

MICHIGAN DEPARTMENT OF NATURAL RESOURCES Wildlife Division Report No. 3719 August 2023

2021 SMALL GAME HARVEST SURVEY

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ABSTRACT

A survey was completed to estimate the number of people hunting small game species, their days afield, and harvest during the 2021 hunting seasons. The survey also was used to investigate hunter satisfaction, to measure compliance with the Harvest Information Program (HIP), to estimate the number of people hunting on Grouse Enhanced Management Sites (GEMS), and to estimate how many hunters were aware and supported the public-land pheasant hunting license and pheasant release program. An estimated 224,284 people hunted small game species in 2021. Small game hunters most often sought squirrels, cottontail rabbits, and ruffed grouse. The number of hunters pursuing small game statewide was not significantly different for any of the small game species between 2020 and 2021. The proportion of small game hunters that were satisfied with their overall small game hunting experience was similar in 2020 and 2021. In 2021, 59% of woodcock hunters had registered with the HIP. An estimated 15,066 hunters spent 57,259 days afield hunting ruffed grouse and woodcock on GEMS. In 2021, 11,813 people purchased a public-land pheasant hunting license. About 19% of active small game hunters were aware of the new public-land pheasant hunting license. Nearly 4% of the active small game hunters were more likely to hunt pheasants because of the new hunting license; however, 23% of the active hunters were less likely to hunt peasants because of the new license. About 3% of active small game hunters pursued pheasants on a wildlife management area where farm-raised pheasants had been released. About 24% of active small game hunters were aware that farm-raised pheasants had been released on selected wildlife areas in 2021, and 13% of the active small game hunters indicated that they were more likely to hunt pheasants because of the pheasant release



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For information or assistance on this publication, contact Michigan Department of Natural Resources, Wildlife Division, P.O. Box 30444, Lansing MI 48909. This publication is available in alternative formats upon request. program. Overall, 71% of active small game hunters were supportive of the pheasant release program.

INTRODUCTION

The Natural Resources Commission and the Michigan Department of Natural Resources (DNR) have the authority and responsibility to protect and manage the wildlife resources of the state of Michigan. This responsibility is shared with the U.S. Fish and Wildlife Service (USFWS) for the management of migratory species such as woodcock (*Scolopax minor*), ducks (Anatinae), and geese (*Branta* and *Anser* spp.). Harvest surveys are one of the management tools used by the DNR to accomplish its statutory responsibility. Estimates derived from harvest surveys, as well as breeding bird counts, are used to monitor game populations and help establish harvest regulations.

Since the 1950s, the primary small game species harvested in Michigan have been ring-necked pheasant (*Phasianus colchicus*), ruffed grouse (*Bonasa umbellus*), American woodcock, cottontail rabbit (*Sylvilagus floridanus*), snowshoe hare (*Lepus americanus*), squirrels (*Sciurus* spp. and *Tamiasciurus hudsonicus*), American crow (*Corvus brachyrhynchos*) and coyote (*Canis latrans*) (Frawley 2023). Most of these animals could be harvested during fall and early winter (Table 1) by a person possessing a base hunting license. Woodcock hunters also were required to register with the National Migratory Bird Harvest Information Program (HIP) and obtain a free woodcock stamp.

The HIP is a cooperative effort between state wildlife agencies and the USFWS. It was implemented to improve knowledge about the harvest of migratory game birds. Beginning in 1995, any person who hunted migratory game birds in Michigan was required to register with HIP and answer several questions about their hunting experience during the previous year. The HIP provided the USFWS with a national registry of migratory bird hunters from which they can select participants for harvest surveys.

A new public-land pheasant hunting license was created in 2021. The new license was required for anyone 18 and older who hunted pheasants on any public land in the Lower Peninsula or on lands enrolled in the Hunting Access Program (HAP). The HAP leased private lands in Michigan to provide access for hunting (Oliver 2005). The new public-land pheasant hunting license was initiated to provide funding to release farm-reared pheasants released on selected wildlife management areas.

Estimating harvest, hunter numbers, and hunting effort were the primary objectives of the small game harvest survey. This survey also provided an opportunity to collect information about management issues. Questions were added to the questionnaire to investigate hunter satisfaction with the 2021 hunting season and small game numbers and to estimate the number of people hunting on land managed through the Grouse Enhanced Management Sites (GEMS). The DNR managed 18 GEMS, ranging from 500

to 12,000 acres, located in the northern Lower and Upper Peninsulas. GEMS were locations where hunters could hunt grouse and woodcock. Questions were added to the harvest survey to evaluate whether hunters were aware of the new pheasant hunting license and whether they supported the pheasant release program.

METHODS

Following the 2021 small game hunting seasons, a questionnaire (Appendix A) was sent to 11,000 randomly selected people that were eligible to hunt small game species. Hunters reported species hunted, county hunted, type of land on which hunting occurred (public or private lands), number of days spent afield, and number of animals harvested. In addition, hunters were asked to rate their overall hunting experience and indicate their satisfaction with the amount of game seen and amount harvested, and the number of days in the hunting season.

License buyers were presented with six questions about the new pheasant hunting license and the pheasant release program. Opinions about the license and release program may vary by sex, age, and residence. Thus, estimates were calculated separately for ten different age classes (1-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80+ years old) and for each gender. In addition, estimates were calculated separately for rural and urban areas. The U.S. Census Bureau (2010) classified counties as completely rural, mostly rural, or mostly urban. Completely rural counties included counties where 100% of the population in the county lived in areas that have less than 1,000 people per square mile (Antrim, Arenac, Baraga, Benzie, Keweenaw, Lake, Missaukee, Montmorency, Ogemaw, Ontonagon, Osceola, and Oscoda). Mostly rural counties included counties where 50.1% to 99.9% of the population lived in areas with less than 1,000 people per square mile (Alcona, Alger, Allegan, Alpena, Barry, Branch, Cass, Charlevoix, Cheboygan, Clare, Clinton, Crawford, Emmet, Gladwin, Gogebic, Gratiot, Hillsdale, Huron, Ionia, Iosco, Iron, Kalkaska, Lapeer, Leelanau, Lenawee, Luce, Mackinac, Manistee, Mason, Mecosta, Menominee, Montcalm, Newaygo, Oceana, Otsego, Presque Isle, Roscommon, St. Joseph, Sanilac, Schoolcraft, Shiawassee, Tuscola, Van Buren, and Wexford). Mostly urban counties included counties with greater than 50,000 people and greater than 50% of the residents living in areas with more than 1,000 people per square mile (Bay, Berrien, Calhoun, Chippewa, Delta, Dickinson, Eaton, Genesee, Grand Traverse, Houghton, Ingham, Isabella, Jackson, Kalamazoo, Kent, Livingston, Macomb, Marquette, Midland, Monroe, Muskegon, Oakland, Ottawa, Saginaw, St. Clair, Washtenaw, and Wayne).

In 2014, the small game hunting license was eliminated and replaced by a new base hunting license. This base license was required for any person hunting game species in Michigan. Consequently, a separate hunting license for small game species no longer existed starting in 2014. To accommodate the new license structure, a new sampling design was adopted for the small game harvest survey starting in 2015. Estimates were calculated using a new stratified random sampling design (Cochran 1977). Using stratification, hunters were placed into similar groups (strata) based on the type of license they had purchased.

Hunters that had purchased a base hunting license in 2021 and a small game hunting license in either 2012 or 2013 were grouped into a separate stratum (stratum 1). A second stratum consisted of hunters that had purchased a base license and woodcock stamp in 2021 but had not purchased a small game license in either 2012 or 2013. A third stratum consisted of 2021 base license holders that had not purchased a small game license in either 2012 or 2013. A third stratum consisted of 8,000 people from the first stratum (N= 201,932), 1,500 people from the second stratum (N= 61,954), and 1,500 people from the third stratum (N= 385,455). Estimates were derived for each group separately. The statewide estimate was then derived by combining group estimates so the influence of each group matched the proportion its members contributed to the statewide population of hunters. The primary reason for using a stratified sampling design was to produce more precise estimates. Improved precision means similar estimates should be obtained if this survey were to be repeated.

