total		
Saturday	44	74	77	62	41	298	32.8	
Sunday	30	73	74	57	31	265	28.8	
Monday	8	11	16	6	10	51	5.6	
Tuesday	7	17	23	14	5	66	7.2	
Wednesday	9	32	27	16	8	92	10.0	
Thursday	12	34	21	9	7	83	9.0	
Friday	10	13	20	14	6	63	6.9	
Total	120	254	258	178	108	918	100.0	
Percent of Total	13.1	27.7	28.1	19.4	11.7	100.0		

Pheasant Harvest

Pheasant harvest data were tabulated from annual reports submitted to the Department by the 127 preserves licensed in 1964-65. These reports indicated a harvest of 13,486 pheasants; 9,418 (70%) were cocks. Approximately 57% (72) of the licensed preserves shot less than 100 birds; 42% (53) shot less than 50 (Table 7). One operator reported a harvest of 1,825 pheasants. This preserve has operated as a commercial enterprise for several years. Twenty preserves reported no hunting during the season.

TABLE 7

Pheasants Harvested on Licensed Preserves, 1964-65

Number of Preserves	Number of Pheasants						
	1-50	51-100	101-150	151-200	201-250	251-300	301-350
	53	19	12	6	4	4	3

Number of Preserves	Number of Pheasants				
	501-550	601-650	701-750	801-850	Over 1000
	1	2	1	1	1

Licensed shooting preserves in Wisconsin are allowed to shoot 75% of the number of birds stocked (regulations, Appendix A). Since 25,600 birds were stocked, an additional 5,700 birds could have been legally taken during the 1964-65 season. Nine percent of the 127 preserves harvested their legal quota of pheasants. The majority of preserves reported harvesting about 50% of the number stocked.

The 43 preserves supplying detailed information for this study reported a harvest of 7,678 pheasants during the 1964-65 hunting season; 4,991 (65%) were cocks (Table 8). November and December were peak harvest months, with over half the season's kill occurring during this period. This coincides with the number of preserves open in November and December, and bears a relationship to total hunting pressure and greater stocking effort.

Approximately 13% (984) of the season kill consisted of wild-reared birds, about equally divided between cocks and hens (Table 8). Twenty percent of the October kill consisted of wild-reared birds (205; 13% were cocks). This percentage decreased steadily each month through February when 8% of the kill comprised wild-reared birds, the majority of which were hens (58, 5.8% of the total kill).

Thirty percent of the total number of pheasants harvested on the 43 preserves (1,893 stocked and 396 wild-reared birds) were shot during the statewide pheasant season, October 17-November 22, 1964. Forty percent of the total kill of wild-reared birds on preserves occurred during this period.

