

FINAL REPORT

2013 HUNTER SURVEY OF PHEASANT MANAGEMENT IN PENNSYLVANIA



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Introduction

Ring-necked pheasants (*Phasianus colchicus*), introduced into Pennsylvania in the early 1890s, increased in number and range through the mid-1900s. Their numbers increased greatly from the 1950s to the early 1970s, when more than 900,000 Pennsylvania hunters pursued this species (Pennsylvania Game Commission, unpublished data). Unfortunately, wild pheasant populations collapsed after the early 1970s, along with other farmland wildlife that depend on grassy and shrubby areas, and they are virtually non-existent today. In 1915, the Pennsylvania Game Commission (PGC) began purchasing and stocking propagated birds, and in 1929 established the first state game farms. Since then, millions of pheasants have been released. Today, pheasant hunting in Pennsylvania is on a put-and-take basis via propagated birds from the PGC's four active game farms and from private sources. Efforts are underway to re-establish huntable wild populations in localized areas through habitat improvements and introduction of wild pheasants from western states with healthy pheasant populations.

Managing wildlife can be a delicate balance of biological and sociological factors. A game-farm pheasant harvest rate study conducted in Pennsylvania in 1998 found that only about half of released pheasants were harvested by hunters, and recommended that percentage of pheasants harvested by hunters could be increased by expanding the either-sex regulation hunting zone, and/or by allocating releases to times and locations where harvest rates were greater. They also recommended conducting a survey of hunters to assess their opinions towards game-farm pheasant management (Diefenbach et al. 2000). The Ring-necked Pheasant Management Plan for Pennsylvania also recommends surveys be conducted at a 5-year interval to assess hunter satisfaction and expectations with the current pheasant management program (Klinger and Reigner 2008).

Past surveys of Pennsylvania hunters have indicated that there was majority support for continuing the PGC's pheasant propagation program, though satisfaction with the program was more evenly split (Luloff et al. 1995, Miller 1998, Duda et al. 2001). Moreover, surveys showed that hunters agreed with increasing the emphasis on the pheasant propagation program and continuation of expenditures.

To assess current hunter attitudes and opinions specifically towards pheasant management, we developed a survey asking recipients questions ranging from hunting tendencies to current pheasant management strategies in Pennsylvania. Herein we present the results of the hunter survey of pheasant management in Pennsylvania.

Methods

Game Take Surveys from 2009 through 2011 indicated that approximately 93,000 (10.3%) of Pennsylvania hunters participated in pheasant hunting in each of those years (Johnson and Boyd 2013). To ensure that we would receive an adequate response from pheasant hunters within budgetary and logistical constraints on sample size, we mined 2009 through 2011 Game Take Survey data and acquired names and addresses of 3,090 hunters that indicated hunting pheasants. We also randomly selected 4,910 survey recipients (2012-13 Pennsylvania hunting license holders) from the Pennsylvania Automated License System (PALS) for a total of 8,000 survey recipients.

We designed the survey instrument to assess hunter opinions and attitudes toward pheasant management in Pennsylvania. Further, the survey instrument could be answered by pheasant hunters and those that did not participate in pheasant hunting in Pennsylvania. Therefore, we can assess why hunters do or do not participate in pheasant hunting, property types hunted, hunter avidity, and hunter satisfaction, among other topics (Appendix A).

We launched the survey in March 2013 with a mailed invitation to complete the survey via the online PGC survey system. Two weeks later, we mailed a reminder postcard to complete the survey online to all survey recipients. Eleven days after the reminder postcard was sent, we mailed out a paper survey with postage-paid envelope to non-respondents. One month later, we mailed a final paper survey to non-respondents.

Where appropriate, we examined if responses from hunters from the Game Take Survey pool of survey recipients (GTS) were similar to those randomly selected from the PALS database (RDM). If responses from GTS significantly differed from those of RDM, we report the results from RDM respondents only. If GTS and RDM responses were similar, we report combined results. Depending on the type of data, we used chi-square, Fisher's Exact, t-test, and analysis of variance with Duncan's New Multiple Range test, with an alpha of 0.05 for all tests.

Results

Of the 8,000 survey invitations that were mailed, 265 were undeliverable or delivered to deceased license holders. We received 4,810 responses (62.2% corrected response rate). Of these, 2,218 responded via Internet (46.1% of all responses). Of the 3,090 GTS recipients, 2,099 responded (67.9% uncorrected response rate); of the 4,910 RDM recipients, 2,711 responded (55.2% uncorrected response rate). With 4,810 responses, error margin around Likert scale question percentages is $\pm 1.1\%$, and for binary (e.g., Yes/No) questions is $\pm 1.4\%$.

Respondent demographics

Average respondent age was 48.78 ± 18.05 (± 1 SD); ages ranged from 12 to 93 years old; GTS respondents were significantly older (49.96 ± 17.21) than RDM respondents (47.86 ± 18.64). There was a higher proportion of females among RDM respondents (8.22%) than GTS respondents (3.24%; $\chi^2 = 50.75$, $df = 1$, $P < 0.01$). Pennsylvania residents comprised 94.76% of respondents; 5.24% were nonresidents.

Pheasant hunting participation

Responses to the initial branching question indicated that 27.61% of all respondents (GTS = 47.39%; RDM = 12.27%) reported hunting pheasants in Pennsylvania in the 2012-13 season (Fig. 1).

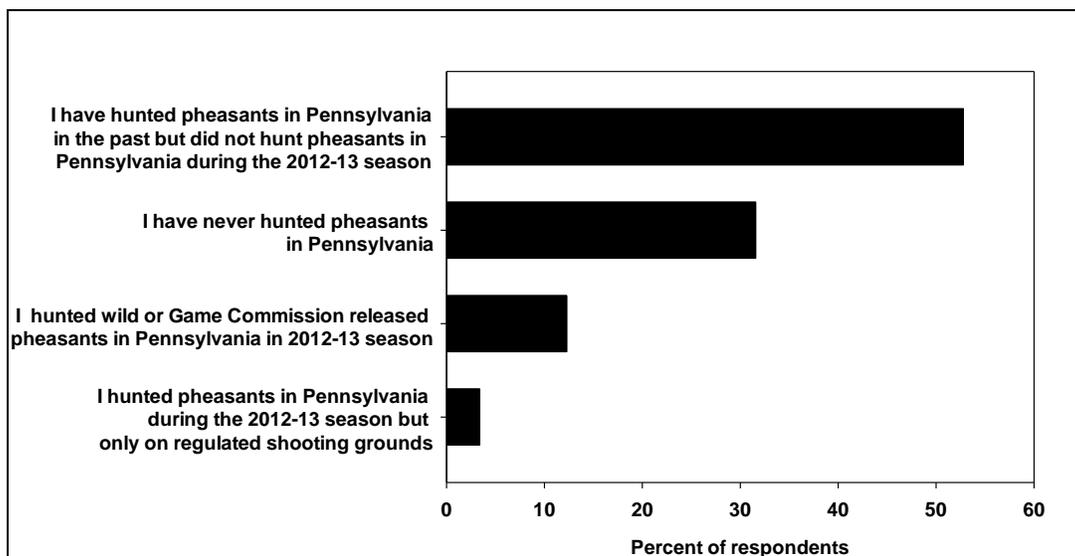


Figure 1. Which best describes your pheasant hunting activity in Pennsylvania? Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders.

Further, 47.40% of all respondents (GTS = 40.46%; RDM = 52.78%) indicated hunting pheasants in Pennsylvania in the past, but not during the 2012-13 season. Overall, 5.94% of hunters (GTS = 9.24%; RDM = 3.38%) indicated hunting pheasants only on regulated shooting grounds. Lastly, 19.05% of all respondents (GTS = 2.90%; RDM = 31.57%) reported never hunting pheasants in Pennsylvania.

The survey captured input from hunters with a wide range of years of pheasant hunting experience. GTS hunters had more years of pheasant hunting experience than RDM respondents ($\chi^2 = 214.94$, $df = 4$, $P < 0.01$).

hunting experience of RDM respondents ranged from <5 years (28.49%), 5–15 years (27.75%), 16–25 years (14.47%), 26–35 years (10.98%), to >35 years (18.31%; Fig. 2).

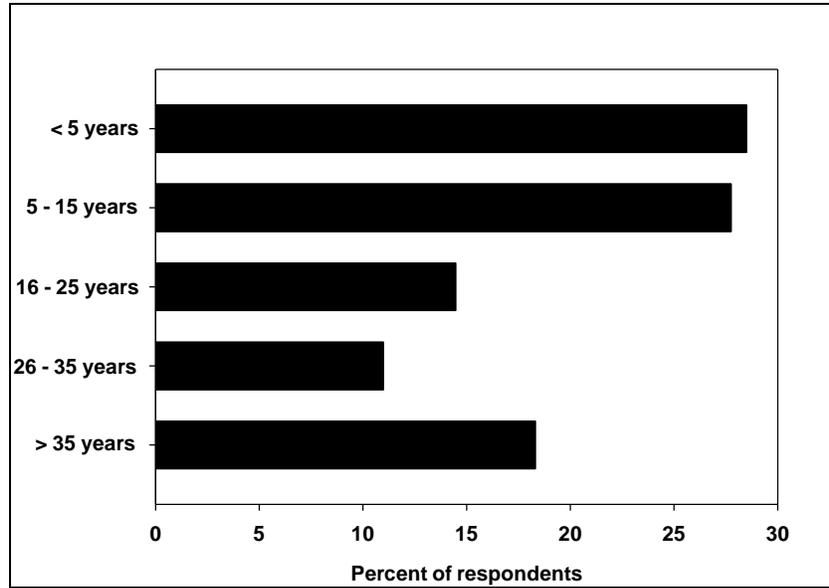


Figure 2. How many years have you hunted pheasants in Pennsylvania? Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders.

Pheasants Forever members comprised 1.54% of survey respondents. That over 56% of RDM respondents indicated hunting pheasants fewer than 15 years may suggest improved recruitment of new pheasant hunters in recent years.

Hunters participated in pheasant hunting in all Wildlife Management Units (WMU). Percentage of respondents indicating hunting pheasants in various WMUs ranged from 0.15% in WMU 5D to 7.50% in WMU 2D. WMUs with cocks-only pheasant hunting regulations were hunted by 34.63% of survey respondents; 65.37% participated in WMUs with either-sex regulations.

