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FARMERS' REACTIONS TOWARD UPLAND BIRD HUNTING
IN TWO UTAH COUNTIES, 1957

by

Frank J. Calkins

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Wildlife Management

Approved:

Major Professor

Head of ~~Department~~

~~Dean of~~ Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

1963

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Finally, without the generous assistance of the Utah State Department of Fish and Game, particularly that of Mr. C. M. Greenhalgh, and the continuing encouragement and perceptive advice of Dr. Allen W. Stokes and Dr. William F. Sigler, Utah State University, this thesis would never have been completed.

Frank J. Calkins

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INTRODUCTION

Proof that public hunting on private lands is a growing Utah problem is, perhaps, most easily found by driving down any country lane. "No Trespassing" signs come one to a fence post or so it must seem to the pheasant hunter. His quarry is the most popular of Utah's farm game species and, unfortunately, the most popular subject of farmer-sportsmen disputes.

Reasoning that short seasons reduce hunter nuisances and property damage, landowners have long advocated three- to five-day pheasant seasons. And because of this and a former game department concern about overshooting the birds (Utah Fish and Game Commission, 1946) Utah has had traditionally short pheasant hunting seasons.

When biologists found it practically impossible to overshoot pheasants with rooster-only hunts (Allen, 1947, 1956) Utah's game technicians and some sportsmen began advocating longer hunts. The longer seasons, they felt, would increase the harvest of cocks and the public's recreational opportunity. Farmers have not been receptive to increased public recreation on their farms and have resisted pheasant hunts that are longer than, if as long as, the standard three days. Some landowner groups have even rejected the three-day sea-

sons and set their own, shorter seasons.

Other upland game birds (partridges, quail and mourning doves) frequent private lands, and while they are not as popular with hunters as pheasants are, they figure in hunting-season problems. This has been particularly true of mourning doves. Attempts were made during the 1957 session of the Utah State Legislature to prohibit mourning dove hunting (Stokes, 1957). Advocates of this legislation felt that dove seasons led to property damage and nuisance and also encouraged pheasant poaching.

The concern with these, as well as other problems stemming from upland bird hunting on private lands, revealed a need for more detailed information about these problems. Therefore, a survey of farmers was initiated which had these specific objectives:

1. Determine the amount of upland bird habitat open to public hunting.
2. Learn the reasons why landowners close their property to public hunting.
3. Establish the number of landowners suffering from hunter-caused nuisance and damage and the cost of such damage.
4. Find what, if any, method of hunter control held property damage and nuisance to farmers at an acceptable minimum.

A review of the literature on farmer-sportsman relations reveals that few states have tried to study their problems carefully before attempting to solve them. The review also disclosed that much of what

has been done is so specialized or based upon such limited information that it cannot honestly be compared to problems in other states or even to other areas in the same state. At the outset, I should mention that certain aspects of this criticism will apply to attempts to use this survey as a blanket generalization for the entire State.

METHODS

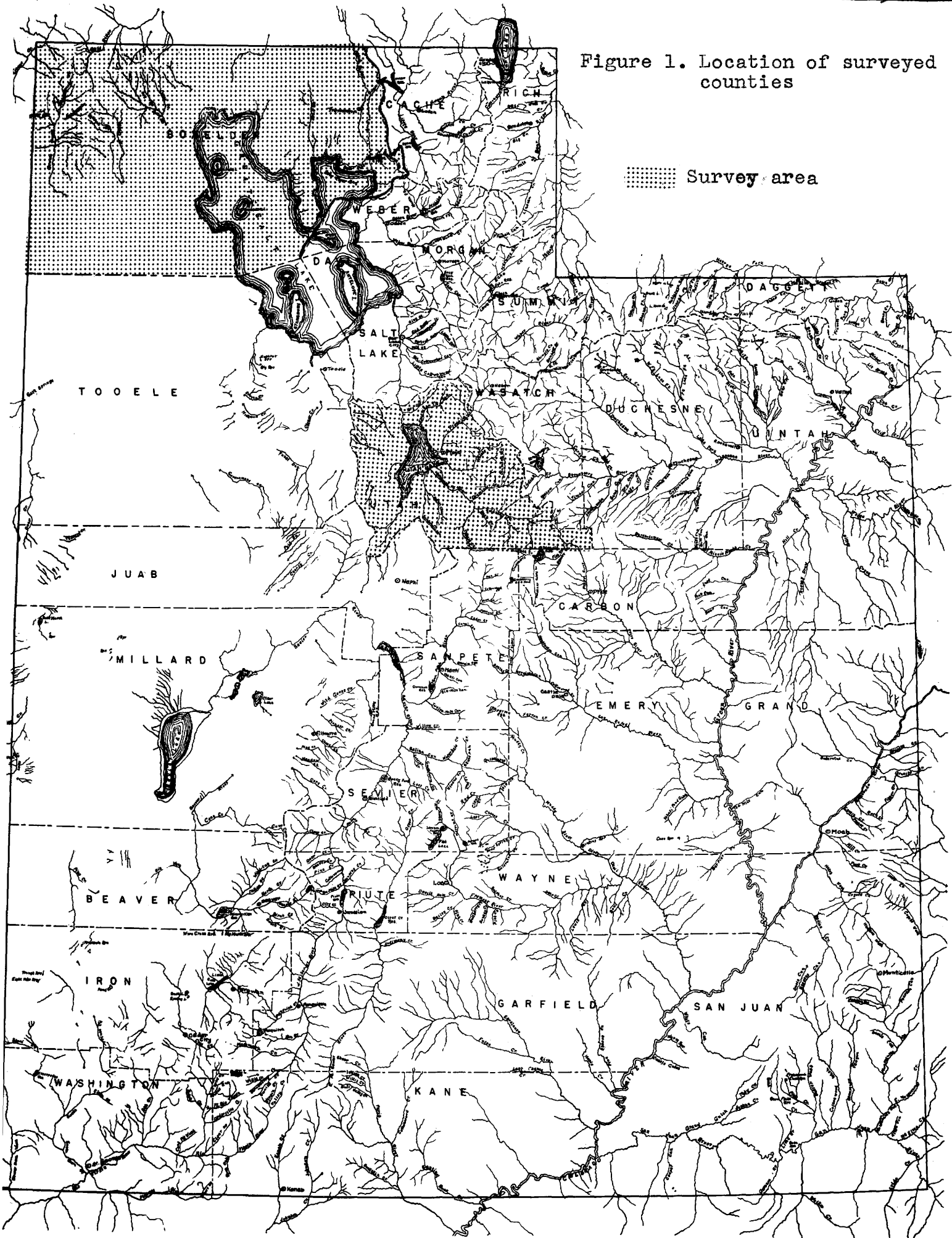
Utah and Box Elder Counties, Utah, were selected for survey because they bear about one-third of the State's total pheasant-hunting pressure (Greenhalgh, 1956). These two counties also yield approximately one-third of the State's pheasant harvest and have long been areas of farmer-sportsmen friction.

Sampling Procedure

The personal interview method of survey was selected on the advice of Utah State University statisticians because nearly every person selected for an interview can be contacted, and accuracy is higher because material is obtained at the source and can be verified by the interviewer. Furthermore, an interviewer can make any necessary explanations, thus avoiding misinterpretation of questions and he can record cogent comments that were not requested (Arkin and Colton, 1957).

In 1957, Utah County had approximately 3,000 farm operators; Box Elder County had 1,600, a total of 4,600 farm operators (U. S. Agricultural Stabilization and Conservation Service records, 1957). A sample of 250 Utah and 150 Box Elder County farm operators was necessary to provide reliability at the 95 per cent confidence level.

Figure 1. Location of surveyed counties



County offices of the Agricultural Stabilization and Conservation Service maintain lists of all farmers in that county. These lists normally contain the names of persons who farm three or more acres. Farmers who earn a major portion of their income from smaller tracts are also listed.

The 400 respondents and 25 alternates were selected at random from the appropriate A. S. C. rolls. The interviews were begun early in January, 1958 and completed in mid-March, 1958.

Development and Use of the Questionnaire

A questionnaire was designed with the assistance of the University's Statistical Laboratory and educational psychologists. This questionnaire is reproduced in the Appendix.

To test the questionnaire, 50 trial interviews were made during late 1957 in Salt Lake and Davis Counties, Utah. These tests indicated necessary revisions to the questionnaire and were invaluable in developing interviewing technique.

The questionnaire (Appendix) proved quite satisfactory in developing the necessary information. To put respondents at ease quickly, the first questions asked for facts and the subsequent questions asked for opinions.

When possible, respondents were not given advance notification of their interview because of the possibility that they might prepare and thereby bias the interview. Each question was read, in order, to

the respondent. To minimize second guessing and inattention to the question at hand, the questionnaire was not shown to the farmer if it could be politely avoided.

Farmers showed little impatience with the length of the questionnaire, even though some of them were asked as many as 38 questions if they made affirmative answers to certain questions.