The DNR sells hunting licenses using a statewide automated license sales system. This system allowed the DNR to maintain a central database containing license sales information (e.g., sales transactions) for each license buyer. The license sales database was used to identify whether woodcock hunters had registered with the HIP.

Estimates were derived separately for the UP, NLP, and SLP (Figure 1). Hunting effort and animals harvested from unknown locations were allocated among areas in proportion to the known effort and harvest.

Estimates were subject to both sampling and nonsampling error. When a sample rather than the entire population has been surveyed, there is a chance that the sample estimates may differ from the true population values that they represent. The difference, or sampling error, varies depending on the particular sample selected, and this variability was measured by the 95% confidence limit (CL). This CL can be added and subtracted from the estimate to calculate the 95% confidence interval. The confidence interval was a measure of the precision associated with the estimate and implies the true value would be within this interval 95 times out of 100.

Estimates also were affected by nonsampling error. Nonsampling error can occur for many reasons, including the failure to include a segment of the population, the inability to obtain data from all people in the sample, the inability or unwillingness of respondents to provide data, mistakes made by respondents, and errors made in the collection or processing of the data. It is very difficult to measure this error. Thus, estimates were not adjusted for nonsampling error. Furthermore, harvest estimates did not include animals taken legally outside the open season (e.g., nuisance animals).

Statistical tests are used routinely to determine the likelihood the differences among estimates are larger than expected by chance alone. The overlap of 95% confidence intervals was used to determine whether estimates differed. Non-overlapping 95% confidence intervals were equivalent to stating the difference between the means

was larger than would be expected 95 out of 100 times (P < 0.05), if the study had been repeated (Payton et al. 2003).

RESULTS AND DISCUSSION

Questionnaires were mailed initially in mid-April 2022. Up to two follow-up questionnaires were sent to non-respondents. Questionnaires were undeliverable to 228 people, primarily because of incorrect addresses. Questionnaires were returned by 3,963 of 10,772 people, yielding a 37% adjusted response rate.

The small game hunting license was replaced by a new base hunting license in 2014. The proportion of base hunting license buyers that hunted small game species in 2021 was significantly less than the proportion of small game hunting license buyers in 2013 $(35 \pm 1\% \text{ in } 2021 \text{ versus } 55 \pm 1\% \text{ in } 2013)$. To accommodate the new base license, a new sampling design was adopted for the current survey. Because of the elimination of the small game hunting license and changes to the sampling design, estimates from the current survey may not be directly comparable to estimates calculated before 2014.

License sales and hunter participation

In 2021, 649,341 people purchased a base hunting license, a decrease of 3.7% from 2020 (Table 2). About $35 \pm 1\%$ of the licensees actually hunted small game in 2021 (Tables 2 and 3). An estimated 224,284 people hunted small game species in 2021, which was nearly the same number of hunters reported in 2020 (Table 3).

About 96% of the active small game hunters were males, and the average age of active small game hunters was 53 years, which was not significantly different from 2020 (Table 3). About $5.6 \pm 2\%$ of the active hunters were less than 17 years old (12,464 ± 4,042 youth hunters). Hunters most often sought squirrels, cottontail rabbits, and ruffed grouse (Table 4).

Harvest and hunting trends

The number of hunters pursuing small game was unchanged statewide for all species between 2020 and 2021 (Table 4). Statewide estimates of hunting effort and harvest also were not significantly different for any species between 2020 and 2021 (Tables 5 and 6). As reported in both 2017 and 2020, no harvested quail were reported by people completing the surveys in 2021.

Among rabbit hunters (cottontail rabbit and snowshoe hare combined), about 54% of them (48,619 hunters) pursued rabbits during January (Table 7). These hunters spent about an average of 2.1 days hunting rabbits in January. Hunters also frequently hunted rabbits in December (36% of hunters) and February (43%).

Among squirrel hunters, about 45% of them (39,797 hunters) pursued squirrels during October (Table 8). These hunters spent an average of 2.0 days hunting squirrels in October. Hunters also frequently hunted squirrels in September (36% of hunters).

The number of small game hunters in Michigan in 2021 has declined by about 66% since the mid-1950s (Figure 2). This trend has been reported previously in Michigan and nationally (Brown et. al. 2000, Enck et al. 2000, Frawley 2006, U.S. Department of the Interior 2008). Hawn (1979) speculated declining ring-necked pheasant populations was the primary reason for declining small game hunter numbers in Michigan. The number of people hunting pheasants has declined by about 95% between the mid-1950s and recent years (Figure 3). Many other factors have contributed to the decline of small game hunting, including increased urbanization of the human population, increased competition between hunting and other leisure activities, and loss of wildlife habitat (Brown et al. 2000).

Declining small game hunting participation since the mid-1950s also has been noted among hunters pursuing cottontail rabbits (-79%), snowshoe hare (-79%), and squirrels (-58%, Figure 3). Long-term changes in hunter participation and harvest were generally similar.

Hunter numbers in the 1970s through the early 1980s were likely affected by the initiation and subsequent elimination of the put-take pheasant program (Figure 4). This program was created for the purpose of providing additional pheasant hunting opportunities. Each year while the program existed, pen-raised pheasants were released on several state properties in southern Michigan (Janson 1975, Janson and Anderson 1976).

Changes in the harvest of game species and hunter participation usually track changes in game populations. The number of hunters that pursued pheasants, rabbits, snowshoe hares, and squirrels were near record low levels during recent years (Figure 3). Wildlife population surveys have also indicated pheasant and woodcock populations are currently among their lowest recorded levels since the 1960s (Seamans and Rau 2022, Stewart and Trowbridge 2019a, 2019b). The abundance of quail, rabbit, hare, and squirrels was not monitored annually; thus, it was not possible to determine whether harvest and population trends were similar. Michigan's grouse population generally follows a cyclic pattern lasting about 10 years, and the grouse population in 2021 appeared to be approaching a near-term low (Stewart and Trowbridge 2019b).

Although many small game species are not as abundant today as during previous decades (e.g., pheasant, quail, woodcock), the mean number of animals taken per hunting effort has not paralleled changes in the population (Figure 5). For example, hunting efficiency has been high among hunters despite declining numbers of woodcock.

About 36% of the small game hunters in Michigan hunted on private lands only, 26% hunted on public lands only, and 27% hunted on both private and public lands (Table 9).

Private lands served as the primary area for hunters pursuing cottontail rabbits, squirrels, crows, and coyotes (Tables 9 and 10), while public lands were most popular among hunters pursuing grouse, quail, woodcock, and snowshoe hares.

Hunter satisfaction

The proportion of small game hunters that were satisfied (very satisfied and somewhat satisfied combined) with their overall small game hunting experience was similar in 2020 and 2021 (66% in both years, Table 10). In addition, similar proportions of small game hunters were satisfied with the amount of small game harvested in 2020 and 2021 (35% in 2020 versus 36% in 2021) and the amount of small game seen (45% in 2020 versus 49% in 2021).

Woodcock hunters and Harvest Information Program (HIP) compliance

In 2021, 59 \pm 6% of the woodcock hunters had registered with the HIP. Compliance among woodcock hunters in 2021 was not significantly lower than the level reported in 2020 (70% compliance in 2020, Frawley 2023). Hunters registered with HIP were responsible for about 69% of the woodcock taken and 63% of the woodcock hunting trips done in 2021 (Table 12).