Factors for participation in pheasant hunting

The most popular reasons for hunting pheasants in Pennsylvania during the 2012-13 season were “opportunity to hunt with friends or family” (91.20% of all respondents), “pheasant hunting is very important to me” (85.45% of RDM respondents), and “I had time to hunt” (77.39% of all respondents; Fig. 3).

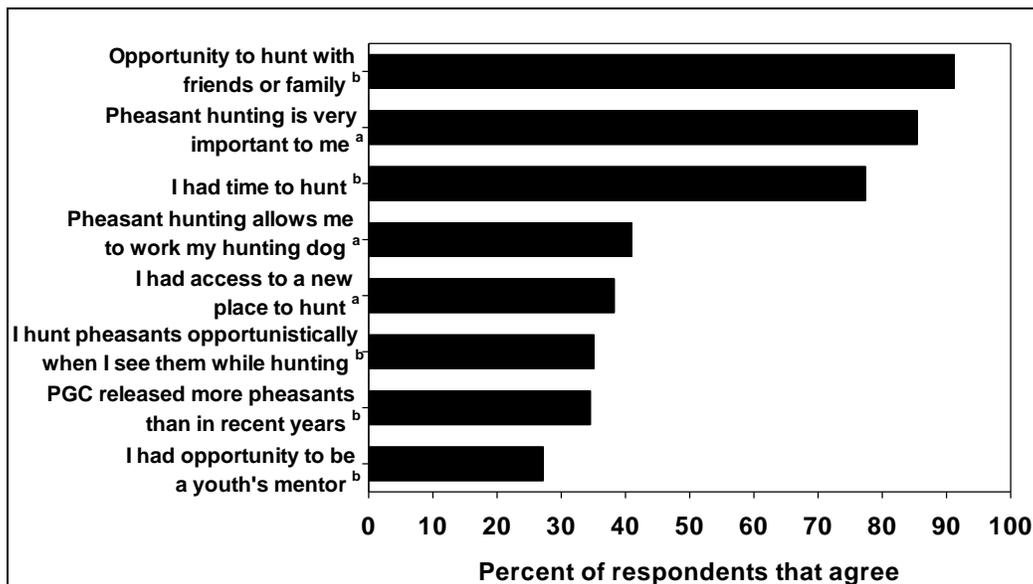


Figure 3. Please indicate your level of agreement or disagreement for the following reasons you hunted pheasants during the 2012-13 season. Includes responses from hunters of wild or Game Commission released pheasants in 2012-13. ^a Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders. ^b Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents.

Level of agreement for remaining reasons were: “pheasant hunting allows me to work my hunting dog(s)” (40.96% of RDM respondents), “I had access to a new place to hunt” (38.24% of RDM respondents), “I hunt pheasants opportunistically when I see them while hunting” (35.08% of all respondents), “the Game Commission released more pheasants than in recent years” (34.53% of all respondents), and “I had the opportunity to be a youth’s mentor” (27.18% of all respondents). Respondents that strongly agreed with the statement “I had time to hunt” were significantly older than those that were neutral, or that somewhat or strongly disagreed with the statement. A higher proportion of GTS respondents than RDM respondents strongly or somewhat agreed that “pheasant hunting is very important to me” and “pheasant hunting allows me to work my hunting dog(s)”. A higher proportion of RDM respondents than GTS respondents strongly or somewhat agreed that “I had access to a new place to hunt”.

Spatio-temporal patterns of pheasant hunting participation and harvest

The most popular property type that respondents indicated hunting pheasants on was State Game Lands (SGL; 79.7% of respondents), followed by private land not in PGC Hunter Access Program (33.0%), other public lands (25.6%), and private lands enrolled in PGC Hunter Access Programs (18.1%; Fig. 4).

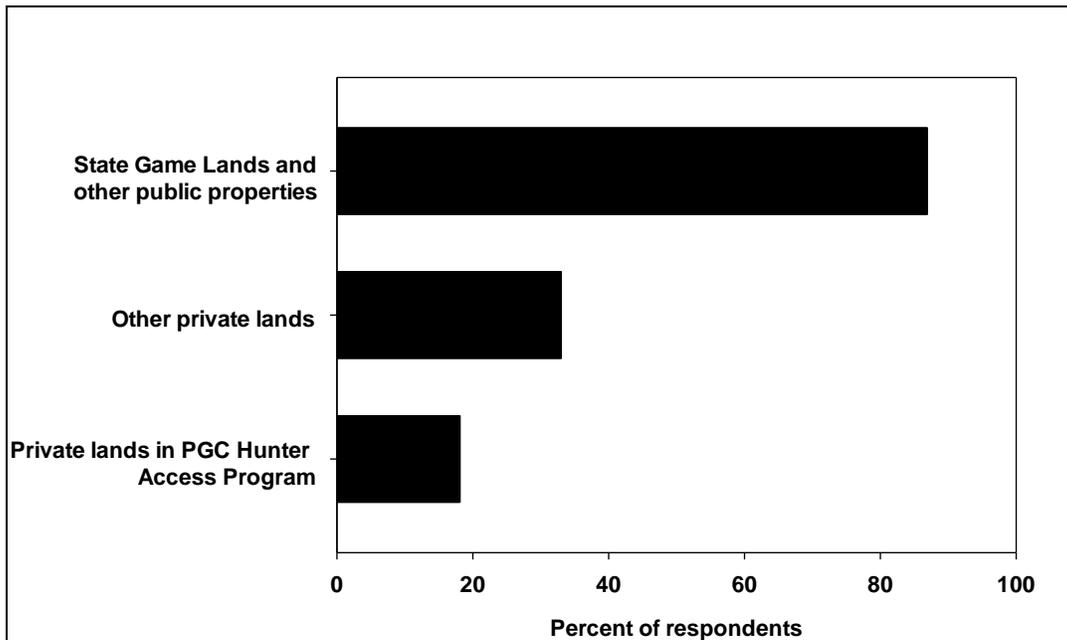


Figure 4. Percent of hunters participating in pheasant hunting on various property types in Pennsylvania, 2012-13. Includes responses from hunters of wild or Game Commission released pheasants in 2012-13. Note percentages total more than 100% because respondents could indicate more than one property type.

Similarly, most pheasant hunter effort (i.e., days of pheasant hunting) was expended on SGLs (57.3%), followed by private land not in PGC Hunter Access Program (19.2%), other public lands (14.1%), and private lands enrolled in PGC Hunter Access Programs (9.5%). Of harvested pheasants, 62.3% were harvested on SGLs, 16.6% were harvested on private land not in PGC Hunter Access Program, 11.6% were harvested on other public lands, and 9.5% were harvested on private lands enrolled in PGC Hunter Access Programs. During the 2012-13 pheasant hunting season, PGC stocked 77.3% of pheasants on SGL and other public lands and 22.7% on private lands enrolled in PGC Hunter Access Programs (PA Game Commission, unpublished data).

We asked respondents to report how many pheasants they harvested throughout the 2012-13 pheasant season (Junior Hunt through winter). Of the total number of pheasants harvested (percent of total pheasants stocked by PGC in 2012 in parentheses), 3.6% (7.6%) were harvested during the Junior Hunt, 13.2% (27.5%) were harvested on opening day, 24.4% (28.0%) were harvested during the first week, 20.4% (18.1%) were harvested in the second week, 14.9% (8.1%) were harvested during the third week, 9.8% (7.4%) were harvested during the fourth week, 6.7% (0.0%) were harvested during the fifth week, and 7.1% (3.4%) were harvested during the winter season (Fig. 5).

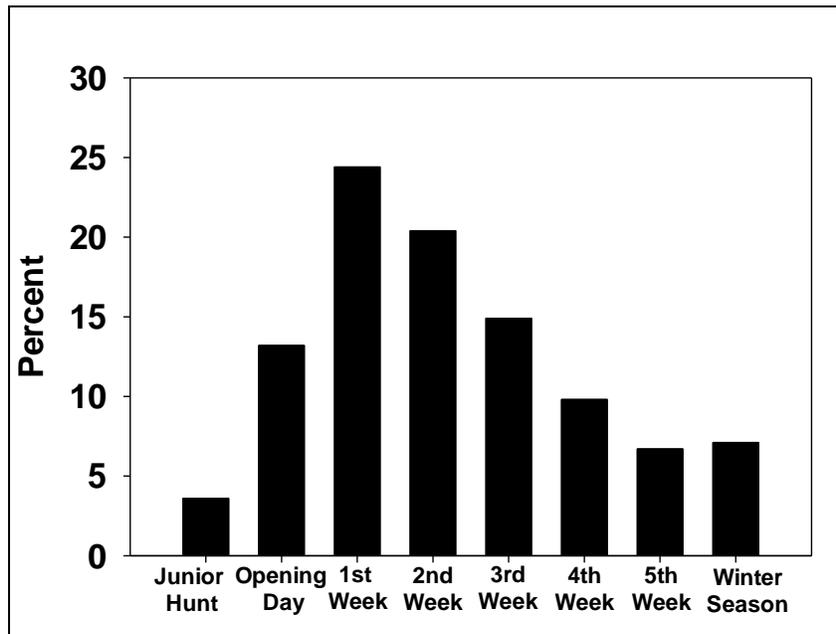


Figure 5. Percent of total PGC stocked pheasants harvested during the 2012-13 season, as calculated from harvests reported by survey respondents. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

Compared to percent of total pheasants stocked, higher harvest percentages after the first week of the season indicate that some pheasants not taken in the week of their release are being taken in later weeks. Particularly noticeable is the harvest indicated in the 5th week of the season, when pheasants were not stocked.

Pheasant hunter satisfaction

A higher proportion ($\chi^2 = 12.953$, $df = 4$, $P = 0.01$) of GTS respondents (48.80%) than RDM respondents (41.87%) were very or somewhat satisfied with pheasant hunting in Pennsylvania for the 2012-13 season (Fig. 6).