The completed questionnaires were coded and transferred to punch cards for machine tabulation.

Miscellaneous survey data

Sections of many of the tables and figures, as well as information in the text, have been extracted from survey totals. These breakdowns are below the statistical confidence level of the total survey and should be regarded as trends or indications.

An assistant completed 130, of the 402, interviews in central Utah County. Five questionnaires from Utah County were discarded because the respondent was no longer farming or because his land was closed to hunting by local ordinance.

Survey costs, including wages, travel and punch-card analysis were slightly in excess of \$1,600.

Western Box Elder County is sparsely populated range land and there is a relatively small demand for its scattered populations of upland game. For this reason, no interviews were scheduled with farmers who resided west of Snowville, Utah. However, several respondents did control land west of Snowville, hence a segment of this area is represented in

survey results. This segment, 25,000 to 30,000 acres, probably does not figure heavily in the farm-game aspect of my project but the public use of it is surprisingly high, particularly by rabbit hunters, and its owners exhibited the same proprietary interest and regulated access in much the same way as other land was regulated.

RESULTS

Characteristics of the Landowners and their Farms

The composition of the respondents' families was most often reported as two adults; families with children most often reported having two. Over one-fourth of the farmers did not live on their farms.

Farms in Box Elder County ranged in size from 2 to 50,000 acres. The most commonly reported (the mode) farm size there was 88 acres. Utah County farms were considerably smaller, .5 acre to 7,500 acres in size. Farmers in Utah County most often reported their farms to be about 16 acres. Combining the counties resulted in a most common farm size of 63 acres.

The most important farm crop was grain, closely followed by hay (usually alfalfa). Hay-grain combinations, livestock and fruit trees were next in the order of importance.

These crops were enclosed by 256 miles of fence and farmers most often reported that .75 mile of it was along public roads.

It seemed important to determine whether bird-hunting farmers had different attitudes than did nonhunting farmers; the survey indicated that about half the farmers were hunters, and half were not.

Game birds present on surveyed farms

Table 1 shows the reported occurrence of various upland game bird species on respondents' farms. It does not reflect abundance. If a respondent saw one individual of the species listed during the year preceding the interview it was recorded as present on his property. Many farmers could not distinguish between the Hungarian and chukar partridges even though they were shown a photograph of these two species during the interview. Finally, some farmers are not especially interested in wildlife and may easily overlook game birds which actually do occur on their property. One farmer stated flatly that there were no mourning doves on his land while a dove perched on a wire above his head.

Table 1. Number of farmers reporting game birds present on their farms in Box Elder and Utah Counties, Utah, 1957

Species	<u>Box Elder County</u>		<u>Utah County</u>		<u>Total farmers</u>	
	Number	Per cent	Number	Per cent	Number	Per cent
Pheasant	145	97	233	94	378	95
Mourning dove	127	85	175	71	302	76
California quail	23	15	106	43	129	32
Hungarian partridge	34	23	5	2	39	10
Chukar partridge	25	17	8	3	33	8
Sage grouse ^a	4	3	0	0	4	1

^a Sage grouse were voluntarily reported. No specific question was asked about them.

Status of Public Hunting on Survey Area

The respondents controlled a total of about 250,000 acres, which included poor to excellent game-bird habitat. Because habitat ratings vary with species requirements, substantial tracts of poor pheasant, but fair to excellent chukar and Hungarian partridge and mourning-dove habitat have been included in survey totals.

The portion of surveyed land closed to all public hunting was slightly more than 11,000 acres or about four (1-7)¹ per cent of the total (Table 2). The closed lands were generally representative of the entire area insofar as desirability to the various upland species was concerned.

There are four basic ways in which Utah farmlands may be administered during the hunting seasons: 1) Land may be unposted, open to anyone at any time. 2) It may be posted with a "hunting by permission" condition. 3) By law, private lands may be posted and a trespass fee assessed a limited number of hunters by landowners (generally called "Posted Hunting Units"). Also, 4) land may be posted against trespass, thereby prohibiting public hunting. This survey classed lands posted by private hunting clubs or by farmers for their personal sport as being closed to public hunting.

The proportion of land placed under these four classifications is

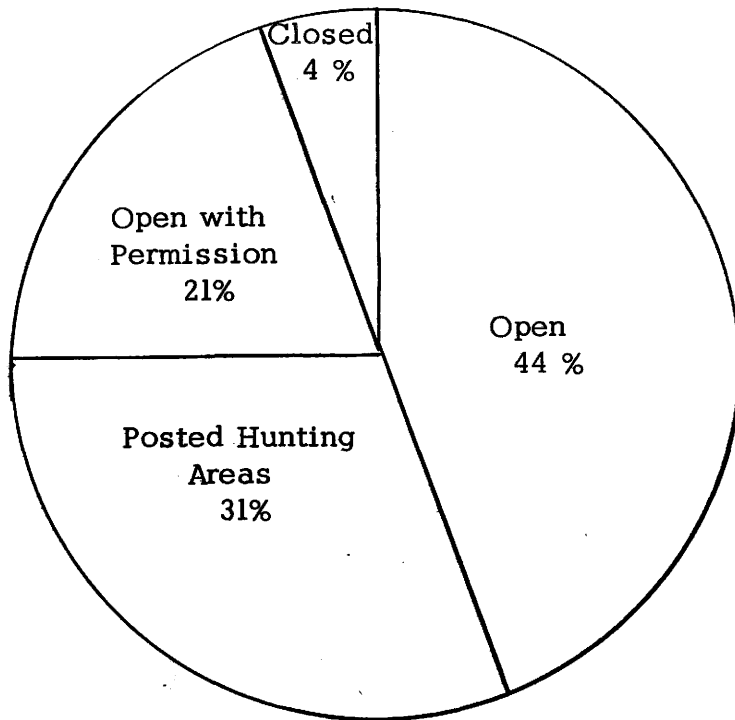
¹These and subsequent figures in parentheses indicate the 95 per cent confidence limits of the statistic.

shown in Figure 2 and Table 2. There is a close comparison between the percentage of land area and percentage of farms under each of the four classifications.

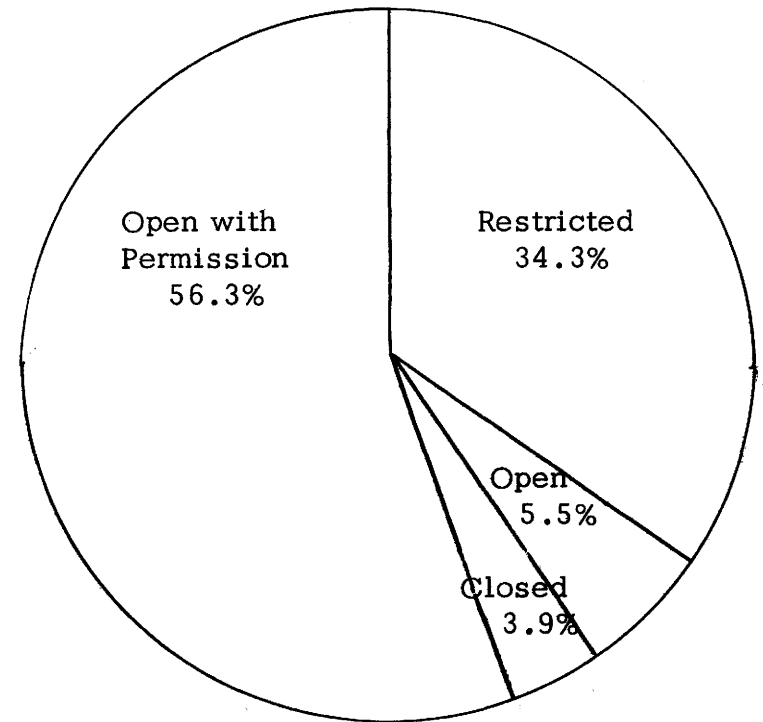
Eight farmers closed their property or had some fractional portion of it in Posted Hunting Areas. Only the restricted acreage is included in the total closed or Posted Area lands, but each farmer is counted in the category which made up the largest portion of his land.

Figure 3 shows land open to public hunting in Ohio (Whitesell, 1952). Comparing this graph with one compiled for this study may give some immediate, but perhaps short-lived, satisfaction to Utah hunters. For instance, in Massachusetts, Larson (1959) found 41 per cent of the state posted. A more recent Utah survey by Berryman (1961) showed that 23 per cent of replying landowners did not allow pheasant hunting in 1961. Zorb (1959) found that in 1958 and 1959, 45 and 51 per cent of interviewed Michigan farmers prohibited public pheasant hunting on the first two days of the open season. But, he also found that 39 to 44 per cent of the "closed" farmers would allow public hunting sometime after the first two days of the season. Another Michigan survey (Barrett, 1960) showed that, over the years, a deer hunter could hunt a progressively smaller segment of wildlands unless he was associated with a club. The National trend seems to be toward increasing closure of private lands to public hunting.