Seamans and Rau (2022) reported estimates of harvest, hunter numbers, and hunting efforts of Michigan woodcock hunters in 2021 from an independent survey done by the USFWS. These estimates were based on responses received from a random sample of HIP registrants. Seamans and Rau estimated $20,100 \pm 4,900$ hunters went afield $93,700 \pm 21,560$ days and harvested $47,500 \pm 11,760$ woodcock in 2021. These estimates were significantly less than the estimate from the present survey (Tables 4-6). Because about 41% of Michigan woodcock hunters failed to register with HIP, the estimates derived from the USFWS survey would be expected to be lower than estimates from the present survey. However, estimates derived from a subset of Michigan hunters that had registered with HIP in 2021 (Table 11) were still significantly greater than estimates from the USFWS survey. These differences may reflect unknown differences in the way the surveys were implemented.

Grouse Enhanced Management Sites (GEMS)

The DNR managed 18 GEMS, ranging from 500 to 12,000 acres, located in the northern Lower and Upper Peninsulas. GEMS were locations where hunters could hunt grouse and woodcock. An estimated 15,066 hunters spent 57,259 days afield hunting ruffed grouse and woodcock on GEMS in 2021 (Table 12). These estimates were not significantly different from estimates reported for 2020 (i.e., 14,551 hunters spent 52,914 days hunting on GEMS in 2020).

Public-land Pheasant Hunting License and Release Program

In 2021, 11,813 people purchased a public-land pheasant hunting license. Everybody that was eligible to hunt small game (i.e., people buying a base hunting license) was asked if they were aware of the new public-land pheasant hunting license and the release of farm-raised pheasants on nine public wildlife management areas. The license buyers also were asked if the new pheasant license and the releases of pheasants affected their pheasant hunting activity and whether they supported the new license and pheasant releases.

About 19% of base-license buyers (126,445 \pm 8,818) were aware of the new public-land pheasant hunting license (Table 13), and 3% of the base-license buyers (18,264 \pm 3,544) indicated that they were more likely to hunt pheasants because of the new hunting license (Table 14). An estimated 1% of base-license buyers (7,832 \pm 2,099) pursued pheasants on one of the nine wildlife management areas where farm-raised pheasants had been released (Table 15). About 17% of base-license buyers (108,032 \pm 7,910) were aware that farm-raised pheasants had been released on selected wildlife areas in 2021 (Table 16), and 10% of the base-license buyers (64,351 \pm 6,782) indicated that they were more likely to hunt pheasants because of the pheasant release program (Table 17). Overall, 64% of base-license buyers (414,452 \pm 11,817) were supportive of the pheasant release program (Table 18).

About 19% of active small game hunters $(43,691 \pm 4,667)$ were aware of the new public-land pheasant hunting license (Table 19). Nearly 4% of the active small game hunters $(8,904 \pm 2,357)$ indicated that they were more likely to hunt pheasants because of the new hunting license; however, 23% of the active hunters $(52,367 \pm 5,526)$ were less likely to hunt peasants because of the new license (Table 20). About 3% of active small game hunters $(7,071 \pm 2,012)$ pursued pheasants on a wildlife management area where farm-raised pheasants had been released (Table 21). About 24% of active small game hunters $(53,724 \pm 5,119)$ were aware that farm-raised pheasants had been released on selected wildlife areas in 2021 (Table 22), and 13% of the active small game hunters $(30,066 \pm 4,434)$ indicated that they were more likely to hunt pheasants because of the pheasant release program (Table 23). Overall, 71% of active small game hunters $(71,931 \pm 6,763)$ supported the pheasant release program (Table 24).

The number of active small game hunters pursuing released pheasants in 2021 $(7,071 \pm 2,012)$ was significantly greater than the number of hunters reported in 2019 $(2,851 \pm 1,192)$ (Frawley 2020). The increased participation probably reflected the effects of COVID-19 restrictions that allowed more people to hunt annually since 2019 (Frawley 2023) and that more people have discovered this program. However, the 2021 estimate may be too high because traditional sampling methods are less reliable when the target population (i.e., pheasant hunters on nine hunting areas) is a small percentage $(1.2 \pm 0.3\%)$ of the entire population of base license buyers. Furthermore, nonresponse bias caused by the low survey response rate (37% response rate) likely contributed to an overestimate. Nonresponse bias occurs when the individuals who do not respond to a survey have different characteristics than those who do respond.

Most Michigan hunters supported the pheasant release program. Support for the pheasant release program was not significantly different among hunter groups defined by their sex (males versus females), residence type (rural versus urban), or license buying history (new versus repeat buyers). Greater than 50% of all age classes supported the pheasant release program, although support was lowest among the oldest age classes (Figures 6 and 7).

In general, there is a strong positive relationship between hunting satisfaction and the hunter's ability to see, hear, and harvest game (e.g., Siemer et al. 2022). For example, New York small game hunters reported that they had stopped hunting pheasants because of diminished chances of seeing pheasants.

The current pheasant release program in Michigan probably can increase pheasant hunter satisfaction on release areas by increasing the chances that they see a pheasant. Although most Michigan hunters supported the pheasant release program, many pheasant hunters also were less likely to hunt pheasants because of the publicland pheasant hunting license. Similarly, Siemer et al. (2022) reported that New York small game hunters supported pheasant release programs for hunting; however, they did not support charging an additional fee to hunt these released pheasants.

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Species and region ^a	Season dates						
Ring-necked pheasant - Zone 1	Oct. 10 – 31						
Ring-necked pheasant - Zone 2	Oct. 20 – Nov. 14						
Ring-necked pheasant - Zone 3	Oct. 20 – Nov. 14 and Dec. 1 – Jan. 1						
Northern bobwhite – SLP	Oct. 20 – Nov. 14						
Ruffed grouse - statewide	Sept. 15 – Nov. 14 and Dec. 1 – Jan. 1						
American woodcock - statewide	Sept. 15 – Oct. 29						
Cottontail rabbit - statewide	Sept. 15 – March 31						
Snowshoe hare - statewide	Sept. 15 – March 31						
Squirrels - statewide	Sept. 15 – March 31						
American crow - statewide	Aug. 1 – Sept. 30 and Feb. 1 – March 31						
Coyote - statewide	Year-round						

Table 1. Small game hunting seasons in Michigan, 2021-2022.

^aSee Figure 1 for boundaries of hunt regions.

	<u> </u>					
						2020-2021
Item	2017	2018	2019	2020	2021	% Change
Number of licenses sold ^a	682,848	660,014	682,847	678,100	651,785	-3.9
Number of people buying a						
hunting license ^b	680,286	657,995	640,242	674,360	649,341	-3.7

Table 2. The number of small game hunting licenses sold in Michigan, 2017-2021.

^aThe number of licenses sold is higher than the number of people buying licenses because some people purchased multiple licenses. ^bA person was counted only once, regardless of how many licenses they purchased.

Table 3. Estimated sex and age of active small game hunters in Michigan, 2013-2021.^a

	<u> </u>	0		U i		
	2013	2015	2017	2020	2021	2021
Variable	estimate	estimate	estimate	estimate	estimate	95% CL
Hunters ^b	152,686	189,999	159,270	224,340	224,284	10,165
Males (%)	95.4	94.5	92.6	96.0	96.0	1.3
Females (%)	4.6	5.5	7.4	4.0	4.0	1.3
Age (Years) ^c	46.1	47.8	48.2	51.9	53.1	1.1

^aAnalyses included only those people that hunted. No survey was done in 2014, 2016, 2018, and 2019.

^bPeople that hunted American crow, American woodcock, cottontail rabbit, coyote, northern bobwhite quail, ring-necked pheasant, ruffed grouse, snowshoe hare, or squirrels.

^cMean age of active hunters on October 1.

*Non-overlapping 95% confidence intervals indicated estimates differed significantly between the last two years (P<0.05).