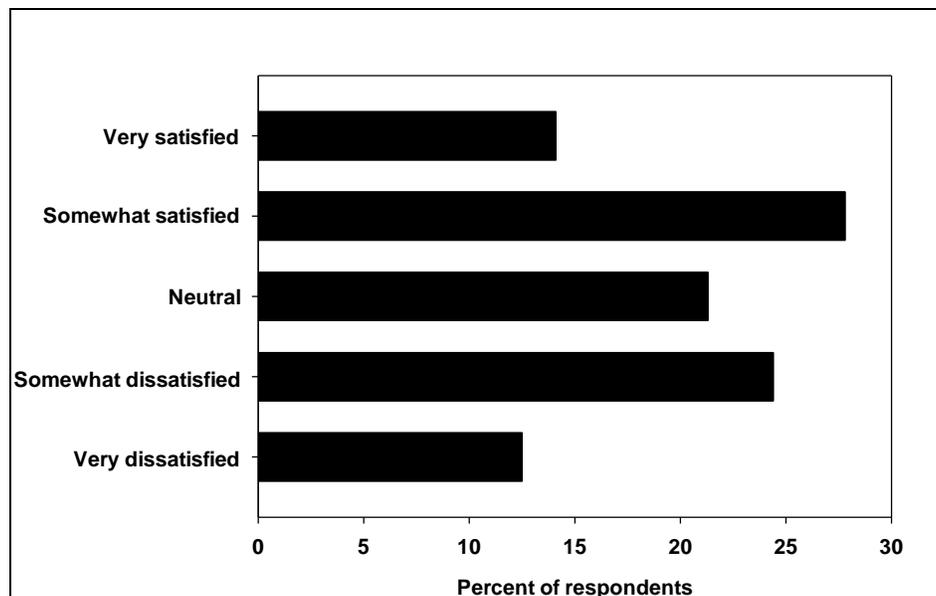


Figure 6. Your overall satisfaction with pheasant hunting in Pennsylvania for the 2012-13 hunting season. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders that hunted wild or Game Commission released pheasants in 2012-13.

Though hunting effort was similar among hunters with different levels of satisfaction, number of pheasants harvested per day was higher ($F = 16.79, P < 0.01$) for very satisfied ($0.95 \text{ pheasants} \pm 0.62$) and somewhat satisfied (0.77 ± 0.62) than for those hunters that were somewhat dissatisfied (0.39 ± 0.48) or very dissatisfied (0.19 ± 0.28). Satisfaction was similar ($\chi^2 = 3.633, df = 4, P = 0.46$) among those that hunted pheasants in either-sex (41.14% satisfied) and cocks-only (42.01%) WMUs. For comparison, in the Game Commission’s 2011 Fall Hunter Survey, 46% of fall turkey hunters rated their fall turkey hunting experience as good or very good (Casalena and Johnson 2013). In the 2011 Pennsylvania Waterfowl Hunter Survey, 65% of duck hunters were satisfied or very satisfied with their duck hunting experience in Pennsylvania, and 77% of goose hunters were satisfied or very satisfied with their goose hunting experience (Jacobs et al. 2012)

Compared to when respondents started pheasant hunting, 21.45% felt their pheasant hunting experience was much better or a little better in 2012-13; 58.51% felt their pheasant hunting experience was a little worse or much worse in 2012-13. The disparity was more pronounced among the more experienced pheasant hunters; 72.35% and 64.35% of respondents that started pheasant hunting >35 and 26–35 years ago, respectively, felt their experience was a little worse or much worse in 2012–13 (Fig. 7), whereas 42.48% and 23.69% of respondents that started pheasant hunting 5–15 years ago and < 5 years, respectively, felt their experience was a little worse or much worse in 2012–13 (Fig. 8).

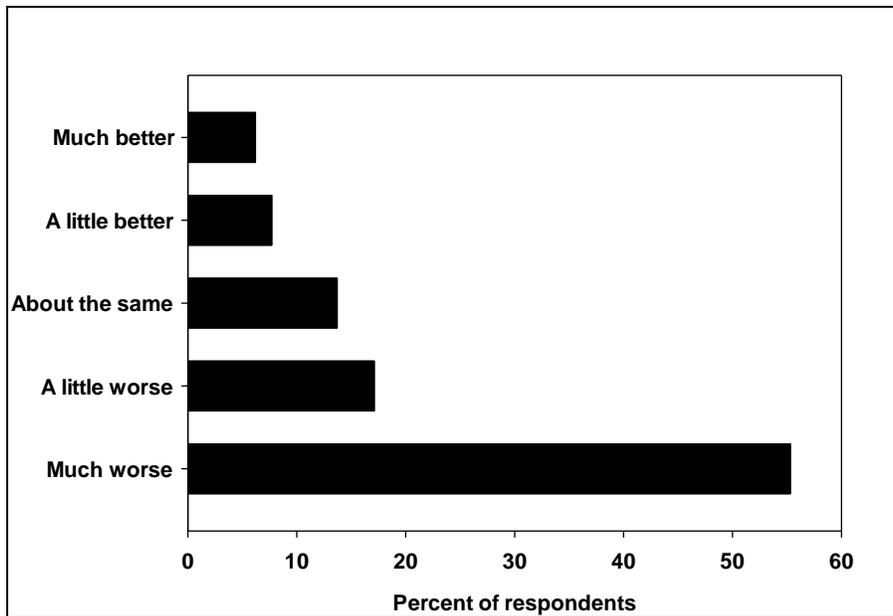


Figure 7. Compared to when you started hunting, how would you rate the quality of your pheasant hunting experience in 2012-13? Includes responses from those indicating hunting pheasants >35 years. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

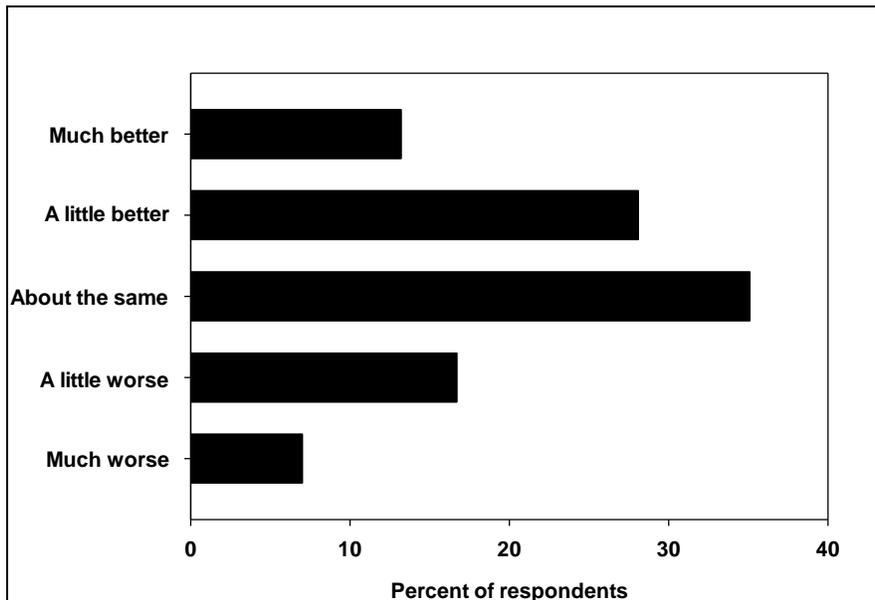


Figure 8. Compared to when you started hunting, how would you rate the quality of your pheasant hunting experience in 2012-13? Includes responses from those indicating hunting pheasants <5 years. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

A higher proportion of GTS respondents (54.45%) than RDM respondents (46.68%) would be very satisfied or somewhat satisfied if pheasant hunting regulations in the WMU they hunted most often stayed the same as in 2012–13. Results from RDM respondents indicate similar levels of satisfaction between those that hunted pheasants in either-sex or cocks-only WMUs if pheasant hunting regulations in the WMU they hunted most often stayed the same as in 2012–13 ($\chi^2 = 2.618$, $df = 4$, $P = 0.62$).

If the Game Commission continues to release 200,000 pheasants for hunting, 66.48% of respondents would be very satisfied or somewhat satisfied (Fig. 9).

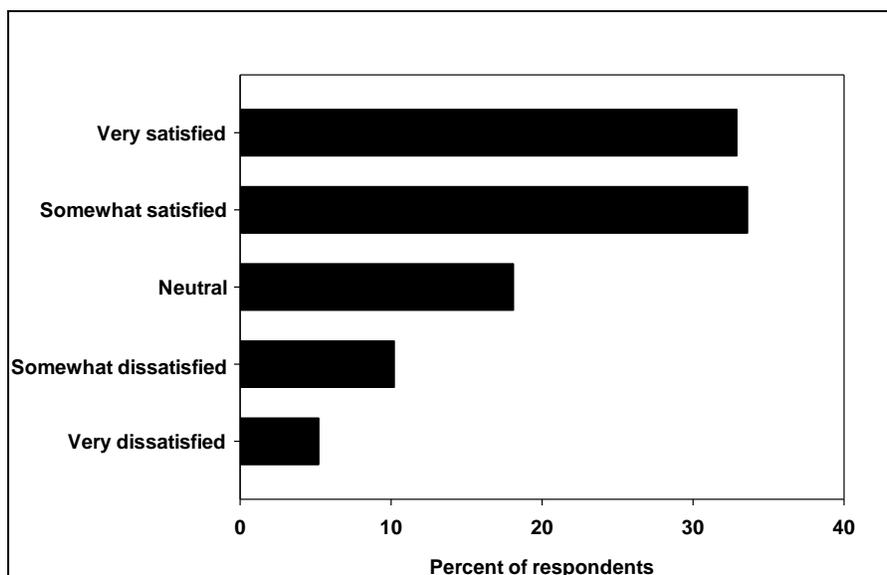


Figure 9. Hunter satisfaction if the Game Commission continues to release 200,000 pheasants for hunting. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

Regarding the hunting behavior of other pheasant hunters, 47.92% of respondents were very satisfied or somewhat satisfied; 22.27% were somewhat dissatisfied or very dissatisfied. Regarding the number of other pheasant hunters, 36.83% of respondents were very satisfied or somewhat satisfied; 20.06% were somewhat dissatisfied or very dissatisfied.

The mode of the number of pheasants that hunters needed to see to be satisfied by a day of pheasant hunting was 4 (20.96% of responses). The mode of the number of pheasants that hunters needed to hear to be satisfied by a day of pheasant hunting was 4 (15.25% of responses). When asked how many pheasants they needed to harvest to be satisfied by a day of pheasant hunting, 41.32% of respondents indicated 0 pheasants, 40.70% indicated 1 pheasant, and 17.98% indicated 2 pheasants.

Attitudes and opinions regarding pheasant populations and season regulation

More GTS respondents (73.89%) than RDM respondents (67.74%) strongly or somewhat agreed that wild pheasant populations do not exist in the WMU where they hunt most ($\chi^2 = 11.696$, $df = 4$, $P = 0.02$); 14.13% of GTS respondents and 16.13% of RDM respondents strongly or somewhat disagreed with the statement (Fig. 10).