In addition to lands closed by farmers, State law (Fish and Game Laws of Utah, Revised for 1959-1960, Sec. 23-5-3) closes additional



Hunting status of 250,000 acres
in Utah and Box Elder Counties



Hunting status of Ohio
in 1952

"Restricted" in Ohio survey meant area was restricted to friends, relatives, clubs or groups. Under Utah survey definitions, this area would be designated as "Closed".

Figure 2. A comparison between available public hunting acreage in Ohio (Whitesell, 1952) and Utah survey area, 1957

Table 2. Status of public hunting on survey area, 1957

A. Number of acres open or closed to hunting

Status	<u>Box Elder County</u>		<u>Utah County</u>		<u>Total area</u>	
	Acres	Per cent	Acres	Per cent	Acres	Per cent
Closed	7,326	4	4,029	9	11,355	4
Open	<u>201,000</u>	96	<u>45,983</u>	91	<u>246,983</u>	96
Total	208,326		50,012		258,338	

B. Number of farms in each category of hunting

Status	Number of farms	Per cent of farms	Per cent of total acreage
Open to hunting without restriction	197	50	44
Posted Hunting Area	101	25	31
Hunting with permission only	64	16	21
Closed to all public hunting	<u>35</u>	<u>9</u>	<u>4</u>
Total	397	100	100

areas. This law makes it illegal for "any person to hunt or shoot within 600 feet of any dwelling house, barn, poultry yard, corral, feeding pen, stockyard, or any enclosure where domestic animals are kept or fed..." without the express permission of the person in charge.

This regulation is not closely adhered to by most Utah hunters. Also, few farmers seemed to be aware of it. In fact, the prohibition against hunting within 600 feet of enclosures where domestic stock is kept could be construed to close most of Utah's pheasant and quail habitat to hunting.

Causes for Closure of Land to Public Hunting

One objective of the survey was to learn why landholders close their property to public hunting (Table 3). Over half of the farmers who banned public hunting did so to protect their property. Past difficulties with hunters led another 15 per cent of the posting landholders to close their property.

Private hunting areas, not to be confused with the State-sanctioned Posted Hunting Areas, were operated by about 10 per cent of those posting. All but one of these "clubs" were farm lands where a trespass fee was charged under the guise of club membership. They were not clubs in the accepted sense of the word. Hunters often criticize exclusive hunting areas, but in this case the private areas constituted only 15 per cent or 1,738 acres of the total closed land.

Protection of pheasants was the fourth most popular reason for posting.

The remainder of the posting farmers did so: to create their personal hunting areas, to show their contempt for the Utah State Department of Fish and Game, or simply because they did not want anyone on their land.

Table 3. Reasons why farmers closed land to public hunting, 1957

Reason	Farmers closing land	
	Number	Per cent
Protection of home, stock, crops or other property	18	52
Past hunter damages and/or nuisances	5	14
Private hunting clubs	4	11
Protection of pheasants	2	5
Other or not stated	<u>6</u>	<u>17</u>
Total	35	100

Hunting-Season Damage

In all, 69 respondents, 17 per cent (12-24), suffered damage during the 1957 hunting seasons (Table 4). The bulk of the damage occurred during the pheasant season. A few farmers reported more than one incidence of hunter damage. Zorb (1959) found an almost identical amount of hunter damage in 1958 and 1959 to Michigan farms. Stokes (1957), in a mailed survey of farmers in Cache County, Utah, reported damage occurring to 45 per cent of his respondents.

Farmers' estimates of the cost of hunter-caused damage ranged from about \$2.50 to \$213. Cost of damage was most often reported as the minimum (\$2.50). Occurrence of major damage was slight but sufficient to raise the average damage cost to a somewhat misleading \$18.28. Stokes (1957) found the average damage cost in the hunting season to be \$15. per Cache County respondent. Seven farmers reported repair or replacement costs in excess of \$43.

The average cost of damage when expanded to include all farmers in both counties suggests that upland bird hunters may have caused damages in excess of \$14,000, indicating a State total of \$42,000. A survey of the expenditures of Utah sportsmen indicated that in 1955 they spent over \$3,000,000 on Utah upland game bird hunting (Cowan, Harline, 1957). The same survey showed that Utahns paid \$126,000 in trespass fees to reach hunting and fishing areas. It can be surmised that some of this amount was paid to hunt upland game, and that at

least some portion of farm losses was replaced. However, interviewed farmers were not asked whether they received trespass fees which amortized any damage they may have sustained.

Reports of damage were nearly 2.5 times higher in Utah County than they were in Box Elder County. Cost of damage in Utah County averaged less than in Box Elder, however.

The occurrence of hunting-season damage was reported more often (1.5 times) by hunting farmers than by nonhunting farmers. The former group also said that damage occurred more often over the years. This may indicate that, because hunting farmers were in the field more than nonhunting farmers, they actually did observe more hunting-season damage.

Table 5 shows farms in the various posting classifications, the per cent reporting damage and the average cost of hunting-season damage. The two highest damage rates were from areas where public hunting was under some restriction. Unrestricted and closed areas showed nearly identical, lower rates of damage. Some of this disparity may be attributed to what the individual respondent considered to be damage. For instance, some farmers thought disturbance of fences was damage, others felt that it was only a nuisance.

Table 4. Types of hunter damage to farm property in survey area, 1957

Items damaged	Times reported	Per cent of all damage
Fences	47	58
Crops	8	11
Livestock	7	9
Other ^a	<u>16</u>	<u>22</u>
Total	78	100

^a Theft, damage from careless or malicious shooting, rutting of fields, etc.

Table 5. Relation of damage to land status in survey area in 1957

Status of land	Number of farms	Per cent farms receiving damage	Average cost per damaged farmer	Total cost
Posted Hunting Area	101	21	\$20.48	\$430.00
Hunting with permission only	64	25	27.09	433.50
No restriction	197	14	12.40	355.00
Closed to public hunting	<u>35</u>	14	9.00	<u>45.00</u>
Totals and means	397	17	\$18.28	\$1243.50

How frequently hunter damage occurs to a farmer's property is important in determining farmer attitudes as well as the success of the various posting methods. Most farmers who suffered damage during 1957 said that it was a yearly occurrence (Table 6).

The category "Rarely" (Table 6) means that the farmer could recall at least once instance of hunter damage during his farming career.

It should be interesting to farmers, as well as sportsmen, that over 65 per cent of the respondents had rarely or never experienced any hunting-season damage.

Table 6. Frequency of hunting-season damage as reported by farmers in survey area, 1957

Area	Damage frequency in per cent				
	Yearly	Almost every year	Every 3 to 4 years	Rarely	Never
Posted Hunting Area	5	2	2	10	7
Hunting with permission	4	2	0.5	5	3
No restriction	7	4	2	19	18
Closed	<u>2</u>	<u>2</u>	<u>0.2</u>	<u>3</u>	<u>2</u>
Total per cent	18	10	5	37	30

Nuisances

Nuisances were recorded in two ways (Questionnaire, Item 14). Farmers were first asked what nuisances hunters caused; these were recorded. They were then asked if they had been bothered by any of the eight listed nuisances. These responses were called "Suggested Nuisances" (Figure 3). The voluntarily mentioned nuisances are also shown in Figure 3 and Table 7.

Stokes (1957) and Berryman (1961) both showed higher rates of hunter nuisance. One explanation of this may be that a printed questionnaire or question asked about a particular problem presupposes that there is a problem, thereby coaching the respondent. However, because the above two surveys were made soon after the close of the hunting season while mine did not begin until seven weeks after the seasons had closed, farmers may simply have forgotten things that irritated them. It has often been demonstrated that human beings tend to forget, and that demonstration and repetition are important to the learning process (Noel, 1952).

But in this case, I was attempting to find complaints which the passage of time did not erase. It hardly seems reasonable to expect that a farmer will post his property for reasons which he had forgotten ten months before. Atwood (1956), Barnes (1950) and Cospers (1951) all reported poor response to mailed hunting-season questionnaires. In addition, Atwood (1956) and Titus (1953) reported that respondents who

did cooperate tended to make gross exaggerations. All in all, I feel that the later a nuisance-damage survey is made, the better it is-- at least in determining the posting prospects for the coming season.

Nearly one-third of all the farmers voluntarily said that they were bothered by at least one hunter-caused nuisance. Suggested nuisances were acknowledged by almost half of the respondents. These nuisance reports were not necessarily confined to the 1957 hunting seasons. In some cases, such as hunting out of season, the nuisances could not occur during the season.

As with damage, Utah County farmers voluntarily reported more nuisances than did Box Elder farmers. An interesting variation in the rate at which two kinds of nuisances occurred was reported; hunting out of season was an irritant to 42 per cent of Utah County farmers while only 20 per cent of the Box Elder respondents mentioned it. Shooting from roads also drew considerably more criticism in Utah than in Box Elder County.