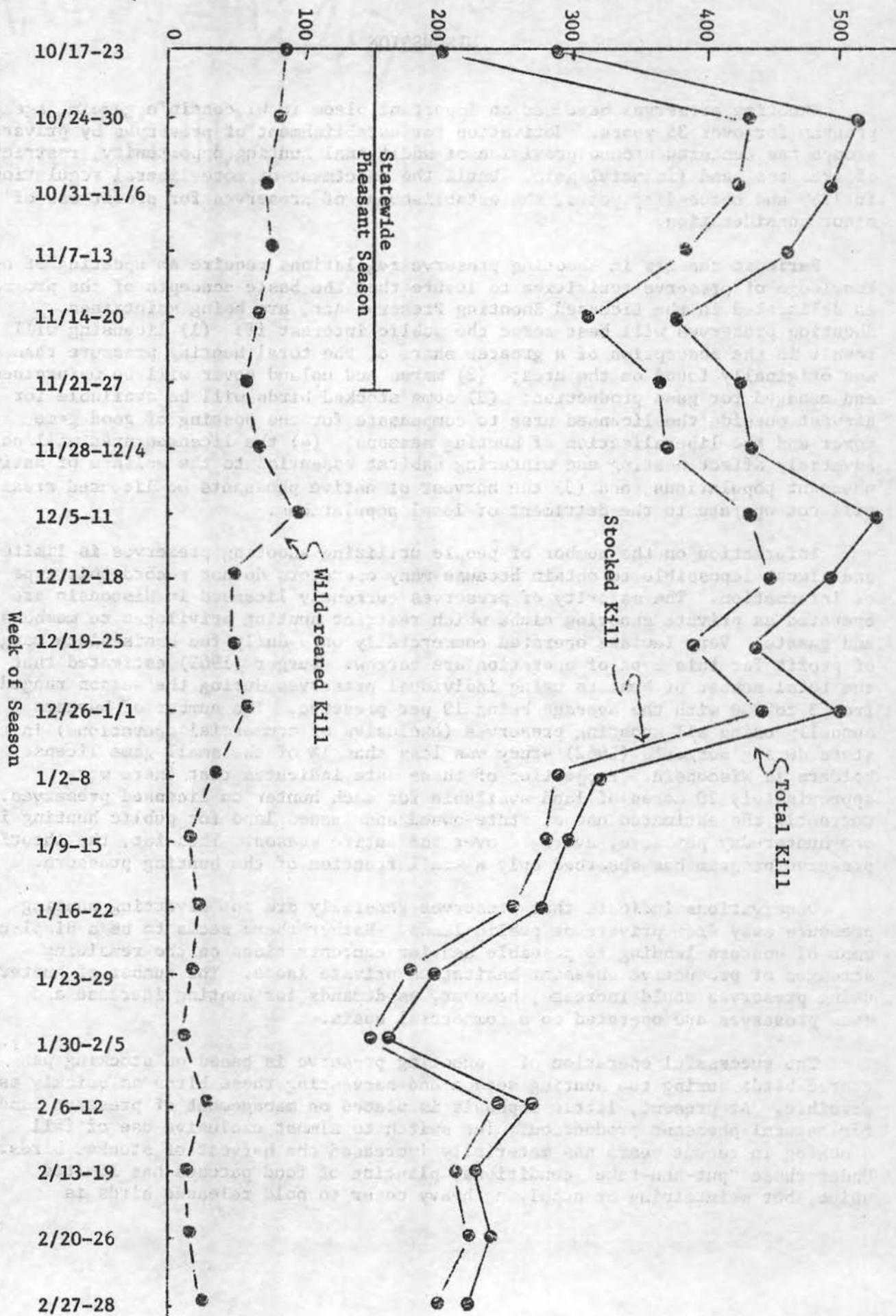
Figure 3 shows the largest harvest of stocked birds occurring between October 24, 1964 and January 1, 1965. After this latter date, the weekly kill decreased steadily although a slight increase in kill occurred in February. Part of this increase, while related to intensity of stocking, was influenced by a moderate snow cover in southeastern Wisconsin during February which provided excellent hunting conditions.

The weekly kill of wild-reared birds decreased steadily during the 135-day season with the exception of the week of December 5-11, when the largest number of birds for any one-week period was killed. This high kill correlated with the weekend of December 5-6, when the largest number of preserves was open to hunting and presumably reflected heavy hunting pressure.

TABLE 8  
Pheasant Harvest on 43 Preserves, 1964-65

Month	Stocked Birds			Wild-reared Birds			Total			Percent of Season Harvest
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total	
October	532	308	840	132	73	205	664	381	1,045	13.6
Percent of Total	50.9	29.5	80.4	12.6	7.0	19.6	63.5	36.6		
November	1,145	633	1,778	147	151	298	1,292	784	2,076	27.0
Percent of Total	55.2	30.5	85.6	7.1	7.3	14.4	62.2	37.8		
December	1,246	638	1,884	132	156	288	1,378	794	2,172	28.3
Percent of Total	57.4	29.4	86.7	6.1	7.2	13.3	63.4	36.6		
January	931	348	1,279	47	62	109	978	410	1,388	18.1
Percent of Total	67.1	25.1	92.1	3.4	4.5	7.9	70.5	29.5		
February	653	260	913	26	58	84	679	318	997	13.0
Percent of Total	<u>65.6</u>	<u>26.1</u>	<u>91.6</u>	<u>2.6</u>	<u>5.8</u>	<u>8.4</u>	<u>68.1</u>	<u>31.9</u>		
Total	4,507	2,187	6,694	484	500	984	4,991	2,687	7,678	100.0
Percent of Total	58.7	28.5	87.2	6.3	6.5	12.8	65.0	35.0		
Oct. 17-Nov. 22	1,205	688	1,893	223	173	396	1,428	861	2,289	29.8
Percent of Total	52.6	30.1	82.7	9.7	7.6	17.3	62.4	37.6		

Figure 3. Shooting preserve hunting data, 1964-65.