				- <u>-</u>		2020-21
	2015	2017	2020	2021	2021	%
Region and species	hunters	hunters	hunters	hunters	95% CL	change
UP ring-necked pheasant ^b	1,587	1,151	1,689	1,406	771	-17
NLP ring-necked pheasant	8,661	6,138	11,798	12,386	2,364	5
SLP ring-necked pheasant	13,774	9,605	14,880	14,077	2,359	-5
Statewide pheasant	23,209	16,443	26,394	25,710	3,712	-3
NLP northern bobwhite quail	0	161	268	0	0	NA
SLP northern bobwhite quail	406	161	1,218	513	502	-58
Statewide quail	406	322	1,487	513	502	-65
UP ruffed grouse	39,715	30,635	49,090	56,072	5,222	14
NLP ruffed grouse	40,879	34,075	59,021	52,704	4,890	-11
SLP ruffed grouse	7,759	6,420	7,799	6,064	1,635	-22
Statewide ruffed grouse	83,175	68,102	108,260	107,367	6,961	-1
UP American woodcock	12,912	8,832	15,145	19,324	2,973	28
NLP American woodcock	21,095	18,834	37,621	33,119	3,762	-12
SLP American woodcock	5,688	3,852	4,270	4,434	1,376	4
Statewide American woodcock	36,466	29,647	52,083	52,008	4,937	0
UP cottontail rabbit	5,272	3,039	4,615	3,882	1,296	-16
NLP cottontail rabbit	23,941	20,550	28,579	25,301	3,985	-11
SLP cottontail rabbit	50,003	40,932	56,274	56,639	6,203	1
Statewide cottontail rabbit	76,026	62,526	83,744	82,078	7,543	-2
UP snowshoe hare	9,338	6,504	9,743	8,162	1,862	-16
NLP snowshoe hare	7,038	4,200	9,314	6,692	1,697	-28
SLP snowshoe hare	1,861	1,875	1,640	1,290	760	-21
Statewide snowshoe hare	17,902	12,192	19,445	15,507	2,685	-20
UP squirrels	7,436	3,296	7,042	4,898	1,461	-30
NLP squirrels	36,162	30,249	37,057	36,751	4,659	-1
SLP squirrels	55,913	43,345	58,785	52,728	5,780	-10
Statewide squirrels	95,861	72,429	93,930	89,466	7,514	-5
UP American crows	1,956	324	676	573	484	-15
NLP American crows	4,275	3,354	5,815	4,615	1,603	-21
SLP American crows	8,820	3,415	6,668	7,602	2,542	14
Statewide American crows	14,648	7,029	12,749	12,666	3,254	-1
UP coyote	6,113	4,622	7,209	5,972	1,826	-17
NLP coyote	16,181	18,547	19,059	18,812	3,078	-1
SLP coyote	24,314	18,086	28,245	28,074	4,536	-1
Statewide coyote	44,495	39,128	50,411	50,131	5,732	-1

Table 4. Estimated number of small game hunters by species and region in Michigan, 2015-2021.^a

^aThe number of hunters does not add up to the statewide total because hunters can hunt in more than one region. No survey was done in 2014, 2016, 2018, or 2019.

^bIncluded both regular and late pheasant hunting seasons.

*Non-overlapping 95% confidence intervals indicated estimates differed significantly (P<0.05).

Table 5. The estimated amount of small game hunter effort (days afield) by species and region, 2015-2021.^a

						2020-21
	2015	2017	2020	2021	2021	%
Region and species	effort	effort	effort	effort	95% CL	change
UP ring-necked pheasant ^b	7,832	5,590	6,999	3,570	3,363	-49
NLP ring-necked pheasant	29,624	24,042	51,267	41,851	13,629	-18
SLP ring-necked pheasant	40,929	40,347	52,633	42,539	12,204	-19
Statewide pheasant	78,385	69,979	110,900	87,960	20,224	-21
NLP northern bobwhite quail	0	147	1,565	0	0	NA
SLP northern bobwhite quail	541	369	0	0	0	NA
Statewide quail ^c	541	516	1,565	0	0	NA
UP ruffed grouse	344,438	236,009	414,245	438,070	70,633	6
NLP ruffed grouse	209,078	177,334	309,412	302,795	52,422	-2
SLP ruffed grouse	21,615	36,733	25,329	28,562	12,385	13
Statewide ruffed grouse	575,131	450,076	748,985	769,426	88,697	3
UP American woodcock	90,885	57,228	99,568	110,227	30,423	11
NLP American woodcock	106,519	95,774	192,910	216,468	43,738	12
SLP American woodcock	15,180	9,836	14,418	27,954	12,072	94
Statewide American woodcock	212,584	162,838	306,896	354,649	57,314	16
UP cottontail rabbit	28,345	26,159	31,158	20,601	10,157	-34
NLP cottontail rabbit	93,790	144,240	163,927	119,138	37,333	-27
SLP cottontail rabbit	205,808	210,873	261,631	239,912	48,502	-8
Statewide cottontail rabbit	327,943	381,272	456,715	379,650	63,995	-17
UP snowshoe hare	48,047	43,872	40,527	43,643	21,121	8
NLP snowshoe hare	25,208	23,648	57,232	27,097	12,474	-53
SLP snowshoe hare	4,022	3,268	8,096	5,237	4,503	-35
Statewide snowshoe hare	77,277	70,788	105,855	75,976	25,750	-28
UP squirrels	74,126	30,953	51,909	30,275	18,209	-42
NLP squirrels	164,766	200,737	202,591	229,295	59,420	13
SLP squirrels	231,961	236,381	281,193	229,755	46,261	-18
Statewide squirrels	470,852	468,071	535,693	489,325	79,816	-9
UP American crows	6,786	1,572	2,040	803	1,082	-61
NLP American crows	13,216	19,594	24,003	23,177	13,573	-3
SLP American crows	19,740	12,390	27,328	21,679	10,608	-21
Statewide American crows	39,743	33,556	53,370	45,658	17,743	-14
UP coyote	43,291	21,813	45,407	67,149	89,977	48
NLP coyote	73,205	110,455	89,719	85,323	23,353	-5
SLP coyote	95,634	144,051	193,265	128,464	39,968	-34
Statewide coyote	212,131	276,319	328,390	280,936	102,156	-14

^a No survey was done in 2014, 2016, 2018, or 2019.

^bIncluded both regular and late pheasant hunting seasons.

^cAlthough hunters had reported hunting quail, none of these hunters reported the number of days they hunted. *Non-overlapping 95% confidence intervals indicated estimates differed significantly (P<0.05).

	arvoor by op				2021.	2020.21
	2015	2017	2020	2021	2021	2020-21
Region and species	harvest	harvest	harvest	harvest	95% CI	change
UP ring-necked pheasant ^b	2 766	2 086	2 803	1 501	1 637	-46
NI P ring-necked pheasant	8 727	6,982	13 043	12 957	6,329	-1
SI P ring-necked pheasant	10 898	3 786	12,982	10,650	3 925	-18
Statewide pheasant	22 391	12 855	28 827	25 109	7 926	-13
NLP northern bobwhite quail	0	0	0	0	0	NA
SLP northern bobwhite quail	141	0	0	0	0	NA
Statewide quail	141	0	0	0	0	NA
UP ruffed grouse	135.245	99.692	162.258	196.917	33.096	21
NLP ruffed arouse	78.855	54.528	85,685	79.034	18,660	-8
SLP ruffed grouse	3,842	9,129	4,939	5,841	5,150	18
Statewide ruffed grouse	217,942	163,349	252,882	281,792	40,385	11
UP American woodcock	21,792	23,912	33,719	41,507	14,159	23
NLP American woodcock	63,120	43,855	96,227	98,346	24,156	2
SLP American woodcock	8,214	4,238	6,615	3,115	2,284	-53
Statewide American woodcock	93,127	72,005	136,561	142,969	29,581	5
UP cottontail rabbit	4,233	6,778	5,494	8,278	5,167	51
NLP cottontail rabbit	62,207	56,745	83,630	89,887	36,792	7
SLP cottontail rabbit	188,809	105,866	182,156	190,064	38,638	4
Statewide cottontail rabbit	255,248	169,388	271,280	288,229	57,491	6
UP snowshoe hare	20,731	14,995	20,346	19,513	541	-4
NLP snowshoe hare	14,200	6,362	32,612	7,026	1,659	-78*
SLP snowshoe hare	1,650	1,716	6,118	396	11,440	-94
Statewide snowshoe hare	36,581	23,072	59,076	26,934	12,696	-54
UP squirrels	37,607	21,414	37,457	25,434	11,440	-32
NLP squirrels	221,047	135,318	188,240	225,450	79,146	20
SLP squirrels	276,386	179,034	290,099	223,889	43,316	-23
Statewide squirrels	535,040	335,766	515,797	474,773	91,796	-8
UP American crows	4,900	4,765	1,173	1,632	1,711	39
NLP American crows	18,892	52,264	38,770	16,203	9,346	-58
SLP American crows	39,032	7,964	34,802	36,853	24,767	6
Statewide American crows	62,825	64,993	74,745	54,688	27,123	-27
UP coyote	10,902	2,292	7,893	3,779	2,034	-52
NLP coyote	12,438	22,330	62,122	16,013	8,037	-74
SLP coyote	26,016	29,350	26,407	38,370	19,325	45
Statewide coyote	49,356	53,973	96,423	58,162	21,506	-40