One complaint made frequently by opponents of longer hunting seasons was that livestock must be rounded up and confined, especially during the pheasant season. This seemed to be an exaggerated objection as less than 3 per cent of the farmers mentioned it.

Many of the farmers considered disarranged fences as a nuisance rather than as damage. Therefore, in the sections on hunter nuisance fences have been described as being weakened rather than being damaged. This was the leading nuisance reported by farmers.

Whitesell (1952) considered disturbance of fences as damage only. Still, it was the leading form of Ohio farm damage, as it was in Utah. Berryman (1961) also found fence disarrangement to be the major damage in his more recent Utah survey as did Stokes (1957).

Whitesell shows that nearly 45 per cent of Ohio farmers reported one or more hunter nuisances. This is very close to the percentage (45) of Utah farmers who responded to a list of suggested nuisances and also close to Berryman's 47 per cent rate. Nuisances, such as shooting too close to buildings, leaving gates open, road shooting, and hunting out of season appeared to be as bothersome in Ohio as they were in Utah.

Table 7 shows the average number of nuisances per complaining farmer in each hunting-area type. It shows that even though land is posted, those posting report a high incidence of hunter nuisance. It may also indicate a greater critical awareness of hunters by posting farmers.

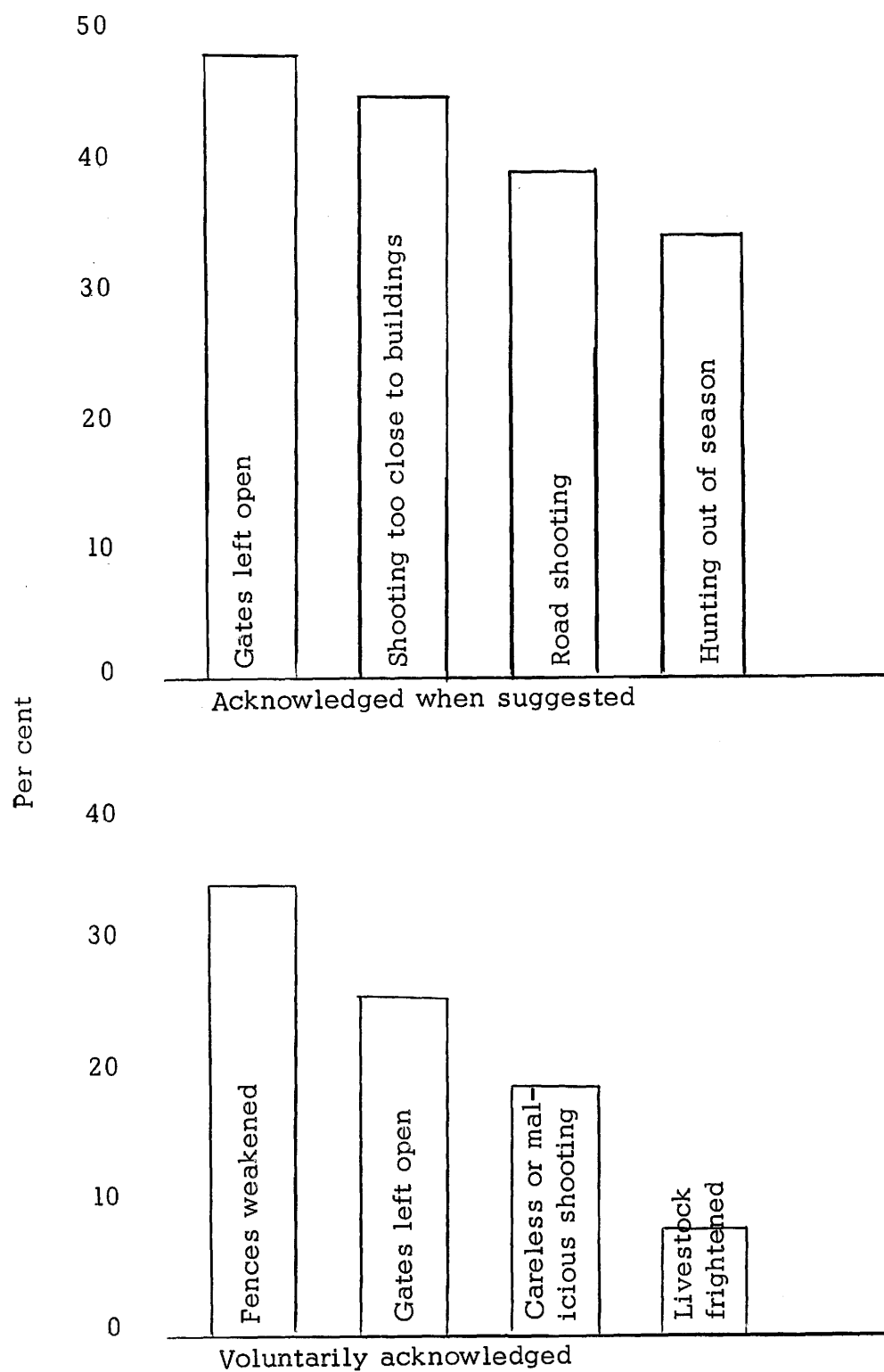


Figure 3. Farmers' acknowledgment of hunter nuisances, Box Elder and Utah Counties, 1957

Table 7. Major hunting season nuisances voluntarily reported by surveyed farmers, 1957

Nuisance	Per cent occurrence				Total
	Posted hunting area	Hunting by permission	No re-strictions	Closed	
Fences weakened	<u>35</u>	16	<u>36</u>	<u>29</u>	32
Gates left open	31	<u>22</u>	30	14	28
Livestock frightened	23	9	9	17	9
Dogs running loose ^a	21				—
Careless or malicious shooting	16	20	21	17	19
Juvenile hunters ^b		11	11		—
Shooting too close to buildings				26	—
Hunting out of season				14	—
All others ^c	10	6	11	7	9
Average total nuisances per farmer	1.8	1.3	1.7	1.4	

Note: The most commonly reported nuisance in each area is underlined.

^a These are dogs that roam throughout the year. They are listed because hunting dogs are usually numbered in the pack. These dogs probably belong to hunters and are listed as hunter-caused nuisances.

^b Juvenile hunters were reported to have been responsible for many of the other nuisances.

^c "All others" includes 11 other forms of nuisance too minor to have been included in compilation.

Season Lengths

Pheasant

In 1957, the Utah pheasant season lasted three days; three days was also the most popular season recommendation made by farmers (Figure 4). Recommendations for season lengths were recorded as follows: If a farmer's response was "three or four days" the lower number was used. If he said, "five to seven days" six days were recorded. If eight or more days were requested, they were combined as Figure 4 indicates.

Most of the season recommendations for 30 or more days were actually requests for pheasant extermination.

In the years following the survey, for which information is available, Posted Hunting Area officers, Trinagle Committees, Representatives of the Farm Bureau and Farmer's Union and Utah State Fish and Game Department employees have all tended to recommend seasons no longer than ten days. The bulk of these recommendations show Utah County representatives desiring two-or three-day seasons and Box Elder representatives usually suggesting five days. These follow a State pattern of short-season recommendations. The biggest differences have come from Cache and Uintah Counties which have advocated ten- and seven-day hunts (Utah State Department of Fish and Game, 1960-1961).