## DISCUSSION

Shooting preserves have had an important place in Wisconsin's game management program for over 35 years. Motivation for establishment of preserves by private groups has centered around provision of additional hunting opportunity, restriction of trespass, and financial gain. Until the enactment of more liberal regulations in 1959 and succeeding years, the establishment of preserves for profit was of minor consideration.

Periodic changes in shooting preserve regulations require an updating of our knowledge of preserve activities to insure that the basic concepts of the program, as delineated in the Licensed Shooting Preserve Act, are being maintained. Shooting preserves will best serve the public interest if: (1) licensing will result in the absorption of a greater share of the total hunting pressure than was originally found on the area; (2) marsh and upland cover will be maintained and managed for game production; (3) some stocked birds will be available for harvest outside the licensed area to compensate for the posting of good game cover and the liberalization of hunting seasons; (4) the licensed area will not adversely affect nesting and wintering habitat essential to the welfare of native pheasant populations; and (5) the harvest of native pheasants on licensed areas will not operate to the detriment of local populations.

Information on the number of people utilizing shooting preserves is limited and almost impossible to obtain because many operators do not record this type of information. The majority of preserves currently licensed in Wisconsin are operated as private shooting clubs which restrict hunting privileges to members and guests. Very few are operated commercially on a daily fee basis since margins of profit for this type of operation are narrow. Burger (1962) estimated that the total number of hunters using individual preserves during the season ranged from 3 to 300 with the average being 19 per preserve. The number of hunters annually using all shooting preserves (exclusive of commercial operations) in the state during Burger's (1962) study was less than 1% of the small game license holders in Wisconsin. Projection of these data indicates that there were approximately 20 acres of land available for each hunter on licensed preserves. Currently the estimated use of state-owned and leased land for public hunting is one hunter-day per acre, averaged over the entire season. Thus far, the shooting preserve program has absorbed only a small fraction of the hunting pressure.

Observations indicate that preserves generally are not diverting hunting pressure away from private or public lands. Rather there seems to be a displacement of hunters leading to possible heavier concentrations on the remaining acreages of productive pheasant habitat on private lands. The number of hunters using preserves could increase, however, as demands for hunting increase and more preserves are operated on a commercial basis.

The successful operation of a shooting preserve is based on stocking pen-reared birds during the hunting season and harvesting these birds as quickly as possible. At present, little emphasis is placed on management of preserve lands for natural pheasant production. The switch to almost exclusive use of fall stocking in recent years has materially increased the harvest of stocked birds. Under these "put-and-take" conditions, planting of food patches has limited value, but maintaining or supplying heavy cover to hold released birds is

essential. Most types of marsh cover are well suited for this purpose; hence each preserve applicant seeks to license as much good quality wetland as possible. While few preserve operators specifically manage marshes for pheasant production, preservation of existing marsh cover is probably the greatest benefit accruing to the public interest from the shooting preserve program in Wisconsin.

There is, however, a major problem connected with licensing marshes under the shooting preserve program. Native pheasant populations in Wisconsin depend upon large acreages of glacial marshes for nesting and winter cover (Gates, 1961; Wagner, Besadny and Kabat, 1965). Currently 10 to 30% of the total land area in the primary southeastern Wisconsin pheasant range contains marsh cover.

In most years, over half of the pheasant hatch comes from grass and sedge marshes (Gates, 1961). These marshes furnish attractive, secure nesting cover and are needed to maintain high enough nesting success for wild populations to maintain themselves. They help offset high nest mortality occurring in other types of cover.

Brush and cattail marshes also supply important winter cover. Pheasants are attracted to these areas in late fall and move several miles from upland habitat to protective marsh cover, especially during severe winters. Movement to winter cover is usually completed by mid-January in most years, and birds will remain in heavy marsh cover until late March and sometimes longer (Gates, pers. comm.). If key marsh areas in prime pheasant range are licensed as shooting preserves where birds can be harvested until February 28 each year, a heavy kill of native pheasants is possible. The ease with which pheasants can be hunted on snow, especially with the aid of good dogs, is well known.