Table 6. Estimated small game harvest by species and region in Michigan, 2015-2021.^a

^a No survey was done in 2014, 2016, 2018, or 2019. ^bIncluded both regular and late pheasant hunting seasons. *Non-overlapping 95% confidence intervals indicated estimates differed significantly (P<0.05).

			Total		Mean			
	% of		number		days			
	rabbit	95%	of	95%	per	95%	Total	95%
Month	hunters	CL	hunters	CL	hunter	CL	days	CL
September	11.3	3.1	10,107	2,787	0.5	0.2	47,756	16,348
October	21.0	4.0	18,764	3,557	1.0	0.3	88,267	22,571
November	18.9	3.8	16,935	3,367	0.8	0.2	71,337	19,595
December	35.6	4.4	31,839	3,917	1.6	0.3	145,035	25,714
January	54.3	4.6	48,619	4,132	2.1	0.3	183,857	26,878
February	42.7	4.6	38,181	4,135	1.1	0.2	99,254	13,553
March	20.4	3.8	18,238	3,428	0.5	0.1	47,169	12,173

Table 7. The estimated number rabbit (cottontail rabbits and snowshoe hares combined) hunters and their days of hunting effort by month in Michigan, 2021.

Table 8. The estimated number squirrel hunters and their days of hunting effort by month in Michigan, 2021.

			Total		Mean			
	% of		number		days			
	squirrel	95%	of	95%	per	95%	Total	95%
Month	hunters	CL	hunters	CL	hunter	CL	days	CL
September	36.1	4.4	32,329	3,958	1.4	0.2	122,939	20,239
October	44.5	4.5	39,797	4,041	2.0	0.3	182,443	27,884
November	28.2	4.1	25,252	3,699	1.1	0.2	95,764	20,017
December	26.4	4.0	23,611	3,622	1.2	0.3	106,400	23,580
January	29.7	4.2	26,545	3,739	1.1	0.2	99,272	20,534
February	24.5	4.1	21,889	3,636	0.8	0.2	75,450	18,059
March	12.4	3.1	11,097	2,775	0.5	0.2	42,440	17,535

											Both					
		Pri-		Pri-					Both pri-	Both	priv-	Both				
	Priv-	vate	Pri-	vate	Pub-		Pub-	Public	vate	and	and	and		Un-		Un-
	ate	land	vate	land	lic	Public	lic	land	and	public	pub-	public	Un-	known		known
	land	only	land	only	land	land	land	only	public	lands	lic	lands	known	land	Un-	land
Species	Total	95% CL	%	95% CL	Total	95% CL	0111y	95% CL	Total	95% CL	%	95% CL	Total	95% CL	land %	95% CL
Ring-necked pheasant	9,276	2,393	36	7	8,299	1,993	32	7	3,134	1,220	12	5	5,001	1,746	19	6
Northern bobwhite																
quail	124	242	24	41	248	342	48	49	141	276	28	45	0	0	0	0
Ruffed grouse	17,557	3,088	16	3	48,270	4,939	45	4	28,502	3,770	27	3	13,037	2,852	12	2
American woodcock	6,310	1,921	12	3	24,862	3,376	48	5	12,205	2,530	23	4	8,631	2,175	17	4
Cottontail rabbit	49.053	6,080	60	5	14,654	3,496	18	4	11,288	2,695	14	3	7,082	2,162	9	3
Snowshoe hare	1,894	954	12	6	6,832	1,804	44	9	4,904	1,526	32	8	1,877	945	12	6
Squirrels	42,461	5,231	47	4	22,450	4,207	25	4	14,269	2,826	16	3	10,286	2,971	11	3
American crow	6,993	2,157	55	13	1,956	1,716	15	12	1,974	1,268	16	9	1,744	1,229	14	9
Coyote	34,212	5,022	68	5	4,223	1,633	8	3	8,084	2,110	16	4	3,613	1,305	7	3
Combined	80,664	7,481	36	3	57,810	5,841	26	2	61,459	5,642	27	2	24,351	3,977	11	2

 Table 9. Estimated number and proportion of hunters hunting on private and public lands during the 2021 small game hunting season, summarized by species.

					Both	Both		
		Private		Public	private	private		
	Private	lands	Public	lands	and public	and public		Unknown
	lands	95%	lands	95%	lands	lands 95%	Unknown	95%
Species	Total	CL	Total	CL	Total	CL	Total	CL
Ring-necked								
pheasant	28,357	9,637	33,716	10,818	14,942	8,372	10,945	9,116
Northern bobwhite								
quail	0	0	0	0	0	0	0	0
Ruffed grouse	98,695	29,135	388,148	63,843	203,655	44,531	78,929	27,701
American								
woodcock	38,761	22,355	178,985	36,327	62,938	22,473	73,964	30,701
Cottontail rabbit	213,313	44,503	80,267	34,931	54,018	21,032	32,052	20,008
Snowshoe hare	6,653	4,751	40,034	16,811	20,542	10,629	8,747	10,222
Squirrels	217,977	46,942	120,708	40,938	71,974	23,512	78,666	43,436
American crow	32,550	15,955	744	838	7,315	5,236	5,050	5,521
Coyote	168,474	42,407	15,723	7,846	89,266	91,992	7,473	4,866

Table 10. Estimated number of days of hunting effort on private and public lands during the 2021 small game hunting season in Michigan, summarized by species.^a

^aPeople that hunted small game on both private and public lands were not asked to record the amount of effort separately for each land type; thus, it was not possible to estimate the total amount or proportion of effort devoted to either private or public lands separately.

Table 10. Level of satisfaction among active small game hunters (% of hunters) with the 2021 small game hunting season in Michigan.^a

				Some-						
				what				Some-		
			Some-	satis-			Some-	what		Very
The index used to	Very	Very	what	fied		Neutral	what	dissatis-	Very	dissatis-
measure season	satis-	satisfied	satis-	95%	Neutral	95%	dissatis-	fied 95%	dissatis-	fied 95%
satisfaction	fied %	95% CL	fied %	CL	%	CL	fied %	CL	fied %	CL
Small game seen	20	2	29	3	23	2	17	2	11	2
Small game harvested	13	2	23	2	29	2	18	2	17	2
Length of season	39	3	23	2	28	3	7	1	3	1
Overall experience	31	3	35	3	22	2	8	2	4	1

^aAnalyses limited to small game license buyers that actually hunted in 2021 and indicated a level of satisfaction.