Hungarian, chukar partridge and quail

These species receive relatively less hunting pressure than do pheas-

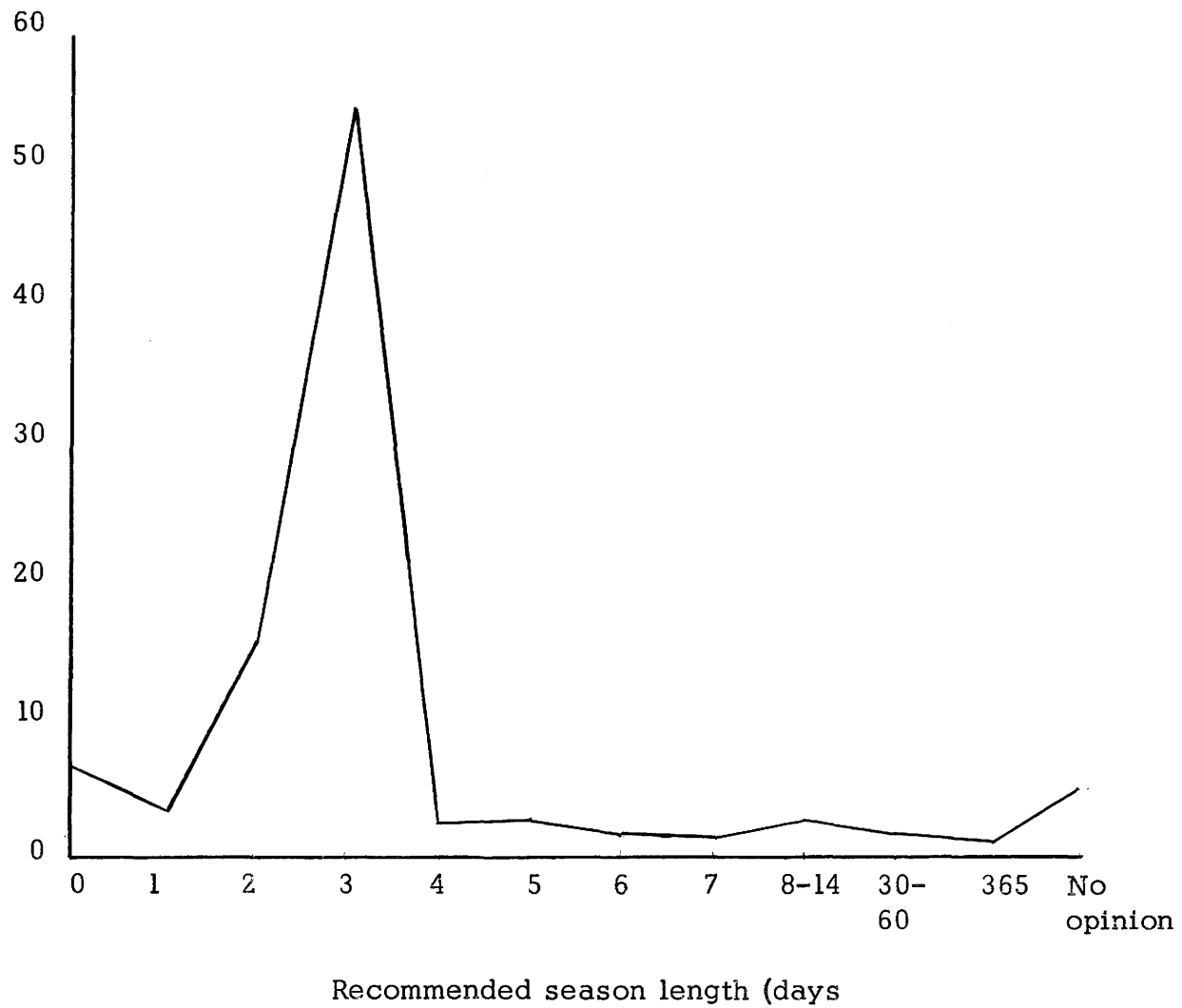


Figure 4. Surveyed farmers' recommendations for pheasant season lengths in Utah and Box Elder Counties, 1957

sants in Utah (Greenhalgh, 1958). Hungarian partridge and quail are frequently taken incidentally by pheasant hunters. Chukars do not generally inhabit the same cover types as pheasants and, therefore, are hunted more specifically. There was no open season on quail in Box Elder County and none on Hungarian partridge in Utah County during 1957. Farmers were not asked for season recommendations on birds which were not legally huntable in their county.

The phrasing of question 18 regarding partridge and quail seasons may have been unfortunate. People generally resist change and considering the limited interest in these birds, many respondents, even though they were not very familiar with the seasons, were satisfied with them.

Farmers were asked if these seasons were long enough. Nearly half (47 per cent) said they were. These are similar to the "no change" opinions gathered by Reynolds (1956) on 5- and 15-day pheasant hunts in adjoining counties of Utah and Idaho. The other half of the farmers (50 per cent) had no opinion about quail or partridge. Only about 3 per cent of the respondents said the seasons were not long enough.

Mourning doves

Mourning dove seasons are relatively new in Utah and there have been vociferous objections to mourning-dove shooting (Stokes, 1957). The common objections were that dove hunters poach pheasants or, that doves were too small to eat and were killed only for sport. Some opponents said that dove hunters cruised the roads shooting at doves that

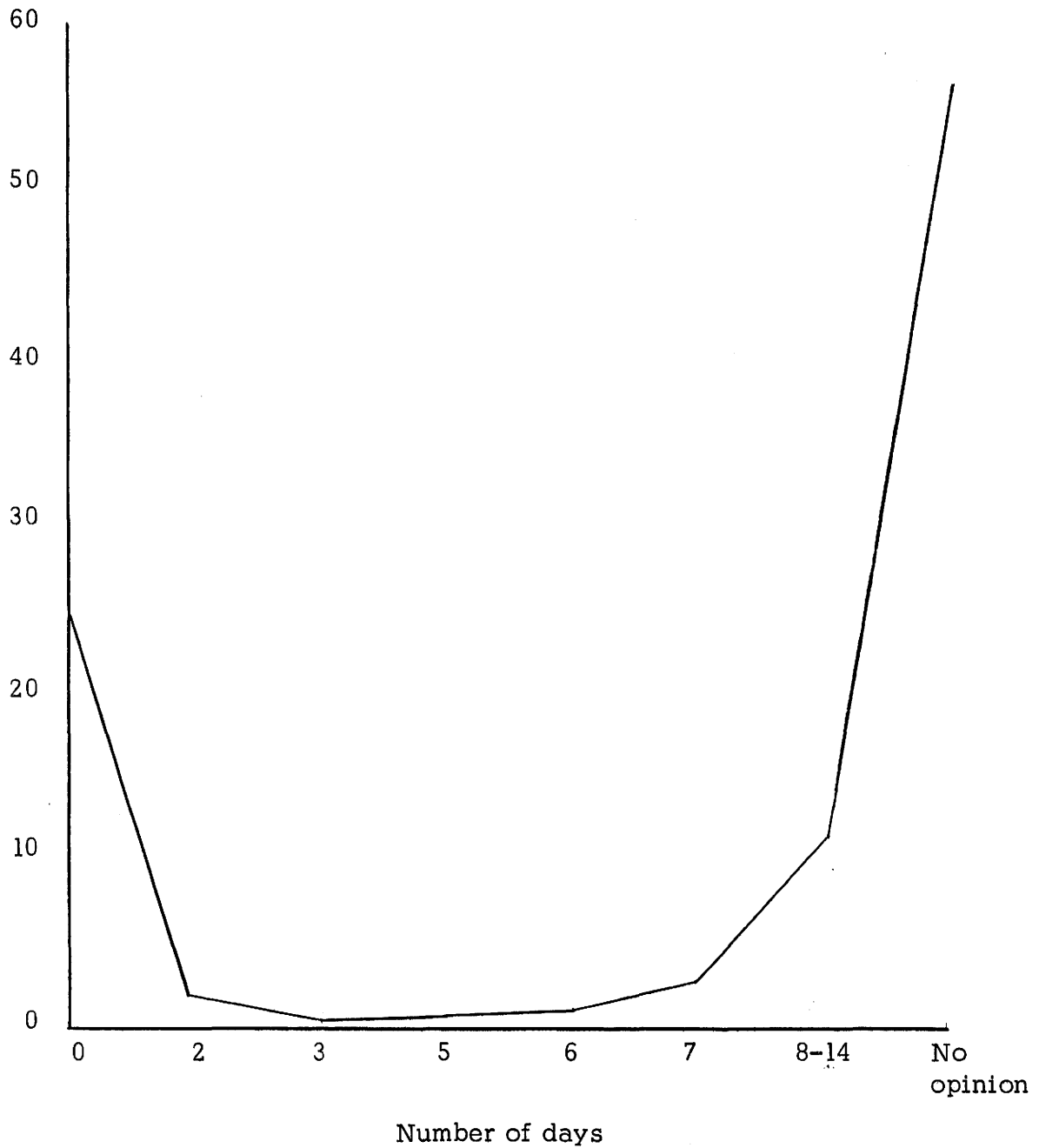


Figure 5. Surveyed farmers' recommendations for mourning dove season lengths in Box Elder and Utah Counties, 1957

were perched on power lines or fences with little regard to where their shots went. The survey showed that a substantial minority opposed mourning-dove shooting, but that the majority had no opinion.

Danger of Overshooting Pheasants

Some Utah landholders have based, or bolstered, their objections to longer pheasant seasons on the purported inability of the birds to absorb additional pressure. Table 8 shows that nearly two-thirds of the farmers didn't believe that there was any danger of overshooting. However, as most respondents favored short-hunting seasons, their opinions might change if longer seasons were proclaimed. It is interesting to note that 50 per cent of farmer-hunters thought that pheasants were in danger while only 13 per cent of the nonhunters agreed.

Post-season counts of pheasants, by the Utah State Department of Fish and Game (1959), in 1957 indicated a slightly higher ratio of hens per cock in Box Elder than in Utah County. This might be expected because of the heavier hunting pressure in Utah County. However, neither count, about 5 hens/cock, suggests an excessive harvest of cocks.

Pheasant hunter numbers

Over half (55 per cent) of the farmers who reported pheasants on their property felt that there were too many pheasant hunters. Because this is largely an opinion based on relative, rather than actual hunter numbers, more exact figures are given in the Discussion. Still, it indicates farmer dissatisfaction with pheasant hunters. This dissatisfaction becomes more pronounced if only those having a "yes" or "no" opinion are considered. Only about a third of the farmers stated that there were not too many pheasant hunters and many of these had property in Posted Hunting Areas.