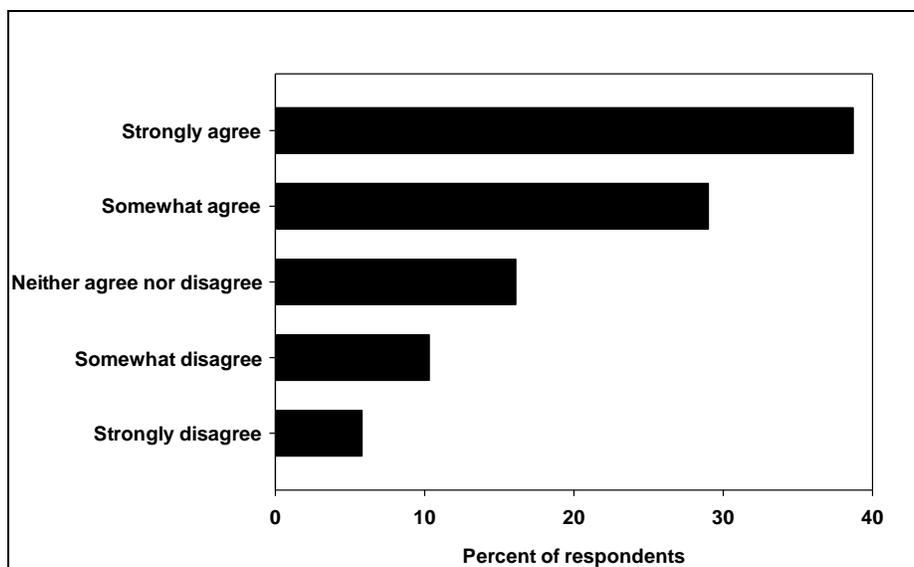


Figure 10. Wild pheasant populations do not exist in the Wildlife Management Unit where I hunt most. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders that hunted wild or Game Commission released pheasants in 2012-13.

In other words, Pennsylvania hunters strongly or somewhat agree that wild pheasant populations do not exist in the WMU where they hunt most by a 6.2:1 margin. Whether they hunted mostly in cocks-only or either-sex WMUs, respondents were similar in terms of agreement that wild pheasant populations do not exist in the WMU where they hunt most.

GTS and RDM respondents strongly or somewhat agreed (58.05%) that cock and hen pheasants should be legal for harvest in WMUs where wild pheasant populations do not exist (Fig. 11). However, respondents hunting in either-sex WMUs were in stronger agreement (62.34%) than those hunting in cocks-only WMUs (48.12%; $\chi^2 = 62.126$, $df = 4$, $P < 0.01$).

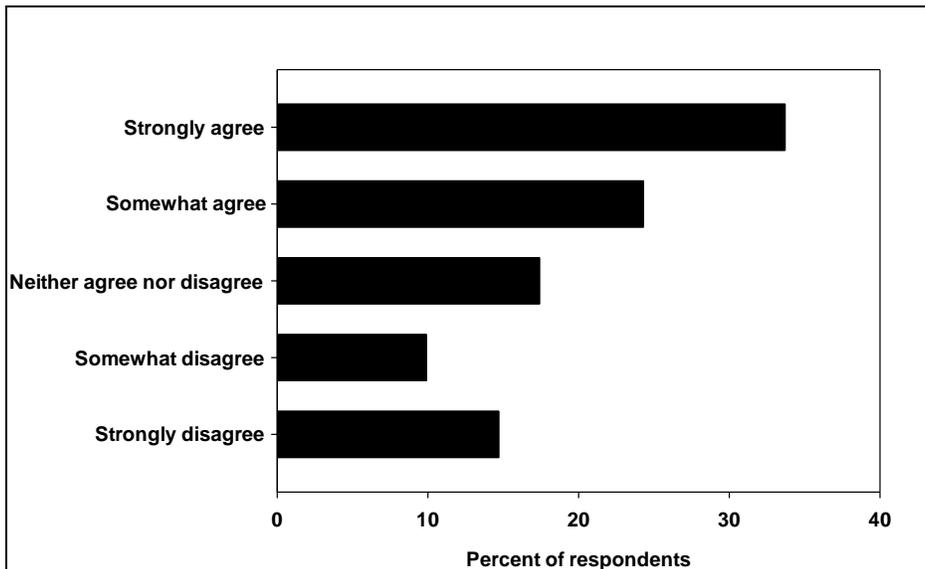


Figure 11. Cock and hen pheasants should be legal for harvest in Wildlife Management Units where wild pheasant populations do not exist. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

GTS and RDM respondents strongly or somewhat disagreed (46.53%) that only cocks should be legal for harvest in all WMUs; though there was stronger disagreement among respondents that hunted in either-sex WMUs (53.10%) than those that hunted in cocks-only WMUs (30.47%; $\chi^2 = 87.042$, $df = 4$, $P < 0.01$). More respondents that mostly hunted pheasants in either-sex WMUs (43.67%) than those in cocks-only WMUs (31.78%) agreed with either-sex hunting in all WMUs ($\chi^2 = 30.644$, $df = 4$, $P < 0.01$). Regardless of whether GTS or RDM respondents hunted pheasants in either-sex or cocks-only WMUs, there was agreement (63.84%) that cocks-only pheasant hunting zones should be used to protect wild pheasant populations (Fig. 12).

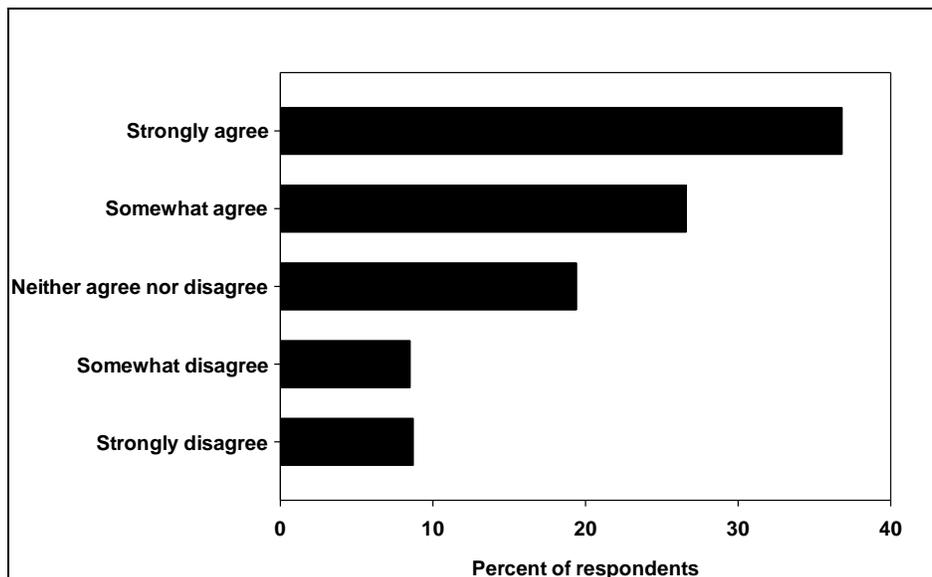


Figure 12. Cocks-only pheasant hunting zones should only be used to protect wild pheasant populations. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

Most pheasant hunters (57.80%) strongly or somewhat agreed that hunters should be allowed to harvest cocks during the winter season (Dec–Feb) in all WMUs (Fig. 13). Hunters that agreed were younger on average (i.e., late-40s) than those that disagreed (i.e., mid-50s; $F = 9.49, P < 0.01$). More pheasant hunters agreed (46.10%) than disagreed (22.81%) that the winter season should only be open in WMUs that do not have wild pheasants (Fig. 14).

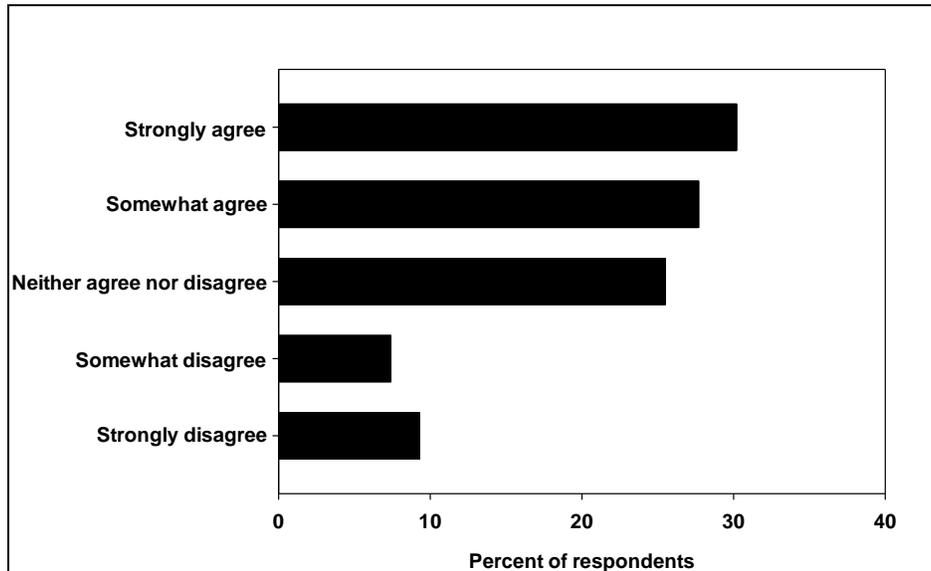


Figure 13. Hunters should be allowed to harvest cocks during the winter season in all Wildlife Management Units. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

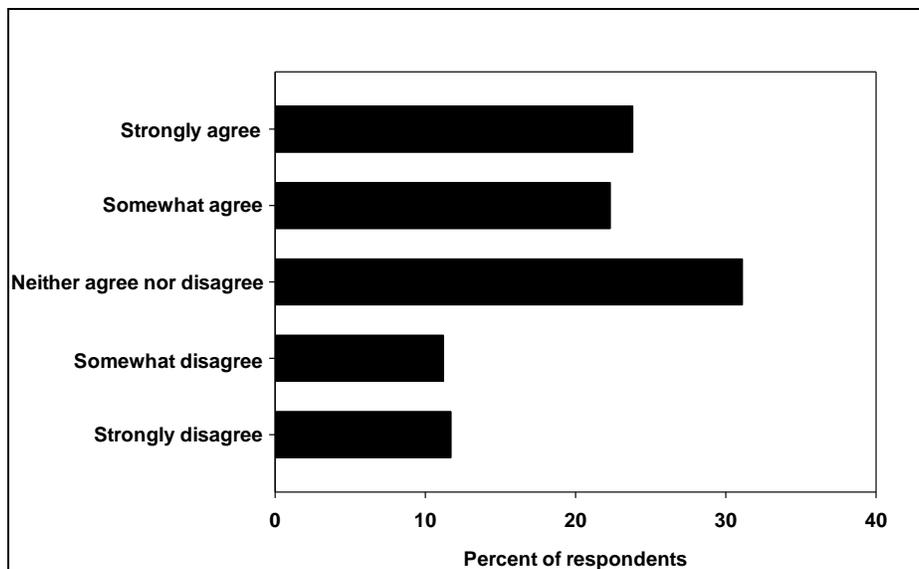


Figure 14. The winter pheasant season should only be open in Wildlife Management Units that do not have wild pheasants. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

Most respondents (60.67%) strongly or somewhat disagreed that the daily bag limit should be increased from 2 to 3 pheasants.