Table 11. Estimated number of Michigan woodcock hunters, woodcock harvested, and hunting effort (days afield) among people that registered with the Harvest Information Program, 2021.^a

Variable	No.	95% CL
Hunters	30,714	3,709
Days afield (effort)	221,691	43,841
Harvest	98,425	25,368

^aAnalyses limited to people that registered with HIP and hunted woodcock.

Table 12. Estimated number of Michigan hunters and hunting effort (days afield) among people that hunted on Grouse Enhanced Management Sites (GEMS), 2021.

	<u> </u>	
Variable	No.	95% CL
Hunters	15,066	2,789
Days afield (effort)	57,259	16,802
Mean days afield per hunter	3.8	0.9

	Yes	Yes	No	No	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL
All base license buyers	19	1	58	2	23	1
Males buyers	20	1	58	2	23	1
Female buyers	21	7	58	8	22	7
Completely rural buyers	18	6	58	8	25	7
Mostly rural buyers	20	2	59	3	22	2
Mostly urban buyers	21	2	56	2	23	2
New buyers ^b	15	8	69	9	16	7
Repeat buyers	20	1	57	2	23	1
Ages 1-9	14	25	55	36	31	33
Ages 10-19	14	7	55	9	31	9
Ages 20-29	14	5	65	7	21	6
Ages 30-39	23	5	58	6	19	5
Ages 40-49	16	3	66	5	18	4
Ages 50-59	19	3	59	4	22	3
Ages 60-69	23	3	53	3	24	3
Ages 70-79	20	3	58	4	22	3
Ages 80+	17	6	57	8	26	7

Table 13. The proportion of base hunting license buyers that indicated that they were aware of the pheasant hunting license.^a

^aIn 2021, 649,341 people purchased a base hunting license. A pheasant hunting license costing \$25 was required to hunt pheasants on any public land in the Lower Peninsula or on any private lands enrolled in the Hunting Access Program (HAP).
 ^bNew license buyers were defined as people that had not purchased a license during the previous 11 years (2010-2020).

	Less likely	Less likely	Neither	Neither	More likely	More likely	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL	%	95% CL
All license buyers	24	2	68	2	3	1	6	1
Males buyers	24	2	67	2	3	1	5	1
Female buyers	18	7	75	7	0	1	6	4
Completely rural buyers	26	7	66	8	2	2	5	3
Mostly rural buyers	27	3	65	3	2	1	6	2
Mostly urban buyers	23	2	69	2	3	1	5	1
New buyers ^b	8	5	85	6	3	4	4	3
Repeat buyers	25	2	67	2	3	1	6	1
Ages 1-9	0	0	100	0	0	0	0	0
Ages 10-19	12	6	79	7	2	3	6	5
Ages 20-29	13	5	81	6	3	3	3	3
Ages 30-39	17	5	77	5	4	2	2	1
Ages 40-49	16	4	78	4	4	2	2	1
Ages 50-59	25	4	69	4	3	1	3	1
Ages 60-69	29	3	63	3	3	1	5	1
Ages 70-79	30	4	59	4	1	1	9	3
Ages 80+	26	8	47	8	3	2	25	7

Table 14. The proportion of base hunting license buyers that indicated that they were more or less likely to hunt pheasants because of the pheasant hunting license.^a

^aIn 2021, 649,341 people purchased a base hunting license. A pheasant hunting license costing \$25 was required to hunt pheasants on any public land in the Lower Peninsula or on any private lands enrolled in the Hunting Access Program (HAP).
 ^bNew license buyers were defined as people that had not purchased a license during the previous 11 years (2010-2020).

	Yes	Yes	No	No	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL
All base license buyers	1	0	94	1	4	1
Males buyers	1	0	94	1	4	1
Female buyers	0	1	94	4	6	4
Completely rural buyers	0	0	96	3	4	3
Mostly rural buyers	1	0	94	1	5	1
Mostly urban buyers	1	0	95	1	4	1
New buyers ^b	1	1	96	3	3	2
Repeat buyers	1	0	94	1	4	1
Ages 1-9	0	0	100	0	0	0
Ages 10-19	2	3	93	5	5	4
Ages 20-29	2	2	95	3	2	3
Ages 30-39	2	1	97	2	2	1
Ages 40-49	1	1	97	1	1	1
Ages 50-59	1	1	96	1	2	1
Ages 60-69	1	1	95	1	4	1
Ages 70-79	0	0	92	3	7	3
Ages 80+	0	1	79	7	21	7

Table 15. The proportion of base hunting license buyers that indicated that they hunted for released pheasants on a wildlife management area.^a

^aIn 2021, 649,341 people purchased a base hunting license. Farm-reared pheasants were released on 9 public wildlife management areas.

· · · · ·	Yes	Yes	No	No	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL
All base license buyers	17	1	80	1	4	1
Males buyers	17	1	79	1	4	1
Female buyers	12	5	82	6	6	4
Completely rural buyers	17	6	79	6	4	3
Mostly rural buyers	16	2	80	2	4	1
Mostly urban buyers	19	2	78	2	3	1
New buyers ^b	10	7	87	7	3	2
Repeat buyers	17	1	79	1	4	1
Ages 1-9	14	25	86	25	0	0
Ages 10-19	9	5	86	7	5	4
Ages 20-29	11	4	86	5	3	3
Ages 30-39	15	4	84	4	1	1
Ages 40-49	15	3	83	4	1	1
Ages 50-59	16	3	83	3	2	1
Ages 60-69	21	3	75	3	4	1
Ages 70-79	19	3	75	4	7	2
Ages 80+	12	5	70	7	18	6

Table 16. The proportion of base hunting license buyers that indicated that they were aware that farm-reared pheasants were released on 9 public wildlife management areas in 2021.^a

^aIn 2021, 649,341 people purchased a base hunting license. Farm-reared pheasants were released on 9 public wildlife management areas.

	Less likely	Less likely	Neither	Neither	More likely	More likely	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL	%	95% CL
All license buyers	10	1	75	2	10	1	5	1
Males buyers	10	1	74	2	10	1	5	1
Female buyers	10	5	79	7	5	3	6	4
Completely rural								
buyers	15	6	73	7	7	3	5	3
Mostly rural buyers	11	2	73	3	9	2	6	2
Mostly urban buyers	9	1	76	2	11	1	4	1
New buyers ^b	5	5	85	7	7	5	3	2
Repeat buyers	10	1	74	2	10	1	5	1
Ages 1-9	0	0	100	0	0	0	0	0
Ages 10-19	5	4	82	7	6	4	6	5
Ages 20-29	6	4	77	6	14	5	3	3
Ages 30-39	4	2	81	5	14	4	1	1
Ages 40-49	4	2	82	4	13	4	2	1
Ages 50-59	6	2	80	3	12	3	3	1
Ages 60-69	13	2	73	3	10	2	5	1
Ages 70-79	17	3	68	4	5	2	10	3
Ages 80+	18	7	49	8	7	4	25	7

Table 17. The proportion of base hunting license buyers that indicated that they were more or less likely to hunt pheasants in 2021 because farm-reared pheasants were released on the 9 public wildlife management areas.^a

^aIn 2021, 649,341 people purchased a base hunting license. Farm-reared pheasants were released on 9 public wildlife management areas.