Table 8. Farmers' opinions of the possibility of overshooting pheasants in study area, 1957

<u>"Do you think local pheasants are in danger of being killed out by hunters?"</u>			
	Yes (Per cent)	No (Per cent)	No opinion (Per cent)
Box Elder County farmers	19	73	8
Utah County farmers	40	54	6
Total	34	61	5
Farmer-hunters	50	48	2
Nonhunting farmers	13	75	12

Agricultural Damage by Pheasants

While no specific questions involved pheasant damage to crops, all voluntary complaints of such damage were recorded. Thirty-one farmers, less than 8 per cent, complained of pheasant damage. Berryman (1961) reported that 43 per cent of his respondents experienced such damage. I feel that much of this disparity can be explained with the reasons I have given for the disparity in nuisances reports.

While it has no statistical validity I feel it appropriate to mention a later experience with pheasant-damage claims in Uintah County. As a State warden I found that most damage was vastly overrated by farmers, (either honestly or because the State paid up to \$200. for such damage) and that by exerting a reasonable amount of effort I could curtail, if not eliminate, most of these claims.

Surveyed farmers generally reported pheasant damage as occurring in tomatoes, young corn or grain.

Law Enforcement

Trespass laws

Utah's trespass laws have been criticized by farm groups, individual farmers and officers because they are difficult to enforce, convictions are rare and penalties light. Some landholders said they were afraid to file trespass complaints for fear of retaliation by those they accused.

Utah Fish and Game Laws, Revised for Years 1961-62, Sec. 23-10-12 state, "Any person entering upon privately owned lands of any other person, firm or corporation which is properly posted, for the purpose of hunting, camping or trapping without permission from the owner or person in charge is guilty of a misdemeanor."

The same Section defines "properly posted" as, "when 'no trespassing' signs shall be displayed not fewer than one-fourth mile apart along the exterior boundaries and along all roads, trails and rights of way entering such land".

Most respondents were completely ignorant of the wording of the law, but the majority felt it was "strong enough".

Farmers were highly critical of the enforcement of trespass laws (Figure 6). The policy of the Utah State Department of Fish and Game is to assist farmers who have trespass problems, but it urges these farmers to take legal action against the trespassers, themselves. Many farmers will not do this.

The two viewpoints toward trespass-law enforcement both have validity. Trespassing is a misdemeanor in Utah. An officer cannot legally make a misdemeanor arrest solely on hearsay evidence. Also, because some farmers post their property against trespass but actually allow public hunting with permission, an officer cannot easily know if trespass is occurring or not. From the farmers' side comes the fear of retaliation if they prosecute, and the real problem of making a citizen's arrest of armed men. One Utah County farmer reported that a hunter threatened his son with a shotgun when the boy asked the hunter to leave the property.

Game laws

About half of the farmers felt game laws were well enforced. Less than a third said they were not, and the rest had no opinion.

Many farmers seemed to base their answers to the question concerning game law enforcement on their over-all opinion of the Utah State Department of Fish and Game, others on whether or not they had been recently checked by a conservation officer. In specific areas, particularly the southern portion of Utah County, there was a great deal of criticism of the Utah State Department of Fish and Game and numerous reports of law violation. A few farmers complained that when they contacted authorities about game-law violators, no action was ever taken.

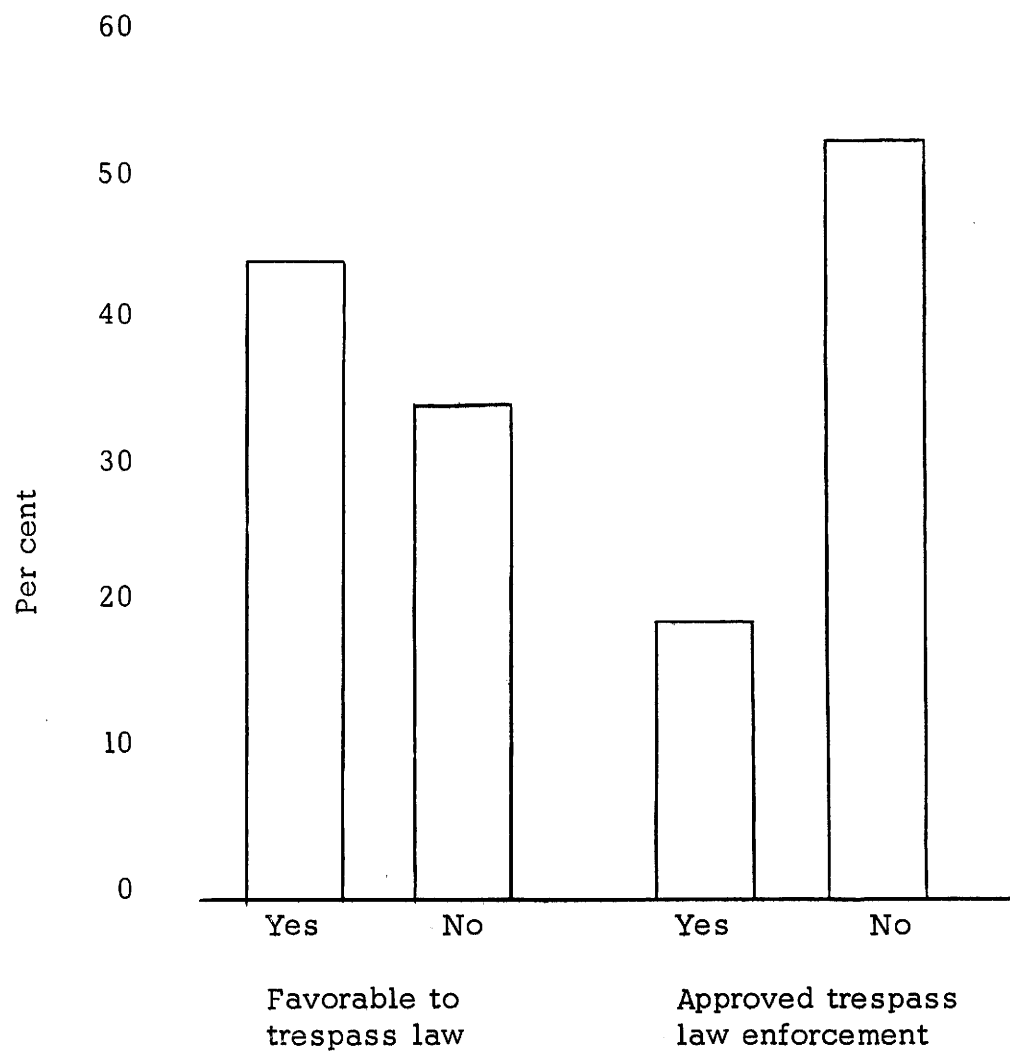


Figure 6. Surveyed farmers' opinions of Utah trespass law and its enforcement, Utah and Box Elder Counties, 1957

Posted Hunting Areas

By law, (Fish and Game Laws of Utah, 1961-62; Sec. 23-5-3) Utah landholders are permitted to post contiguous tracts of 1,000 acres or more in order to regulate hunting pressure. These Posted Areas, commonly called units, normally function only during the pheasant season although the law indicates year-round operation. Season permits are sold by the respective Areas for a legal maximum of \$1. each. The number of permits and method of sale is regulated mainly by the landholders. The number of permits ranges from about 150 to 5,000 per Area. Greenhalgh (1957) reported about 40,000 permits available throughout Utah. About three-fourths of these permits were sold in 1956. Permit availability and sales appear to be fairly stable from year to year. In many cases, the areas are administered by church or civic groups and revenues commonly go to a community project. While this project was being initiated and during the interviews, I noted the objections of sportsmen's groups, individual sportsmen and farmers to Posted Hunting Areas.

Sportsmen's common objections were:

1. Funds collected are not spent to improve pheasant hunting.
2. Sale of permits is arbitrary and not favorable to hunters who do not live in or near the Area.
3. Not enough permits are available for sale.
4. Areas are haphazardly located, often necessitating the purchase

of several permits to hunt an area.

Farmers most commonly complained that:

1. A permit entitles its holder to roam the entire Area without ever asking any landowner's permission.
2. Areas are not well policed; the farmer does not get sufficient protection.
3. Farmers in some Areas have to buy permits to hunt their own land.
4. The farmer who owns land in an Area may not post his land and hunt on it privately.
5. Money collected for permits is misspent.
6. Some farms or portions of farms are included in Areas against the operator's wishes.
7. Areas limit hunting pressure but raise it unnaturally on adjacent unorganized areas.
8. Too many permits are sold.

Despite these complaints, one thing is significant: two researchers, Zorb (1950) and Parsons (1953), have both indicated that Posted Hunting Areas do permit hunting where it might otherwise be banned. Parsons (1953) also found that these areas were popular with hunters who used them. Table 9 shows farmers' opinions of hunting Areas.