Approximately 13% of the kill on shooting preserves sampled during the 1964-65 season contained wild-reared birds, about equally divided between cock and hen pheasants. The majority of hens were shot late in the hunting season. Our calculations suggest a kill of two hens per 100 licensed acres or approximately 12 hens per square mile of pheasant range. This kill represents one-third to one-half the number of spring breeding hens found on a square-mile basis in much of southeastern Wisconsin. Thus, the indicated level of kill suggests a heavy harvest of wild-reared hens on licensed shooting preserves. This kill not only limits production of wild birds on preserves, but reduces the number of breeding hens in the areas surrounding the licensed areas.

Evidence from the Fond du Lac County pheasant nesting studies (Gates, pers. comm.) indicates that native pheasant populations have been locally reduced where key marsh areas were licensed under the shooting preserve program. The reduction of native birds was related to the licensing of major nesting and winter cover areas and to the total amount of hunting pressure occurring on these areas during the season.

Generally, birds released on shooting preserves provide little additional hunting opportunity for the public. Some preserves are not hunted early in the season and thus act as temporary refuges for wild-reared birds. With short-term survival of stocked birds (Kabat, Kozlik, Thompson and Wagner, 1955; Besadny and Wagner, 1963), preserve releases contribute little to breeding populations and virtually nothing to huntable populations the following fall. Burger (1962) also indicated that birds escaping from licensed preserves make only a limited contribution to outside hunting under present conditions. The increasing tendency for preserves to open late in the year, and to stock pheasants after the statewide season is well under way or even closed, provides even fewer birds for off-preserve harvest by local sportsmen.

## CONCLUSIONS AND RECOMMENDATIONS

The licensed shooting preserve program is an accepted game management function and fulfills a certain need. In Wisconsin, licensed preserves generally operate as controlled shooting areas for private groups. They preserve some marsh habitat, accommodate a portion of the state's small game hunters, provide additional sport, and on a limited scale encourage private game management. However, under present regulations shooting preserves in some areas have operated to the detriment of native pheasant populations.

Some adjustments are necessary in the program to comply with the intent of the shooting preserve act. The following recommendations are made:

(1) Develop a Shooting Preserve Policy.

A shooting preserve policy should be developed stating the official position of the Department which would allow regulated growth of the program according to planned objectives. This policy should be implemented by a set of guidelines which game managers could use in reviewing preserve applications. Research data are available that can contribute to the improved operation of the licensed shooting preserve program.

(2) Establish Preserve Management Zones.

The state should be divided into two preserve management zones (Fig. 4). Certain adjustments should be made in program regulations and in criteria for establishing preserves within each zone to fulfill the needs of both pheasants and hunters. New operational considerations should center around: (a) length of the hen shooting season, and (b) type and amount of nesting and winter cover (in the form of wetlands) to be included on the preserve.

Zoning would essentially follow the distribution pattern of native pheasant population densities delineated by Wagner, Besadny and Kabat (1965). Preserve applications would be reviewed on the basis of the availability and distribution of wetland cover necessary to support native pheasant populations. Consideration would also be given to the needs of preserve operators and the hunting public.

Generally, preserves outside the "Very Good" and "Good" pheasant density areas (Wagner, Besadny and Kabat, 1965) would be included in Zone I. They would operate under regulations substantially the same as are now in effect statewide. Preserves in Zone I should not be required to restrict present operations because the impact on native populations is minor.

Certain restrictions would be placed on existing and proposed preserves in Zone II which includes "Very Good" and "Good" pheasant density areas. Hen shooting in Zone II should be limited to the period from the beginning of the general pheasant season to the end of December each year. Cock shooting would be continued through the end of February. The restriction of hen shooting would permit the necessary carryover of native breeding stock attracted to these preserves during the winter months.



Figure 4. Proposed zones for selecting and regulating licensed shooting preserves in Wisconsin.

Preserve applications from Zone II would be carefully screened to determine the amount of nesting and winter cover (wetlands) to be licensed. If the wetland acreage constituted the majority of available pheasant habitat in the immediate area, the license would be rejected. If abundant nesting and winter cover was available adjacent to or within a reasonable distance of the preserve, the application would be accepted.

Strategic wetland areas within Zone II should be purchased under the state's scattered wetland acquisition program or zoned for open space and wildlife use under comprehensive county recreational planning programs. Public ownership or control of strategic wetland areas would insure protection of the basic wildlife resource and provide a better distribution of game produced.

(3) Promote Habitat Management Programs.