	Support	Support	Neither	Neither	Oppose	Oppose	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL	%	95% CL
All license buyers	64	2	28	2	5	1	4	1
Males buyers	65	2	26	2	5	1	3	1
Female buyers	46	8	43	8	5	4	6	4
Completely rural buyers	58	8	34	8	4	2	4	3
Mostly rural buyers	63	3	27	3	6	2	4	1
Mostly urban buyers	65	2	27	2	4	1	3	1
New buyers ^b	52	11	40	10	6	5	3	2
Repeat buyers	64	2	27	2	5	1	4	1
Ages 1-9	59	35	27	32	0	0	14	25
Ages 10-19	53	9	41	9	2	3	5	4
Ages 20-29	59	8	33	8	5	4	3	3
Ages 30-39	70	6	26	6	3	1	1	1
Ages 40-49	69	5	26	5	5	2	1	1
Ages 50-59	70	4	24	4	4	2	2	1
Ages 60-69	63	3	28	3	6	2	3	1
Ages 70-79	60	4	26	4	7	2	6	2
Ages 80+	50	8	27	7	8	4	16	6

Table 18. The proportion of base hunting license buyers that supported or opposed releasing farm-reared pheasants for hunting on public wildlife management areas.^a

^aIn 2021, 649,341 people purchased a base hunting license. Farm-reared pheasants were released on 9 public wildlife management areas.

	Yes	Yes	No	No	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL
Active small game hunters	19	2	28	3	52	3
Males hunters	20	2	28	3	52	3
Female hunters	6	6	31	15	63	16
Completely rural hunters	16	10	34	11	50	12
Mostly rural hunters	21	4	28	4	50	5
Mostly urban hunters	19	3	27	3	54	4
New buyers ^b	12	9	42	16	46	16
Repeat buyers	20	2	27	3	52	3
Ages 1-9	0	0	30	49	70	49
Ages 10-19	10	7	31	13	58	14
Ages 20-29	21	10	35	10	44	11
Ages 30-39	24	7	25	8	51	10
Ages 40-49	23	7	29	7	48	8
Ages 50-59	18	4	27	5	55	6
Ages 60-69	21	4	26	5	53	5
Ages 70-79	21	5	29	6	50	6
Ages 80+	11	8	39	13	50	13

Table 19. The proportion of active small game hunters that indicated that they were aware of the pheasant hunting license in 2021.^a

^aIn 2021, an estimated 224,284 ± 10,165 people hunted small game in Michigan. A pheasant hunting license costing \$25 was required to hunt pheasants on any public land in the Lower Peninsula or on any private lands enrolled in the Hunting Access Program (HAP).

	Less likely	Less likely	Neither	Neither	More likely	More likely	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Active small game hunters	23	2	67	3	4	1	5	1
Males hunters	24	2	67	3	4	1	5	1
Female hunters	20	13	74	13	1	3	4	5
Completely rural hunters	25	11	64	11	5	5	5	5
Mostly rural hunters	26	4	64	4	4	2	6	2
Mostly urban hunters	23	3	68	3	4	1	5	2
New buyers ^b	12	9	78	14	6	11	4	5
Repeat buyers	24	2	67	3	4	1	5	1
Ages 1-9	0	0	100	0	0	0	0	0
Ages 10-19	13	9	77	12	5	6	5	6
Ages 20-29	16	8	76	10	6	7	1	2
Ages 30-39	19	7	74	8	4	3	3	3
Ages 40-49	16	5	76	7	5	3	3	2
Ages 50-59	24	5	68	5	5	2	3	2
Ages 60-69	28	4	62	5	3	2	7	2
Ages 70-79	31	6	60	6	2	2	7	3
Ages 80+	27	12	43	13	2	3	29	12

Table 20. The proportion of active small game hunters that indicated that they were more or less likely to hunt pheasants because of the pheasant hunting license.^a

^aIn 2021, an estimated 224,284 ± 10,165 people hunted small game in Michigan. A pheasant hunting license costing \$25 was required to hunt pheasants on any public land in the Lower Peninsula or on any private lands enrolled in the Hunting Access Program (HAP).

	Yes	Yes	No	No	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL
Active small game hunters	3	1	93	1	4	1
Males hunters	3	1	93	1	4	1
Female hunters	0	0	96	5	4	5
Completely rural hunters	0	0	95	5	5	5
Mostly rural hunters	3	1	93	2	4	2
Mostly urban hunters	4	1	93	2	4	1
New buyers ^b	2	3	96	5	2	3
Repeat buyers	3	1	93	1	4	1
Ages 1-9	0	0	100	0	0	0
Ages 10-19	3	6	94	8	3	6
Ages 20-29	6	4	93	5	1	2
Ages 30-39	5	4	93	4	2	2
Ages 40-49	4	3	95	3	1	1
Ages 50-59	3	2	95	2	1	1
Ages 60-69	3	1	92	3	5	2
Ages 70-79	2	2	92	3	6	3
Ages 80+	0	0	80	10	20	10

Table 21. The proportion of active small game hunters that indicated that they hunted for released pheasants on a wildlife management area.^a

^aIn 2021, an estimated 224,284 ± 10,165 people hunted small game in Michigan. Farm-reared pheasants were released on 9 public wildlife management areas in 2021.

· · · · ·	Yes	Yes	No	No	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL
Active small game hunters	24	2	73	2	3	1
Males hunters	25	2	72	2	3	1
Female hunters	17	10	79	11	4	5
Completely rural hunters	22	9	73	10	5	5
Mostly rural hunters	25	4	72	4	3	1
Mostly urban hunters	26	3	71	3	3	1
New buyers ^b	5	6	93	7	2	3
Repeat buyers	25	2	72	2	3	1
Ages 1-9	0	0	100	0	0	0
Ages 10-19	17	10	80	11	3	6
Ages 20-29	18	7	80	7	2	2
Ages 30-39	23	7	75	7	1	2
Ages 40-49	24	7	75	7	1	1
Ages 50-59	21	4	78	4	1	1
Ages 60-69	31	4	65	5	4	2
Ages 70-79	24	5	70	6	6	3
Ages 80+	18	10	64	12	18	10

Table 22. The proportion of active small game hunters that indicated that they were aware that farm-reared pheasants were released on 9 public wildlife management areas in 2021.^a

^aIn 2021, an estimated 224,284 ± 10,165 people hunted small game in Michigan. Farm-reared pheasants were released on 9 public wildlife management areas in 2021.

					· · · · · ·		1	
	Less likely	Less likely	Neither	Neither	More likely	More likely	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Active small game hunters	9	2	73	2	13	2	5	1
Males hunters	9	2	73	2	14	2	4	1
Female hunters	8	11	75	15	12	11	4	5
Completely rural hunters	16	10	67	11	12	7	5	5
Mostly rural hunters	10	3	73	4	12	3	5	2
Mostly urban hunters	9	2	73	3	15	3	4	1
New buyers ^b	4	5	82	13	11	12	4	5
Repeat buyers	9	2	73	2	14	2	4	1
Ages 1-9	0	0	100	0	0	0	0	0
Ages 10-19	1	2	81	11	14	9	5	6
Ages 20-29	10	7	68	11	22	10	1	2
Ages 30-39	6	5	76	8	17	7	1	2
Ages 40-49	4	3	77	8	17	7	2	2
Ages 50-59	5	2	77	5	16	4	3	2
Ages 60-69	12	3	72	4	11	3	6	2
Ages 70-79	18	6	67	6	8	3	7	3
Ages 80+	25	11	46	13	7	7	21	11

Table 23. The proportion of active small game hunters that indicated that they were more or less likely to hunt pheasants in 2021 because farm-reared pheasants were released on the 9 public wildlife management areas.^a

^aIn 2021, an estimated 224,284 ± 10,165 people hunted small game in Michigan. Farm-reared pheasants were released on 9 public wildlife management areas in 2021.