Attitudes and opinions regarding pheasant seasons

Overall, respondents were supportive of the sportsmen's club-sponsored Junior pheasant hunts (81.45% strongly or somewhat agreed), and the Junior pheasant hunting season (84.65% strongly or somewhat agreed). Concerning timing of the start of the pheasant hunting season, more respondents agreed (45.21%) than disagreed (15.91%) that they liked the regular pheasant season starting when it did in 2012 (Fig. 15). However, if the start of the season were to change, more respondents agreed (52.09%) that the season should begin one week earlier (mid-October concurrent with grouse season opener) than agreed (15.90%) that the season should begin one week later (concurrent with wild turkey season opener).

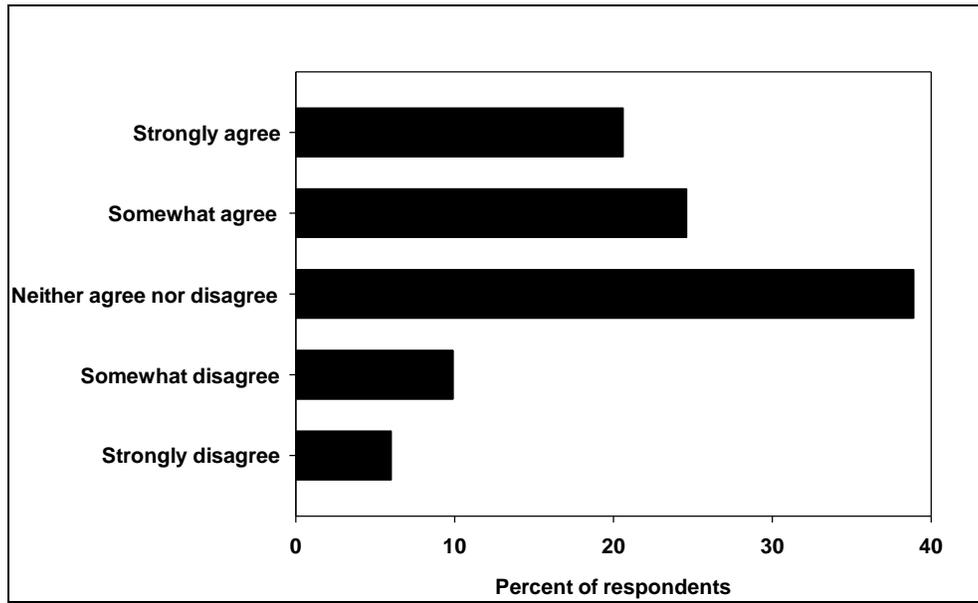


Figure 15. I like the regular pheasant season starting when it did in 2012. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

When asked if Saturdays were the only days they have to hunt pheasants, 43.23% strongly or somewhat agreed, whereas 41.05% strongly or somewhat disagreed. Differences in agreement were found among age groups; those that strongly agreed had an average age in the early-40s and those that strongly disagreed were on average in their late-50s. Moreover, those that strongly agreed that Saturdays were the only days they have to hunt pheasants hunted fewer days ($5.63 \text{ days} \pm 6.73$) and harvested fewer pheasants ($2.94 \text{ pheasants} \pm 5.89$) than those that strongly disagreed ($10.77 \text{ days} \pm 12.45$, $F = 13.34$, $P < 0.01$; 5.66 ± 7.73 pheasants, $F = 6.80$, $P < 0.01$). However, pheasants harvested per day were similar among respondents regardless of their level of agreement that the only days they had to hunt pheasants were Saturdays ($F = 0.91$, $P = 0.45$).

Attitudes and opinions regarding pheasant stocking

Almost half (49.11%) of respondents strongly or somewhat agreed that the Game Commission should continue to stock pheasants as they did during the 2012-13 seasons, i.e., Junior pheasant season, opening day, 4 in-season releases, and once during winter season (either-sex WMUs); 18.26% strongly or somewhat disagreed (Fig. 16).

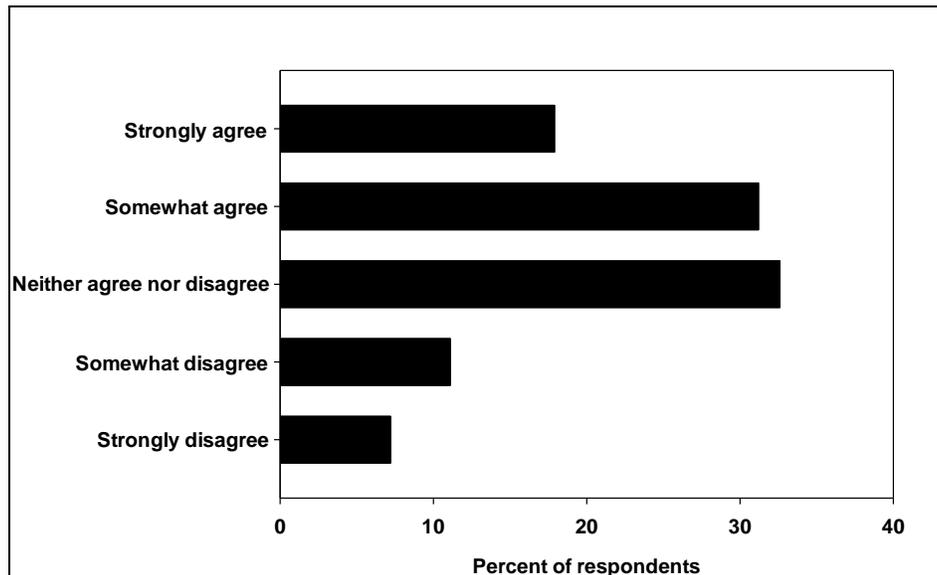


Figure 16. The Game Commission should continue stocking pheasants as they did during the 2012-2013 season. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders and Game Take Survey respondents that hunted wild or Game Commission released pheasants in 2012-13.

A majority (62.72%) of respondents strongly or somewhat agreed that pheasants should be stocked twice each week during the season, rather than just once (releases would be smaller); 12.88% strongly or somewhat disagreed. Most (51.20%) respondents disagreed that more pheasants should be stocked during the winter season and fewer during the fall season; whereas most (59.16%) respondents agreed that more pheasants should be stocked during fall season and fewer during the winter season. When asked if pheasants should not be stocked at all during the winter season, GTS respondents were in stronger disagreement (40.92%) than RDM respondents (30.87%; $\chi^2 = 12.379$, $df = 4$, $P = 0.01$); 26.88% of GTS respondents agreed that pheasants should not be stocked during winter, whereas 28.94% of RDM respondents agreed. Disagreement from GTS respondents mostly (44.42%) was from those that hunt pheasants in either-sex WMUs. More respondents agreed (35.02%) than disagreed (30.03%) that pheasants should be stocked more than once during the winter season (34.94% were neutral).

The majority of pheasant hunters agreed (78.56%) that the Game Commission produces a quality pheasant, regardless of whether they hunted in either-sex or cocks-only WMUs.

Using dogs when pheasant hunting

A higher proportion of GTS respondents (49.16%) than RDM respondents (39.11%) indicated they used dogs when pheasant hunting “usually” or “always” (Fig. 17).

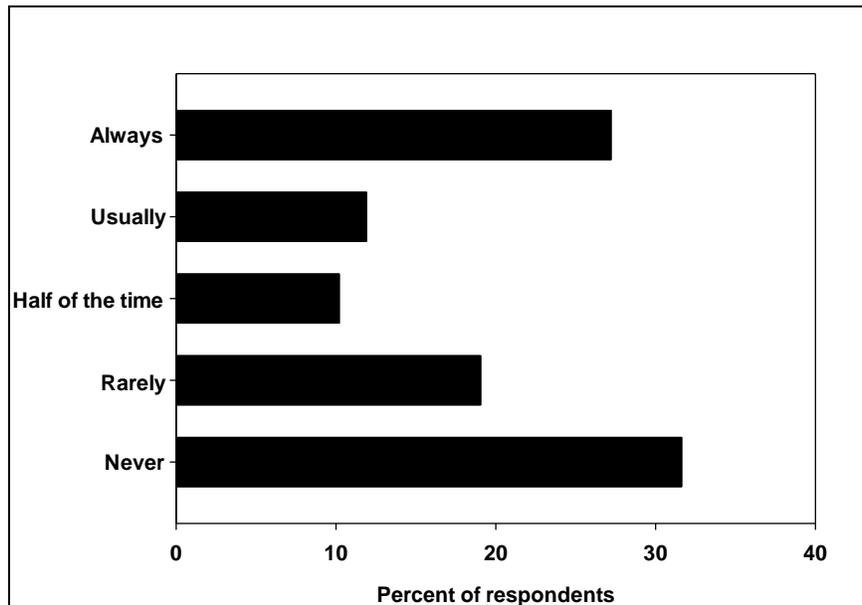


Figure 17. How often do you use a hunting dog when hunting pheasants? Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders that indicated hunting Game Commission released pheasants in Pennsylvania during the 2012-13 season that hunted wild or Game Commission released pheasants in 2012-13.

Though frequency of dog use had no effect ($F = 2.27, P = 0.06$) on number of days RDM respondents hunted pheasants, total pheasants harvested (average = $6.91 \text{ pheasants} \pm 9.73$) was significantly ($F = 9.65, P < 0.01$) higher for hunters who “always” used hunting dogs compared to those that “usually” used dogs (3.66 ± 4.23), used dogs “half of the time” (3.43 ± 5.22), used dogs “rarely” (2.70 ± 3.68), or “never” used dogs (1.50 ± 2.02). Moreover, number of pheasants harvested per day was significantly ($F = 5.50, P < 0.01$) higher for RDM hunters that “always” ($0.73 \text{ pheasants per day} \pm 0.60$) or “usually” (0.72 ± 0.62) used a dog than for RDM hunters that “never” (0.37 ± 0.48) used a dog when pheasant hunting.