Under present methods of operation, most shooting preserves do not attempt to manage licensed areas for wild game production. The general approach is to utilize pen-reared birds. Previous attempts to encourage preserve operators to manage habitat by offering special incentives failed. However, with new techniques available for managing habitat and a variety of agencies able to provide technical assistance or cost-sharing for habitat management practices (Soil Conservation Service, University of Wisconsin Extension, Agricultural Stabilization and Conservation Service, and Wisconsin Conservation Department), preserve operators should again be encouraged to participate in private game management programs. Several preserve operators now are carrying out habitat management practices on their preserves, and for the small investment the dividends are high.

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THE WISCONSIN LICENSED SHOOTING PRESERVE LAW  
Section 29.573 of the Wisconsin Statutes

(1) The conservation commission is hereby authorized to issue licenses for shooting preserves and the releasing, shooting, possession and use of pheasants thereon when in the judgment of the commission operations under such licenses will result in a net increase in the supply of pheasants in the state, and will otherwise be in the public interest. A fee of five dollars shall be collected for each such license when the area for which the license is granted shall be three hundred twenty acres or less, and the fee shall be ten dollars when the area is in excess of three hundred twenty acres. All such licenses shall expire on June thirtieth of each year.

(2) No license shall be granted unless the applicant owns or has under lease the area for which the license is granted. Boundaries of the area licensed shall be defined and posted as prescribed by the conservation commission.

(3) The conservation commission shall determine the minimum number of pheasants to be released for shooting purposes on the licensed premises and fix the time limits during which said birds may be hunted.

(4)(a) Until the release of said pheasants shall have been certified to and accepted by the commission it shall be unlawful to shoot, attempt to shoot or to otherwise take pheasants on premises licensed under this section, but when said release shall have been certified and accepted by the commission, and when such persons are otherwise lawfully entitled to hunt small game, the licensee and such other persons as he may designate may hunt on the licensed premises, have in possession, and dispose of such pheasants by gifts.

(b) A full record covering each item of pheasant shot on the licensed premises shall be kept by the licensee or his designated agent and a copy of this record under oath shall be filed with the conservation commission not later than June thirtieth of each year, and no such license shall be renewed until such record for the preceding year shall have been filed with and accepted by the commission.

(c) No pheasants of the species licensed shall be removed from the said licensed premises until there shall have been securely attached to each bird a metallic seal, the type and design of which shall be designated by the commission, and such seal shall remain attached to said birds until they are finally prepared for consumption. Such seal shall be supplied by the commission at a cost of five cents each.

(5) Only dead birds which have been killed by shooting shall be removed from premises licensed under this section, and it shall be unlawful to sell or attempt to sell or to buy or attempt to buy any such birds.

(6)(a) The conservation commission is authorized to make such rules and regulations as shall be necessary to carry out the intents and purposes of this section.

(b) Any person violating any of the above provisions shall be guilty of a misdemeanor and on conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than three hundred dollars for each offense or by imprisonment in the county jail for a period not exceeding thirty days, or by both such fine and imprisonment in the discretion of the court.

(7) Any person other than the licensee, his agents or persons having permission from the licensee who are otherwise qualified under Ch. 29 to hunt thereon, who hunts or shoots pheasants upon any lands described in any such license, is liable for all damage which he may do to said preserve or the pheasants and property thereon, but all actions for such trespass shall be brought by such licensee.