	Support	Support	Neither	Neither	Oppose	Oppose	No answer	No answer
Group	%	95% CL	%	95% CL	%	95% CL	%	95% CL
Active small game hunters	71	2	21	2	5	1	3	1
Males hunters	71	2	21	2	5	1	3	1
Female hunters	67	13	27	12	3	4	3	4
Completely rural hunters	68	11	23	10	4	4	5	5
Mostly rural hunters	70	4	22	4	6	2	2	1
Mostly urban hunters	71	3	20	3	5	2	3	1
New buyers ^b	72	13	25	12	2	3	2	3
Repeat buyers	71	2	21	2	5	1	3	1
Ages 1-9	70	49	0	0	0	0	30	49
Ages 10-19	64	14	33	13	0	0	3	6
Ages 20-29	71	10	19	8	8	7	2	2
Ages 30-39	80	7	15	6	3	3	2	2
Ages 40-49	79	6	15	5	5	3	1	1
Ages 50-59	80	5	15	4	4	2	1	1
Ages 60-69	65	5	25	4	6	2	4	2
Ages 70-79	63	6	26	6	7	3	4	2
Ages 80+	50	13	25	11	11	8	14	9

Table 24. The proportion of active small game hunters that supported or opposed releasing farm-reared pheasants for hunting on public wildlife management areas.^a

^aIn 2021, an estimated 224,284 ± 10,165 people hunted small game in Michigan. Farm-reared pheasants were released on 9 public wildlife management areas in 2021.



Figure 1. Regions used to summarize the survey data. Region boundaries in the Lower Peninsula did not match the small game management hunting zones.



Figure 2. Estimated number of small game hunters in Michigan, 1954-2021 (estimate of the number of people that went afield). No estimates were available for 1984, 2012, 2014, 2016, 2018, and 2019.



Figure 3. Estimated number of hunters (first column), harvest (middle column), and hunting effort (third column) in Michigan during the small game hunting seasons, 1954-2021. No estimates were available, or no seasons existed during years when no data are plotted.



Figure 3 (continued). Estimated number of hunters (first column), harvest (middle column), and hunting effort (third column) in Michigan during the small game hunting seasons, 1954-2021. No estimates were available, or no seasons existed during years when no data are plotted.



Figure 3. (continued) Estimated number of hunters (first column), harvest (middle column), and hunting effort (third column) in Michigan during the small game hunting seasons, 1954-2021. No estimates were available, or no seasons existed during years when no data are plotted.



Figure 4. Estimated number of small game hunters in Michigan, 1954-2021 (estimate of the number of people that went afield) and number of people participating in put-take pheasant hunts (1973-1983). The numbers of put-take pheasant hunters were estimated for 1973-1974 (Janson 1975, Janson and Anderson 1976), while numbers of hunters during 1975-1983 were tallies of annual put-take permits sold (DNR, unpublished data). Thus, the estimates of put-take hunters during 1973-1975 and 1976-1983 periods are not directly comparable. No estimates of small game hunters or put-take pheasant hunters were available for 1984.



Figure 5. Estimated harvest per effort in Michigan during the small game hunting seasons, 1954-2021. No estimates were available, or no seasons existed during years when no data are plotted.



Figure 6. Estimated proportion of active small game hunters that indicated that they were more or less likely to hunt pheasants because of the pheasant hunting license, summarized by age group.



Figure 7. Estimated proportion of active small game hunters that indicated that they were more or less likely to hunt pheasants in 2021 because farm-reared pheasants were released on the nine public wildlife management areas and the proportion that supported releasing farm-reared pheasants for hunting on the public wildlife management areas, summarized by age group.

APPENDIX A

2021-2022 Small Game Harvest Questionnaire

MICHIGAN DEPARTMENT OF NATURAL RESOURCES, WILDLIFE DIVISION PO BOX 30030 LANSING MI 48909-7530 **2021-2022 UPLAND GAME HARVEST REPORT** This information is requested under authority of Part 435, 1994 PA 451, M.C.L. 324.43539.





It is important that you complete and return this questionnaire even if you did not hunt or harvest any animals. Report only <u>your</u> hunting activities and the animals that <u>you</u> harvested. Do not report any game taken on a licensed shooting preserve.

1. Did you attempt to hunt upland small game species in Michigan during 2021-22?

¹ Yes. Please complete the table below.

² No. Skip to Question #7.

SPECIES (Check box if you hunted during the season.)	COUNTY HUNTED (List the counties hunted on separate lines.)	NUMBER OF DAYS HUNTED (Include all days hunted, even if you did not harvest anything.)	TYPE OF LAND	NUMBER OF ANIMALS TAKEN
• X Example	1 Jackson	5	¹ X Private ² Public ³ Both	12
 Pheasant (Do not count birds taken on a licensed shooting preserve) 	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	
² Ruffed Grouse	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	
³ Uoodcock	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	
⁴ Cottontail Rabbit	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	
⁵ Snowshoe Hare	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	
⁶ 🗌 Squirrel	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	
⁷ 🗌 Crow	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	
⁸ Quail (Portions of the Southern Lower Peninsula)	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	
9 🗌 Coyote	1 2 3		1 Private 2 Public 3 Both 1 Private 2 Public 3 Both 1 Private 2 Public 3 Both	

2. If you hunted rabbits, how many days did you rabbit hunt in each month?

3. If you hunted squirrels, how many days did you squirrel hunt in each month?

	September	October	November	December	January	February	March
Report Days							
		Ques	tions are con	tinued on th	e back		

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4. What was the provide the providence of the second secon	rimary small gar	ne species y	ou soug	ht durin	g the pa	ast year?	
¹ Pheasant	² Ruffe	d Grouse 3	Woodco	ck 4	Cotto	ntail rabbi	t
5 Snowshoe ha	ire 6 🗌 Squirr	rel 7	Crow	8	Quail		
9 Coyote							
5. During the last hunting season dissatisfied yo for the <u>primary</u>	upland small g n, indicate how u were with the species you hu	ame satisfied or following unted.	/ery Satisfied	Somewhat Satisfied	Veutral	Somewhat Dissatisfied	/ery Dissatisfied
a. The amount	of small game s	een.	1	2	3	4	5
b. Number of s	mall game harve	ested.	1	2	3	4	5
c. Number of d	ays in the huntin	ig season.	1	2	3	4	5
d. Your overall	hunting experier	nce.	1	2	3	4	5
locations where grouse or wood	hunters can hun cock at a GEMS	in 2021?	d woodc	ock. Di	d you h	unt ruffe	d
6a. If you hun GEMS in 2	ted ruffed grous 2021, how many	e or woodco days did yo	ock at a ou hunt'	?			
6b. If you hun GEMS in 2 located in	ted ruffed grous 2021, which cou 1?	e or woodco inty was ead	ck at a ch GEMS	6		C	OUNTIES HUNTED
7. In 2021, a pheas pheasants on a enrolled in the H pheasant huntir	sant hunting lic ny public land i lunting Access ng license?	ense costing n the Lower Program (H	g \$25 wa Penins AP)? W	as requ ula or o /ere you	ired to I n any p I aware	nunt rivate la of this r	nds iew
¹ Yes	² 🗌 No						
8. Were you more pheasant huntir	or less likely to ng license?	hunt pheasa	nts in 20)21 beca	ause of t	he new	
¹ Less likely	² Neith	er more nor l	ess likel	y ³ [More	likely	
9. In 2021, farm-re areas. Did you a during 2021?	ared pheasants attempt to hunt	were releas the stocked	sed on 9 pheasa	public nts on	wildlife any of t	manag hese are	ement eas
¹ Yes	² 🗌 No						
10. Were you aware management ar	e that farm-reare eas in 2021? (Se	d pheasants lect one.)	were rel	leased o	on 9 pub	lic wildli	fe
¹ Yes	² 🗌 No						
11. Were you more pheasants were	or less likely to released on the	hunt pheasa 9 public wil	nts in 20 dlife mai)21 beca nageme	ause the nt areas	farm-rea?	ared
	∠ Neith	er more nor l	ess likel	y ∘L		пкеју	
12. How much do y hunting on put	ou support or lic wildlife man	oppose rele agement ar	asing fa eas?	irm-real	red phea	asants f	or
¹ Strongly ² support	Support Support	³ Neither	4 [Oppose	e	⁵ Stroopp	ose
Please return the que	estionnaire in the e	enclosed posta	ige-paid e	envelope	. Thank y	ou for yo	ur help!

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