Table 9. Farmers' opinions of Posted Hunting Areas , 1957

	Per cent		
	Favorable to ward Posted Hunting Areas	Unfavorable to- ward Posted Hunting Areas	No opinion
Farmers in Posted Hunting Area	61	26	13
Farmers not in Posted Hunting Area	36	28	36
Total farmers	42	27	31

DISCUSSION

Survey Design

While the survey design satisfactorily met the project's objectives, I feel that it was too costly and time consuming. Many farmers take outside jobs or vacations during the winter. As a result, only about three hours during weekday evenings and Saturday mornings were very productive of completed interviews. The task of finding a specific individual along dark, unmarked, rural roads was often extremely difficult. In similar surveys in Ohio and Tennessee, Whitesell (1952) and Shultz (1954) selected farms at random rather than the farmers, themselves. By using a system of alternate farms, Whitesell appears to have completed his survey without making many return calls. This appears to be a more practical way of conducting surveys of this kind.

Public Hunting

Methods of reducing damage

Obviously, none of the various methods of posting land stopped hunter damage or nuisance. The relatively few farmers who prohibited public hunting suffered almost as much damage as did farmers who placed no restrictions on access to their property. At the time of the sur-

vey the Utah State Department of Fish and Game was just initiating its "Hunting by Permission" program. Farmers who already operated under this system appeared somewhat more critical or apprehensive of hunting on their property than might be the case today. During 1957, many farmers used "No Trespassing" signs to post areas that were actually open by permission.

Because damage was relatively light it might be valid to conclude that all posting systems work--but that they all need to be improved. A cardboard sign fluttering on a fence post is not, in itself, a program. All participants, sportsmen, game officials and farmers, should be encouraged to take a more active interest in the problem of hunting on private land.

Cooperatively managed hunting areas, similar to Utah's, have reportedly enjoyed success in many states, including California, Wisconsin, Pennsylvania and Ohio. Michigan's "Williamston Plan" is the granddaddy of all the hunting co-op's, but Stuewer (1953) reported that, in four years, participation in that program dropped from 120 interested groups to 27. He concludes, too, that these plans are only as good as all participants want them to be.

Utah's Posted Hunting Area system is comparable to these others, and while not notably effective (Tables 5, 6 and 7), it is popular with farmers (Table 9). These Areas should probably be encouraged, especially near cities. This encouragement should be cooperative, aimed at

keeping the idea popular with farmers while discouraging the dictatorial cliques now operating in some Areas .

Damage and nuisance

Most farmers who suffered damage during 1957 said that it was a yearly occurrence . This may be a reflection of some farmers' supercritical attitude toward hunting or farm locations or methods of farm operation that were more vulnerable to hunting-season mishaps . Some respondents' farms certainly appeared more likely to experience damage , i.e. those located on heavily traveled highways , on corners of intersections and those with inviting hunting cover easily seen from well traveled roads . Farmers in these categories should be encouraged to regulate hunting , or close vulnerable areas , on their farms .

Nuisances are closely related to damages during hunting seasons . They were far more prevalent than damages and , while a few seemed petty , most were valid . If the Utah State Department of Fish and Game would seize upon the most common nuisances as the basis of an educational program , I feel the problem would be substantially improved .

Season lengths

While farmers overwhelmingly advocated short hunting seasons , especially for pheasants , they gave little thought to the huge concentrations of hunters these brief seasons cause . Utah's short hunting season may have made the cock pheasant too valuable a prize . Hunters are apt to show small consideration for the landholder , his property , or other hunters when they have only a few hours a year to hunt . But until far-

mers are convinced that long seasons can help to spread hunting pressure they will probably resist them.

Mourning doves provide recreation and food for a substantial number of hunters. Few interviewed farmers specifically wished to abolish this sport nor has the State Triangle (Landholder-Sportsman-Game Department) Committee (Utah State Department of Fish and Game, 1958). Some respondents thought the dove season should run concurrently with the pheasant season. Apparently they did not know that doves are migratory and virtually gone by November. However, dove hunting should be discouraged on irrigated croplands. Doves are not generally plentiful in these areas, and the September open season may cause unnecessary conflicts between hunters and still-busy farmers. Also, the aesthetic value of doves to rural residents appears to outweigh their recreational value.

Quail have never been a major attraction to most Utah bird hunters. Nevertheless, some farmers felt quail should have more protection; but most farmers seemed agreeable to continuing quail seasons concurrent with pheasant seasons.

Farmers' chief objection to chukar hunting was that game-farm birds were killed before they had an opportunity to become established. Apparently, because this objection was rare, the chukar-management program was satisfactory, or of little interest, to most farmers.

Danger of overshooting pheasants

Most farmers did not feel that pheasants were in any danger of over-

shooting, at least with 1957-length seasons. Farmers who hunted pheasants showed more concern with this possibility than did nonhunting farmers. The fact that some farmers recommended the eradication of pheasants might tie in with the apparent unconcern of nonhunting farmers about the status of pheasants. Certainly, pheasants now offer little return to the farmer who raises them.

Law enforcement

The purported ineffectiveness of the State's trespass law is largely the fault of the farmers themselves. This is because most of them will neither prosecute violators nor demand that magistrates deal severely with the few who are arrested. In 1959 a useful change was made in the trespass law establishing minimum fines for its violation; useful because a guide for punishment has been established although magistrates may still suspend any or all of an assessed fine.

A few localities reported frequent violation of game laws and juveniles were blamed for much of this law breaking. A substantial number of interviewed farmers felt that much of this lawlessness could be attributed to residents of the area rather than to visiting hunters. As suggested earlier, hunters should be made aware of the actions that are most likely to provoke farmers. Persons who cannot exercise reasonable hunting behavior must be eliminated from the sport. Preferably this elimination would come through an educational program but, that failing, Utah law provides for the revocation of violators' sporting licenses.

RECOMMENDATIONS

Most plans for bettering farmer-sportsmen relations are based upon the premise that public hunting is desirable. The recommendations I have made, and will make, are aimed at perpetuating public hunting. Public hunting, as I see it, is a universal privilege granted to those who are willing to pay reasonably for their sport and conform to regulations which are necessary to provide optimum recreation for an optimum number of people.

The immediate future may hold a European, game-belongs-to-the-raiser situation. Hunting rights may eventually be sold to the highest bidder, as described by Uhlig (1961). However, this hardly seems presently feasible on the preponderantly small Utah farms.

Currently, most public-hunting plans hope to 1) increase respect for the farmer and his property, 2) combine farm property into cooperatively managed hunting areas and, 3) allow farmers to realize a cash profit for producing game and allowing a public harvest of wildlife. An offshoot of this last aim is the increasing popular recommendation that commercial shooting preserves be established near large metropolitan areas.

Utah's game managers have worked and are now working in all of these areas. The State's success in keeping private land open to public

recreation is probably comparable to successes in other states. These successes have not been marked. The dearth of research in the field of farmer-sportsman relations may explain why so many projects have failed or enjoyed such limited success.

Specific recommendations

The results of the survey indicate a number of specific ways to improve farmer-sportsman relations.

1. Prohibit the carrying of loaded, assembled or uncased firearms in any motor vehicle. Road shooting is a common farmer complaint; also, having guns readily available encourages road hunters, who shoot first and never ask permission. In order to mollify those who bitterly resent anti-gun legislation this prohibition might be made effective only during the open season.

2. Prohibit persons under 18 years of age from hunting any animal or bird, except in the company of a parent or guardian. Juvenile hunters, in and out of season, are the cause of many farmer complaints.

3. Lengthen the pheasant season but shorten the hunting day. This would tend to remove the sense of immediacy from the pheasant season while permitting farmers to perform their morning and evening chores without hunter disturbance.

4. Open the pheasant season on weekdays. Weekend openings may be democratic, but they loose too many hunters on a relatively small area at one time.

5. Open major hunting seasons, i.e. deer, duck, pheasant, on the

same date. This should also reduce opening-day rushes. It may be objectionable at first but with the passage of time and the changes in working schedules it should become palatable.

Additional recommendations

The following recommendations require additional explanation, which has been included.

6. Reduce or spread the hunting pressure in areas of unusual hunter concentrations (i.e. Utah County).

Utah and Box Elder Counties showed substantial differences of farmer opinions. Utah County landholders seemed far more critical of public hunting than did those in Box Elder County.

This apparent difference may have at least two explanations. Utah County had about 87,000 acres of irrigated land in the mid-1959's (Census of Agriculture, 1956). The same source reports Box Elder County had about 70,000 irrigated acres. Most of this area can be assumed to be pheasant habitat. In 1957 over 17,000 persons hunted pheasants in Utah County while Box Elder attracted 9,400 pheasant hunters (Greenhalgh, 1958).