Purchasing birds for private release

A higher proportion of GTS respondents (15.91%) than RDM respondents (10.65%; $\chi^2 = 4.77, df = 1, P = 0.03$) purchased birds for private release. The most popular purpose for purchasing pheasants was for hunting and private release (60.0%), followed by regulated hunting grounds (38.3%), and dog training (31.1%); some respondents indicated purchasing birds for multiple purposes.

The average cost per pheasant released for hunting and private release was $\$14.09 \pm 5.71$; average number of birds released was 33.70 ± 73.85 . The average cost per pheasant released for dog training was $\$11.95 \pm 4.95$; average number of birds released was 16.41 ± 18.41 . The average cost per pheasant released on regulated hunting grounds was $\$16.59 \pm 5.23$; average number of birds released was 23.99 ± 28.08 . Average cost per pheasant released for all activities was $\$14.40 \pm 5.64$; average number of birds released was 26.67 ± 53.64 birds.

Factors that may increase the likelihood of participation in wild or PGC stocked pheasant hunting

We asked hunters who had never hunted pheasants, only hunted pheasants on regulated hunting grounds, or just didn’t hunt pheasants in 2012-13 in Pennsylvania what factors may increase the likelihood of their participating in wild or PGC stocked pheasant hunting. Location and quantity of stocked birds were more important factors than factors concerning seasons and regulations. The five factors that most respondents indicated “very important” or “somewhat important” were if “there were more wild pheasants available to hunt”, if “I had more places to hunt pheasants”, if “there were more stocked pheasants available to hunt”, if “pheasants were stocked closer to my home”, and if “I had more personal free time to hunt” (Fig. 18). For hunters who had never hunted pheasants in Pennsylvania, the sixth most important

factor was if “I could hunt pheasants on Sunday”; whereas hunters that had hunted pheasants in the past, but not in 2012-13, the sixth most important factor was if “I knew more about how to hunt pheasants” (this factor was sixteenth in importance for hunters who had never hunted pheasants in Pennsylvania). Perhaps hunters that had hunted pheasants in Pennsylvania in the past, but not in 2012-13, were unsuccessful and felt that knowing more about how to hunt pheasants may improve their chances of success and therefore make them more likely to participate.

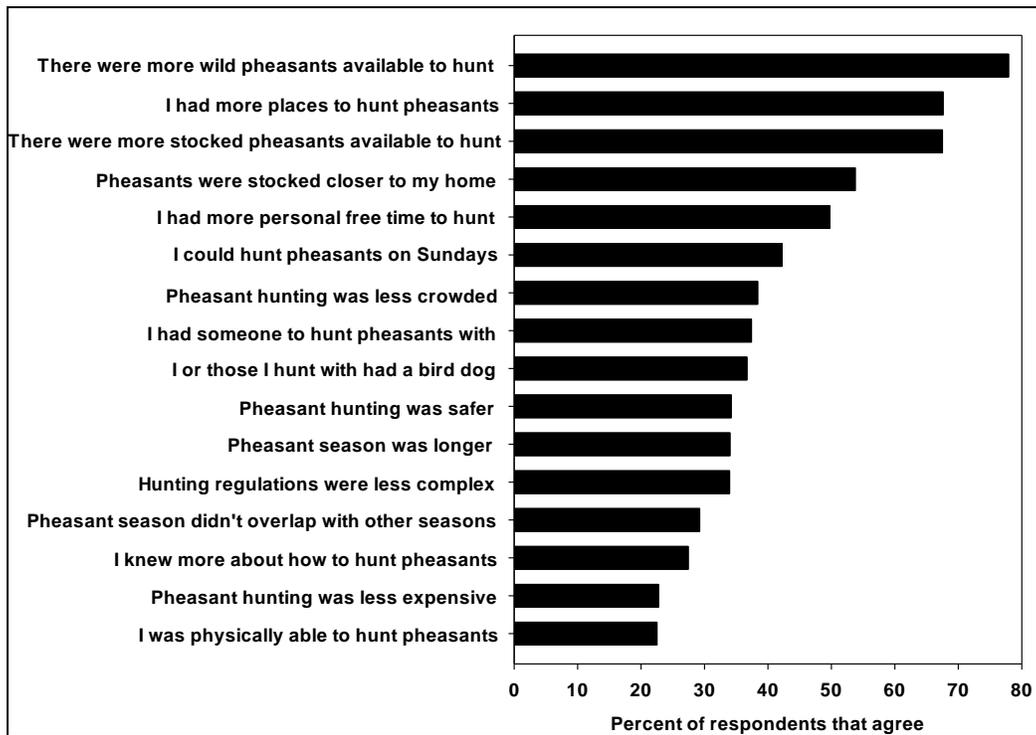


Figure 18. If you are not a pheasant hunter, only hunted pheasants on regulated hunting grounds, or just didn't hunt pheasants in Pennsylvania during the 2012-13 season, please indicate the importance of the following factors that might increase the chance of your participation in wild or Game Commission stocked pheasant hunting in Pennsylvania. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders.

Respondents that indicated that they would be more likely to participate in pheasant hunting if “pheasant hunting was less crowded”, if “I knew more about how to hunt pheasants”, if “pheasant season was longer”, if “I could hunt pheasants on Sundays”, and if “I had more personal free time to hunt” tended to be younger than those that indicated these were unimportant factors. Respondents that indicated that they would be more likely to participate in pheasant hunting if “I was physically able to hunt pheasants” were older than those that indicated it was an unimportant factor.

A higher proportion of female respondents than male respondents indicated that they would be more likely to participate in pheasant hunting if they had more personal free time to hunt, if pheasant season didn't overlap with other hunting seasons, and if they knew more about how to hunt pheasants.

A higher proportion of non-residents than Pennsylvania residents indicated that they would be more likely to participate in pheasant hunting if pheasant season was longer, and if they could hunt pheasants on Sundays.

Respondents hunting pheasants in other states

Pennsylvania residents (2.87%) indicated hunting pheasants in 25 states and Nova Scotia. The most popular states in which to hunt pheasants were South Dakota (22.73% of Pennsylvania residents hunting pheasants outside Pennsylvania), New Jersey (15.91%), and New York (11.36%).

When pheasant hunting in Pennsylvania, most (81.48%) residents drove 1 hour or less to their hunting area. Only 13.47% drove 1 hour to 2 hours, and 5.04% drove more than 2 hours.

Information and education

We asked respondents to indicate the number of the State Game Land they hunted pheasants most often. Of 603 responses, 470 (77.9%) indicated a valid SGL number, 65 (10.8%) indicated a WMU, 43 (7.1%) indicated a county, town, street, or name of an SGL, and 25 (4.1%) indicated “unknown”.

Pheasant hunters received information about where and when pheasants are stocked by the Game Commission through various means; however, 23.14% of pheasant hunters indicated they do not obtain stocking information. For those hunters who do obtain stocking information, the most common sources were other hunters (22.97%), the Game Commission website (17.10%), and paper publications (e.g., Pennsylvania Hunting and Trapping Digest, 13.36%). A higher ($\chi^2 = 9.65$, $df= 1$, $P < 0.01$) proportion of GTS respondents (13.79%) than RDM respondents (10.70%) indicated that their experience was that the Game Commission is predictable in their stocking schedule. Less than 5% of hunters indicated they obtained pheasant stocking information from Game Commission employees (4.27%), “other” sources (3.17%), other hunting-related websites (1.67%), or social media (e.g., Facebook; 1.27%).

We asked respondents to indicate their level of awareness of the Pennsylvania Ring-necked Pheasant Management Plan. Less than 40% of respondents indicated they weren’t aware there is a written plan; 37.23% had heard about the plan; 22.84% indicated reading some or all of the plan. Of hunters that hunted pheasants in the 2012-13 season, 50.48% had read some or all of the plan, 31.22% had heard about the plan, and 18.31% weren’t aware there is a written plan.

Of the respondents that indicated hunting pheasants in Pennsylvania in 2012-13, 66.28% were familiar with the existence of Wild Pheasant Recovery Areas (WPRAs). Overall, 31.99% of RDM respondents were familiar with the existence of WPRAs.

When asked what they believed was the primary cause of the wild pheasant population decline in Pennsylvania, 34.97% of RDM respondents indicated habitat loss, followed by predators (33.06%), not sure (24.14%), pesticides (3.52%), overharvest (2.83%), and disease (1.48%; Fig. 19).

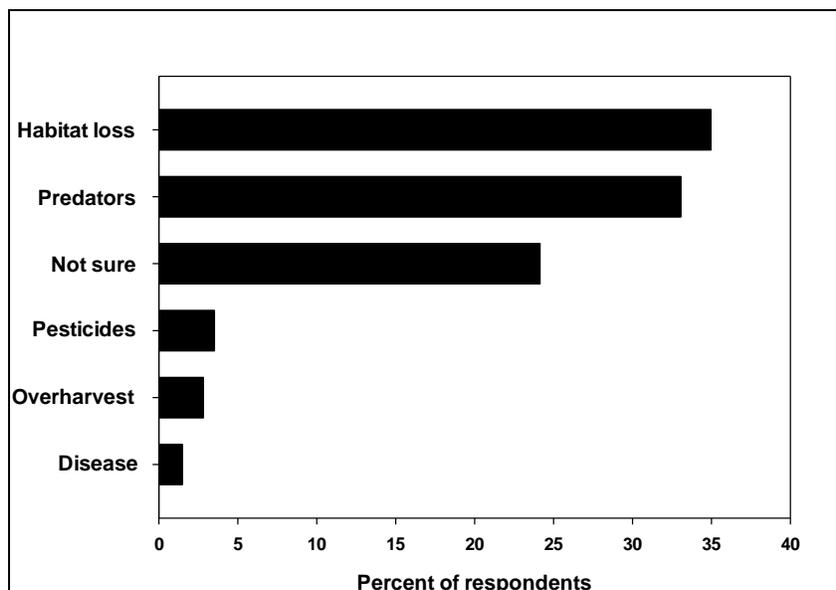


Figure 19. Wild pheasant populations have declined in Pennsylvania. I believe the primary cause of the decline is:. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders.