Wisconsin Administrative Code - Section WCD 19.07

SHOOTING PRESERVES

- (1) Land Ownership or Leases. Any person making application to the commission for a shooting preserve license must file with the commission a verified copy of any lease of lands contained in the area for which they are making application for a shooting preserve license after the area has been inspected and found eligible for license. In the event the person making application for a shooting preserve license is owner of the land, he shall file with the commission a sworn affidavit stating that he is the owner of such lands and has legal title to them.
- (2) The Open Season. The season for taking pheasants on shooting preserves shall begin concurrent with the general pheasant season in the county or portion thereof in which the preserve is located, and shall end on the last day of February. Shooting hours shall be as provided in section WCD 10.06.
- (3) Hunting License Requirements. No person shall hunt, take, capture, or kill pheasants, or any other game or wild animals, on any licensed shooting preserve areas authorized under section 29.573, Wis. Stat., unless he has in his possession at the time of doing such hunting, shooting, or killing of game or wild animals, a hunting license as required under provisions of sections 29.10, 29.11, 29.12, and 29.147, Wis. Stat.
- (4) Availability of Rules. Shooting preserve licensees shall have available for the review of each person hunting, taking, catching, or killing pheasants on the licensed shooting preserve areas a copy of the rules of the commission regulating such shooting preserve.
- (5) Size and Location of Areas. No shooting preserve license shall be issued after the effective date of this section (December 1, 1959), other than for those already in operation, for any land area larger than 640 acres or smaller than 120 acres, or for any area less than one-quarter mile from the exterior boundaries of a planned or approved state or federal wildlife area, public hunting ground or refuge which is managed in whole or in part for pheasants. All lands under one license shall be contiguous.
- (6) Investigation Before Licensing. The conservation department shall make such investigation necessary to determine that all provisions of section 29.573, Wis. Stat., and this section are complied with. All licenses are subject to the approval of the conservation director.
- (7) Posting and Fencing Requirements:
  - (a) All shooting preserve signs posted around licensed shooting preserve areas shall be purchased from the conservation department.

(b) Boundaries of the area licensed shall be posted in either of the following manners at the discretion of the licensee:

1. Signs shall be placed at intervals of not more than 400' along the boundary lines of such area, and in addition, such boundary lines shall be clearly defined by at least one strand of wire, or
2. Wherever such boundary lines are not defined by one or more strands of wire, the posting of signs shall be at intervals of not more than 200' along the boundary lines of such areas.

(8) Stocking Procedure, Tagging and Credits

- (a) All licensed shooting preserves shall be required to make a yearly minimum stocking of pheasants in the ratio of not less than one pheasant for each four acres of the area licensed, except that the minimum stocking requirement for any shooting preserve in excess of 640 acres licensed prior to the effective date of this section (December 1, 1959), shall be 160 pheasants. Failure to comply with the minimum stocking requirements during each licensed year shall automatically prohibit the renewal of the license, and also prohibit the licensing of any of the lands involved in any new license for a period of one year. Shooting preserves licensed prior to the effective date of this section (December 1, 1959), shall be subject to the minimum stocking requirement beginning July 1, 1960.
- (b) All pheasants liberated shall be of high quality stock and not less than 12 weeks of age. Upon written certification by the conservation department representative, listing the number and varieties of pheasants stocked, or placed in holding pens (see (e) below) and the date of such stocking or holding, shooting preserve wing tags shall be furnished by the conservation department at a cost of five cents each to the licensee at a ratio of 75% of the total birds certified. All shooting preserve tags and tag credits shall expire on March 1.
- (c) No person shall have in his possession or under his control any dead pheasant or pheasants of any species or varieties showing indications that they have been shot, unless the proper shooting preserve tag or seal has been immediately attached and locked through a slit in one wing of each pheasant. Such seals shall be supplied by the conservation commission at a cost of five cents each. This regulation will apply both during the general open season for pheasants and during the special pheasant season prescribed in this section for licensed shooting preserves.
- (d) Whenever a shooting preserve licensee indicates to the commission that he desires to stock pheasants on a shooting preserve area, the commission shall furnish an authorized representative of the commission who shall count and certify to all pheasants liberated. Such representative shall thereafter notify the conservation department in writing of the number and varieties stocked and the day and date when such stocking occurred, except as provided in subsection (e).

- (e) Each pheasant liberated shall have affixed to it a game farm seal or shall be leg banded on the left leg prior to liberation. Any shooting preserve shall be authorized to retain and stock pheasants from an approved holding pen provided such birds have been counted and banded on the left leg and certified to by a conservation department representative. Leg bands will be provided by the commission at cost. The licensee agrees to stock all pheasants so retained.
- (f) A daily record shall be kept by the licensee of all pheasant stocking and harvesting, including stocking or removal from holding pens. Such daily records and inspection of the licensed area, holding pen, and pheasants, shall be open to representatives of the commission at any time. Reports shall be filed with the commission on forms and on dates as specified by the commission.
- (9) Duly authorized representatives of the commission in connection with preliminary inspections of areas which are licensed, and in conjunction with releases and holding of pheasants in pens, shall be reimbursed by the licensee for the actual mileage incurred in travel both to and from his station at the rate of ten cents per mile.