Table 2 indicates that about 9 per cent of Utah County is closed, leaving about 70,000 acres open to the bulk of the 17,000 hunters (24 hunters/100 acres). This amounts to a maximum of 4.5 acres per hunter. Only 4 per cent of Box Elder County was closed, allowing a maximum of eight acres per hunter (12 hunters/100 acres). Even by adjusting Box Elder's posted area upwards, to compensate for its non-pheasant

habitat, the hunter density could not have approached that in Utah County.

The second explanation may come from the fact that Utah County has some prominent and highly vocal opponents of many aspects of pheasant hunting. These individuals may easily have swayed opinions regarding pheasant hunting in the County. And, as Stokes (1961) showed, it takes only a few opposing farmers to stop public hunting.

Utah County farms are much smaller than those in Box Elder, the result, disregarding any disparity in hunting pressure between Posted Hunting Areas and open lands, indicates that too many hunters are concentrating in Utah County. Game administrators should take steps, some of which have been mentioned earlier, to reduce or spread hunting pressure in Utah County.

7. The Utah State Department of Fish and Game should increase its public relations effort with large landholders.

The trend toward bigger farms and fewer farmers contributes to hunting season difficulties. While surveyed farms were generally quite small, three men controlled 107,000 acres of the survey total. These large landholders can, and do, close vast areas to public recreation. The three men were all highly critical of the hunting public and closed or placed access restrictions on portions of their holdings. If they are representative of the type who are leading the trend toward farm consolidation it might behoove game administrators to pay more attention to their problems.

8. Small landowners, especially those near large centers of population, should be encouraged to establish Posted Hunting Areas.

Small landowners seemed more tolerant of public hunting than did larger landholders. None of the 74 smaller farmers completely banned hunting and only 17 put some kind of access restriction on their property. Only four of these farmers closed some fraction of their land, generally as a safety measure. The fluid army of hunters is especially hard to control on these small farms; properly operated Posted Hunting Areas seem the best solution.

9. Pay farmers for raising and allowing the public to harvest game on their lands.

Such a system might be similar to Wyoming's use of license fees to compensate ranchers on whose lands antelope are harvested. However, instead of paying for game I believe hunters should pay a reasonable fee for the privilege of access to private lands. The rate of payments to farmers would have to be stabilized by the State in order that the system be equitable to farmers and hunters alike.

10. Prohibit the sale of hunting rights by individuals.

This recommendation is intended to operate in concert with Recommendation 9 rather than in opposition to it. Presently, hunting rights cannot be sold in Alberta, Canada (Government of the Province of Alberta, 1962) and I feel such a measure would curtail a pay-to-hunt movement in Utah. If this is unacceptable I recommend levying a substantial tax on all private hunting clubs. Such a tax would eliminate "pick up" clubs while permitting bona fide clubs to operate. I further believe the above measures would help to reduce the trespass problem--

at least officers could concentrate their patrols on areas where posting was done to protect property rather than hunting rights .

11. That the Utah State Department of Fish and Game does not solicit hunting-season-length recommendations from farmers or farm groups .

The State Triangle Committee , as well as Posted Hunting Area officials are generally asked to recommend hunting-season lengths . The first group , composed of game department , sports , and farm interests , has an important public-relations function which it performs rather well . Still , farmers are not game biologists and as this survey has indicated , many of them do not understand game management . In fact , they may make recommendations for seasons which are not in the best interests of game or the public , who owns this resource . This does not mean that farmers should not be allowed to submit opinions on season lengths prior to their final establishment by game managers .

12. Repeal the law (Fish and Game Laws of Utah; Sec. 23-2-12 , 1961-62) which permits operators of Posted Hunting Areas to shorten Commission-set seasons .

This law appears to encourage management confusion , and worse , to place wildlife under private ownership .

Peroration

Farmers are not satisfied with the present system of public hunting . If Utah farmers join the National trend toward increased resistance to public hunting on private land , many citizens will lose a valuable re-

recreational outlet. The Utah State Department of Fish and Game must generate, now, an imaginative and intelligent program to forestall, if not prevent, the end of public, upland bird hunting in Utah.

SUMMARY

In order to learn the actual causes of Utah farmer-sportsmen disputes, the amount of land closed to hunting, and why it was closed, a personal-interview survey was conducted in Utah and Box Elder Counties in early 1958.

The survey results show that about one farmer in six suffered damage from hunters during 1957 and that cost was usually low (\$2.50). The property most commonly damaged was fencing. Farmers who reported damage tended to regard it as an annual occurrence but over 60 per cent of all the farmers said, that over the years, damage was rare or nonexistent.

Nearly one-third of all farmers reported at least one hunter-caused nuisance; weakened fences and gates left open were the nuisances most often reported.

None of the four possible ways to administer hunting on private lands was notably effective in controlling damage and nuisance. Still, the Posted Hunting Area was popular with farmers.

Farmers generally wished to maintain the status quo with regard to hunting-season lengths. There was some demand for a closed season on mourning doves, but most farmers had no opinion either way.

Game law enforcement was considered satisfactory by about half

the respondents; this seemed less a measure of wardens' effectiveness than an over-all opinion of the Utah State Department of Fish and Game. Farmers felt that trespass laws were strong enough but poorly enforced.

Fears that pheasants might be overshot were minimal, but farmers felt that there were too many pheasant hunters.

In the sections CONCLUSIONS and RECOMMENDATIONS, I have listed several methods for alleviating the problems involving public hunting on private land.

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APPENDIX

Farm Operator Questionnaire

No. _____ Name _____
 Address _____

1. Are there any pheasants on your property? Yes ___ No ___
 (Check birds occurring) 1. Pheasant ___ 2. Doves ___ 3. Huns ___
 4. Chukar ___ 5. Quail ___ 6. Other ___
2. Do you hunt any of these birds yourself? Yes ___ No ___
3. Do you allow the public to hunt on your land? Yes ___ No ___
4. Do you require hunters to ask permission to hunt? Yes ___ No ___
5. What is your most important crop? 1. Corn ___ 2. S. beets ___
 3. Cattle ___ 4. Hay ___ 5. Grain ___ 6. Fruit trees ___ 7. None ___
 8. Other _____
6. About how much land to you control? 1. 1/2-5 ___ 2. 6-10 ___
 3. 11-20 ___ 4. 21-35 ___ 5. 36-50 ___ 6. 51-75 ___ 7. 76-100 ___
 8. 101-150 ___ 9. 151-200 ___ 10. 201 & over (list amount) _____
7. How much of this is closed to all hunting? 1. 1/2-5 ___ 2. 6-10 ___
 3. 11-20 ___ 4. 21-35 ___ 5. 36-50 ___ 6. 51-75 ___ 7. 76-100 ___
 8. 101-150 ___ 9. 151-200 ___ 10. 201 & over(list amount) _____
8. What caused you to close this area? _____

9. Is your farm part of a posted pheasant hunting area? Yes ___ No ___
10. Do you think these pheasant hunting areas are good methods of controlling the hunt? Yes ___ No ___ Don't know ___
11. Did bird hunters do any damage to your property or equipment last season? Yes ___ No ___ Don't know ___

12. What damage was done? 1. Crop damage___ 2. Fence damage___
3. Livestock damage___ 4. Other_____
13. What was the cost of repair or replacement of this damage? 1. \$0-\$5
___ 2. \$6-\$10___ 3. \$11-\$20___ 4. \$21-\$35___ 5. \$36-\$50___
6. \$51-\$75 7. \$76-\$125___ 8. \$126-\$175___ 9. \$176-\$250___
10. \$251 and over \$_____ (list how much)
14. What are some of the things that bird hunters do that you feel are
nuisances? (Check items listed "x". Ask, "Were you bothered by
_____?" of all items not voluntarily listed by farmer. De-
note them with an "O") 1. Shooting too close to buildings___ 2.
Gates left open___ 3. Road shooting___ 4. Hunter's dogs___
5. Shooting hen pheasants___ 6. Fires___ 7. Dumping trash___ 8.
Hunting out of season___ 9. Other_____
15. During hunting seasons before 1957, how often did you experience
damage? 1. Every year___ 2. Almost every year___ 3. Every 3 to
4 years___ 4. Rarely___ 5. Never___
16. Do you think there are too many pheasant hunters in this area?
Yes___ No___ Don't know___
17. Do you think local pheasants are in danger of being killed out by
hunters? Yes___ No___ Don't know___
18. Do you think the seasons on huns, chukars and quail are long
enough? Yes___ No___ Don't know___ Remarks_____

19. Do you think Fish and Game laws regarding bird hunting are well
enforced? Yes___ No___ Don't know___
20. Do you think trespass laws designed to protect your property are
strong enough? Yes___ No___ Don't know___
21. Do you think these trespass laws are well enforced? Yes___ No___
Don't know___ Remarks_____

22. How long should the pheasant season be? _____ days
23. How long should the mourning-dove season be? _____ days
24. How many persons live in this house who are over 21 years of age___
children under 21_____
25. About how much of your fence runs along public roads? _____ distance