A higher proportion ($\chi^2 = 14.924$, $df = 4$, $P < 0.01$) of RDM respondents (43.56%) than GTS respondents (34.15%) agreed that stocking game farm pheasants is an effective way to restore wild pheasant populations; 32.01% of RDM respondents and 41.79% of GTS respondents disagreed. Among GTS respondents, a higher proportion ($\chi^2 = 11.124$, $df = 4$, $P = 0.03$) of those that hunt pheasants in either-sex WMUs (35.26%) than in cocks-only WMUs (32.84%) agreed that stocking game farm pheasants is an effective way to restore wild pheasant populations; 39.84% of GTS respondents hunting pheasants in either-sex WMUs and 45.15% in cocks-only WMUs disagreed.

Attitudes and opinions regarding use of PGC funds for various pheasant management options

Overall, Pennsylvania hunters are supportive of PGC efforts to propagate and stock pheasants as well as wild pheasant recovery efforts. PGC continuing to propagate and stock game farm pheasants is strongly or somewhat agreed with by 77.13% of RDM respondents (Fig. 20).

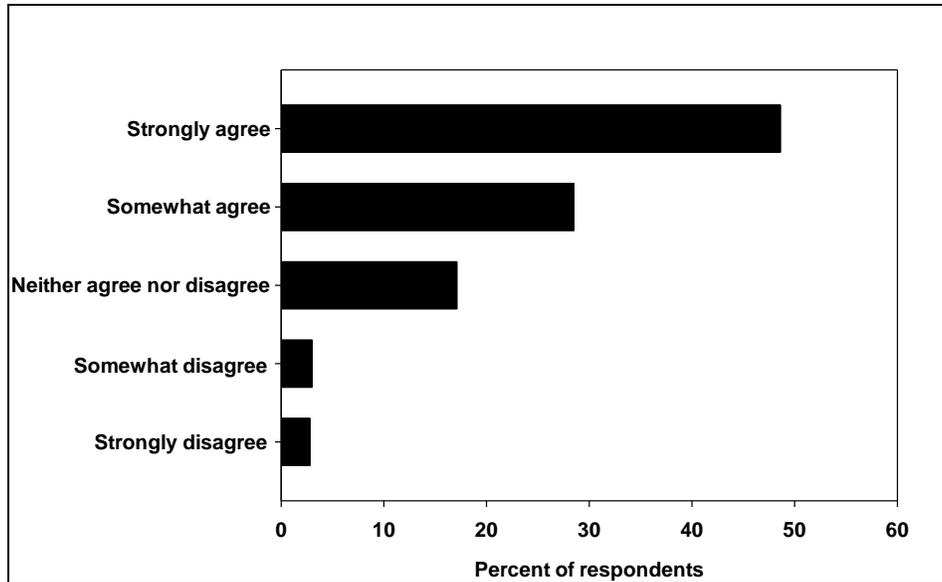


Figure 20. The Game Commission should continue to propagate and stock game farm pheasants. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders.

Moreover, 64.76% of RDM respondents that have never hunted pheasants in Pennsylvania strongly or somewhat agreed with PGC continuing to propagate and stock game farm pheasants. Similarly, 84.41% of RDM respondents strongly or somewhat agreed with the PGC continuing to try to recover wild pheasants in Pennsylvania; 75.81% of RDM respondents that have never hunted pheasants in Pennsylvania strongly or somewhat agreed (Fig. 21).

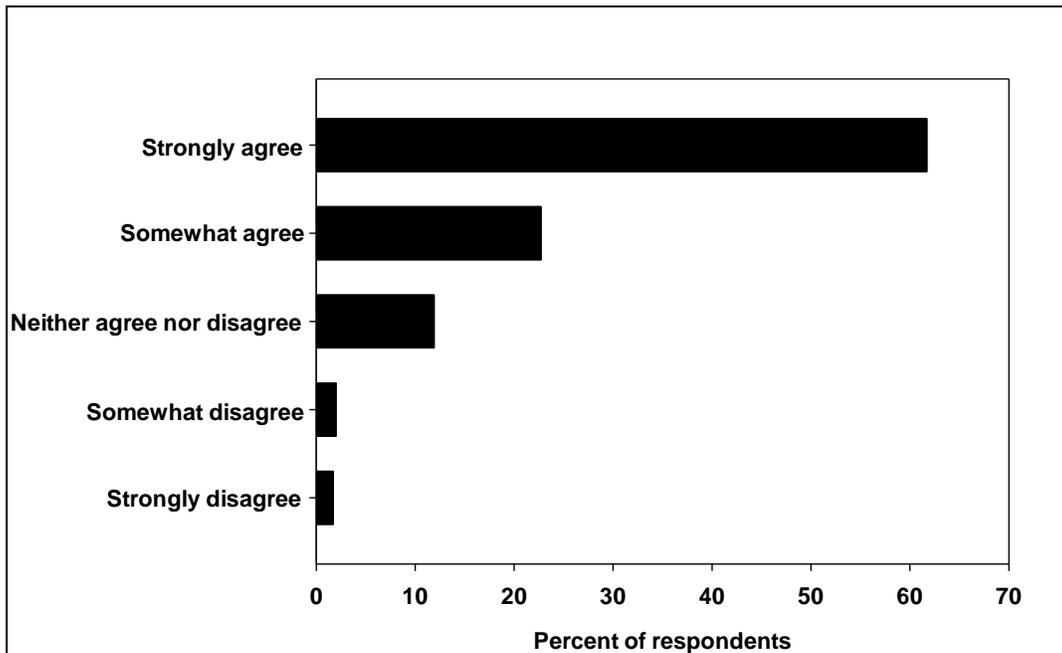


Figure 21. The Game Commission should continue to try to recover wild pheasants in Pennsylvania. Includes responses from randomly drawn 2012-13 Pennsylvania hunting license holders.

When asked if the Game Commission should decrease its focus on pheasant management and reallocate funds to management of other species, 42.53% of RDM respondents strongly or somewhat disagreed; 17.93% of RDM respondents strongly or somewhat agreed. The Game Commission should place even greater emphasis on pheasant propagation and stocking according to 50.21% of RDM respondents; 11.62% of RDM respondents strongly or somewhat disagreed. Further, 51.15% of RDM respondents strongly or somewhat agreed that the Game Commission’s pheasant propagation program should continue to be paid for by all hunters; 33.95% of RDM respondents that have never hunted pheasants in Pennsylvania strongly or somewhat agreed with the statement, whereas 26.79% strongly or somewhat disagreed. The majority (69.95%) of RDM respondents strongly or somewhat agreed that the Game Commission should place even greater emphasis on improving pheasant habitat on farmland. More RDM respondents strongly or somewhat agreed (44.80%) than strongly or somewhat disagreed (33.58%) with requiring hunters to purchase a stamp to help fund the pheasant propagation program. Also, more RDM respondents strongly or somewhat agreed (46.62%) than strongly or somewhat disagreed (32.41%) with requiring hunters to purchase a stamp to help fund wild pheasant restoration.

Because the questions regarding PGC funding of pheasant management options did not require respondents to consider trade-offs in allocating limited funding, we cannot draw inferences from this survey about the importance that Pennsylvania hunters place on pheasant management relative to other PGC priorities. However, it is clear that most hunters (even those that do not hunt pheasants) are supportive of both stocked and wild pheasant continuing to receive management attention from the Game Commission.

Differences between GTS and RDM respondents

Many differences existed in terms of demographics and attitudes and opinions between GTS and RDM respondents. Recall that GTS respondents had hunted pheasants at least one season between 2009 and 2011, i.e., they may be more avid pheasant hunters than RDM respondents, or having responded to the Game Take Survey in the past might make them more likely to respond to the current survey. Indeed, GTS respondents had more years of pheasant hunting experience than RDM hunters, and typically were older males. A higher proportion of GTS respondents than RDM respondents indicated they pheasant hunted because pheasant hunting was very important to them; they more frequently used dogs when hunting pheasants, were more satisfied with their pheasant hunting experience and regulations in their WMU, were more likely to use the same areas to pheasant hunt, and felt the PGC is predictable in their stocking schedule. GTS respondents also were more likely to purchase birds for private release. A higher proportion

of GTS respondents than RDM respondents agreed that wild pheasants do not exist in their WMU, but disagreed that stocking game farm pheasants is an effective way to restore wild pheasant populations.

There is an important lesson for human dimensions survey specialists to be learned from these findings. In order to survey a small subset of a population randomly, a large sample would potentially be necessary to obtain an adequate number of responses from that subset, e.g., reaching 10,000 pheasant hunters, which comprise about 10% of the hunting population, would require randomly mailing to 100,000 hunters. However, using ancillary information from previous surveys that identify a particular subset in a population can provide means to target that subset. However, as we learned in our survey, caution must be used when interpreting results, as there can be differences in responses between a random sample of pheasant hunters and a random sample of hunters in general.

Differences between respondents hunting pheasants in either-sex and cocks-only WMUs

Depending on the issue, attitudes and opinions regarding pheasant management in Pennsylvania differed between respondents that pheasant hunted mostly in either-sex WMUs and those that pheasant hunted in cocks-only WMUs. A higher proportion of respondents hunting pheasants mostly in either-sex WMUs believed that cock and hen pheasants should be legal for harvest where wild pheasants do not exist; though most respondents believed wild pheasant populations do not exist in either-sex or cocks-only WMUs. However, a higher proportion of respondents hunting pheasants mostly in either-sex WMUs did not agree that only cocks should be legal for harvest in all WMUs; rather they supported either-sex pheasant hunting in all WMUs.

Comparison with previous hunter surveys

In 1994, a survey was mailed to 7,597 respondents of the 1993 Game Take Survey (Miller 1998). In 1995, a mixed-mode (telephone and mail) survey of 1,000 Pennsylvania hunters was conducted (Luloff et al. 1995). In 2001, a telephone survey of 1,009 randomly selected Pennsylvania hunters was conducted (Duda et al. 2001). All three surveys contained human dimensions-related questions that assessed attitudes and opinions of Pennsylvania hunters in general, but also had questions concerning the pheasant propagation program.

Though not directly comparable due to slight differences in question wording, in 1994, 24.5% of Pennsylvania hunters rated their satisfaction with the pheasant stocking program as good or excellent, and 75.5% rated it poor or fair. In 1995, 39.3% of all respondents were satisfied with pheasant stocking in Pennsylvania; 39.9% were dissatisfied. Overall hunter satisfaction with 2012-13 pheasant hunting for RDM respondents was 41.9% satisfied, 37.0% dissatisfied.

In 1995, 61% of respondents indicated that pheasant stocking expenditures should increase, 6% indicated expenditures should decrease, and 33% indicated expenditures should remain the same. In 2001, 84% of respondents strongly or moderately supported pheasant propagation and release expenditures; 13% strongly or moderately opposed it. In 2013, 43% of RDM respondents disagreed that the Game Commission should decrease its focus on pheasant management and reallocate funds to management of other species, 18% of RDM respondents agreed, and 40% were neutral.

In 1994, 65% of pheasant hunters agreed that "The Game Commission should place greater emphasis on pheasant propagation"; 7% disagreed and 27% were undecided. In 2013, 66% of GTS respondents agreed that the "Game Commission should place even greater emphasis on pheasant propagation and stocking"; 7% disagreed and 27% were neutral.

In 1994, 44% of Pennsylvania hunters agreed that "those hunters who benefit most from the pheasant program should pay for it"; 33% disagreed and 23% were neutral. In 2013, 51% of RDM respondents agreed that the "Game Commission's pheasant propagation program should continue to be paid for by all hunters"; 19% disagreed and 30% were neutral.

In 1994, 62% of Pennsylvania hunters agreed that “the Game Commission should continue the pheasant propagation program”; 9% disagreed and 29% were neutral. In 2013, 77% of RDM respondents agreed that “the Game Commission should continue to propagate and stock game farm pheasants”; 6% disagreed and 17% were neutral.

Concerning pheasant populations declines, in 1994, 68% of respondents agreed that predators were responsible (33% of RDM respondents in 2013 indicated predators were the primary cause of wild pheasant population decline), and 20% agreed that overharvest of pheasants was a serious problem (3% of RDM respondents in 2013 indicated overharvest was the primary cause of wild pheasant population decline). In 1994, 86% agreed that “Habitat loss is the most serious threat to wildlife today”; 35% of respondents in 2013 indicated that habitat loss is the primary cause of wild pheasant population declines.

In 2001, 66% of Pennsylvania hunters rated the quality of PGC-released pheasants as good or excellent; 34% rated them fair or poor. In 2013, 79% of Pennsylvania hunters indicated agreement that the Game Commission produces a quality pheasant; 5% disagreed and 16% were neutral.

In 2001, 44% of Pennsylvania hunters indicated that 200,000 released pheasants is “about the right amount”, 53% indicated that it was “too low”, and 3% indicated it was “too high”. In 2013, 66% of respondents indicated they would be very satisfied or somewhat satisfied “if the Game Commission continues to release 200,000 pheasants for hunting”, 15% would be somewhat or very dissatisfied.

In 1994, 80% of Pennsylvania pheasant hunters agreed that “more effort should be made to improve pheasant habitat on farmland”; 9% disagreed. In 2013, 80% of GTS respondents agreed that “the Game Commission should place even greater emphasis on improving pheasant habitat on farmland”; 4% disagreed.

In 1994, 56% of Pennsylvania pheasant hunters agreed that “stocking pheasants is effective in building up the bird population”; 23% disagree. In 2013, 34% of GTS respondents agreed that “stocking game farm pheasants is an effective way to restore wild pheasant populations”; 42% disagreed.

“Lengthening the fall rabbit and pheasant seasons by starting them in mid-October, concurrent with the fall squirrel and grouse seasons” was supported by 77% of respondents in 2001. In 2013, 46% of respondents agreed that “I like the regular pheasant season starting when it did in 2012”, 16% disagreed; 39% were neutral.

In 1994, 51% of Pennsylvania pheasant hunters agreed that “Shooting hen pheasants should be illegal throughout all of Pennsylvania”; 29% disagreed and 21% were undecided. In 2013, 41% of respondents agreed that “I support either sex pheasant hunting in all WMUs”; 39% disagreed and 20% were neutral.

“Late pheasant season should be held state-wide” was agreed to by 38% of Pennsylvania pheasant hunters in 1994; 46% disagreed and 15% were undecided. In 2013, 58% of respondents agreed that “Hunters should be allowed to harvest cocks in during winter pheasant season in all WMUs”; 17% disagreed and 25% were neutral.

Management considerations

Wild pheasant populations in Pennsylvania, other than those that are being restored on wild pheasant restoration areas with habitat improvements and transplanted wild birds from South Dakota and Montana, have declined to virtual non-existence. In the Ring-necked Pheasant Management Plan for Pennsylvania 2008-2017 (Klinger and Riegner 2008), numerous databases (USFWS Breeding Bird Survey, Audubon Christmas Bird Count, and the Pennsylvania Breeding Bird Atlas) were summarized and all were consistent with the message that, compared to peak populations in the late 1960s-early 1970s, survey counts after the mid-1990s have flat-lined near zero. There are low counts of birds scattered in fragmented locations across the Commonwealth, but these can likely be attributed to short-term survivors of the Game Commission’s and private propagators annual pheasant releases. For example, the Game Commission annually stocks nearly 20,000 breeders after egg collection quotas are attained in May. Some of these birds survive long enough to nest

and hatch a brood, but these sightings are short-lived, and research and decades of experience indicate that sustainable populations do not result. Private propagators sell or release more than 466,000 pheasants each year in Pennsylvania (Dunn et al. 2008), and the Game Commission stocks another 100,000 to 200,000 pheasants. Some of these pheasants may survive long enough to confound pheasant population surveys in winter or spring.

The majority of pheasant hunters also recognize the severe decline in pheasant numbers, by agreeing to the statement “wild pheasant populations do not exist in the Wildlife Management Unit where I hunt the most” by a 6.2:1 margin. We are pleased with the general understanding and support of our pheasant hunters for pheasant harvest management practices, such as cocks-only hunting and restriction of winter pheasant hunting in areas where wild pheasants exist, and either-sex hunting and a winter season release in areas where wild pheasants don’t exist.

With good agreement among biological data sets and hunter opinion that wild pheasant populations are virtually non-existent in Pennsylvania, we see several benefits to moving to an either-sex pheasant season statewide, excluding wild pheasant restoration areas:

1. Cocks-only zones where wild pheasant populations do not exist are causing a disproportionate number of roosters to be stocked there. Currently, 100% of pheasants stocked in this 27% of the state are roosters, and only 30% of birds stocked in either-sex zones (73% of the state) are roosters. If the either-sex pheasant hunting zone was allowed statewide, then all pheasant hunters would experience an equal 65% of stocked birds being roosters.
2. The entire state would receive the pre-Christmas winter stocking. Currently the cocks-only zone is excluded from this release; the purpose of which is to release surplus hens.
3. Pheasants are produced on our game farms at a 1 male to 1 female sex ratio. Because of an unequal distribution of cocks-only hunting across the state, the Game Commission incurs a significant cost and some pheasant mortality as we ship birds among the farms to supply game farms to meet demand. These costs and mortalities could be avoided with statewide either-sex pheasant hunting.

We understand that hunters would prefer to harvest a rooster than a hen if given the choice. We also understand the results from this study that indicate those hunting in cocks-only zones today would prefer to continue experiencing cocks-only releases. Overall, hunters are equally split in their support of this concept, so an informational program would be prudent before proposing this change.

This survey elucidates many aspects of the Pennsylvania pheasant hunting culture that heretofore had been based mostly on conjecture. It is apparent that there are hunters that regularly hunt pheasants with success, and also those that hunt pheasants infrequently, possibly because of lack of past pheasant hunting success and/or know-how. Most Pennsylvania hunters, regardless of whether or not they hunt pheasants, are supportive of the PGC pheasant propagation program and wild pheasant restoration efforts. Hunters are satisfied with current pheasant bag limits and pheasant hunting regulations. Further, hunters are more satisfied than dissatisfied with their pheasant hunting experience throughout Pennsylvania.

Lastly, to complement this survey, a current pheasant harvest rate study should be conducted similar to that conducted in 1998. Should that research indicate that harvest rates are below 60% goal established in the species management plan (Klinger and Reigner 2008), the opinion obtained in this hunter survey could be used to inform choices among potential management actions to increase harvest rates.

Literature cited

Casalena, M. J., and J. Johnson. 2013. Pennsylvania 2011 Fall Wild Turkey Hunter Survey. Pennsylvania Game Commission, Harrisburg, Pennsylvania, USA.

Diefenbach, D. R., C. F. Riegner, and T. S. Hardisky. 2000. Harvest and reporting rates of game-farm ring-necked pheasants. *Wildlife Society Bulletin* 28:1050–1059.

Duda, M. D., P. E. De Michele, S. J. Bissell, P. Wang, J. B. Herrick, A. Lanier, W. Testerman, and J. Yoder. 2001. Pennsylvania hunter survey. Report prepared for Pennsylvania Game Commission by Responsive Management, Harrisonburg, Virginia, USA.

Dunn, J. P., T. Librandi-Mumma, and C. F. Riegner. 2008. Pennsylvania Game Bird Production and Release Survey. Pennsylvania Game Commission, Harrisburg, Pennsylvania, USA.

Jacobs, K., I. Gregg, J. Dunn, and C. Jagnow. 2012. 2011 Pennsylvania Waterfowl Hunter Survey Report. Pennsylvania Game Commission, Harrisburg, Pennsylvania, USA.

Johnson, J. B., and R. C. Boyd. 2013. Game Take, Furtaker, Mentored Youth Hunter, Spring Turkey Hunter, Mentored Youth Spring Turkey Hunter Surveys. Annual Job Report 11101. Pennsylvania Game Commission, Harrisburg, Pennsylvania, USA.

Klinger, S. R., and C. F. Riegner. 2008. Ring-necked pheasant management plan for Pennsylvania 2008-2017. Pennsylvania Game Commission, Harrisburg, Pennsylvania, USA.

Luloff, A. E., S. Jacob, J. Finley, and S. Jones. 1995. Results of February, 1995 Pennsylvania Game Commission Hunter Survey. Unpublished report prepared for Pennsylvania Game Commission, Harrisburg, Pennsylvania, USA.

Miller, C. A. 1998. Untitled analysis and summary of 1994 hunter survey. Report prepared by University of Idaho, College of Forestry, Wildlife, and Range Services, Department of Forest Resources, Moscow, Idaho, USA. Report prepared for Pennsylvania Game Commission, Harrisburg, Pennsylvania, USA.

Appendix A: Survey Instrument/Frequencies



Hunter Survey of Pheasant Management in Pennsylvania



1. Which of the following best describes your pheasant hunting activity in Pennsylvania?

	n	%	
I have never hunted pheasants in Pennsylvania.	2,242	47.40%	<i>Please go to question 23</i>
I have hunted pheasants in Pennsylvania in the past, but I did not hunt pheasants in Pennsylvania during the 2012-13 season.	901	19.05%	<i>Please go to question 22</i>
I hunted pheasants in Pennsylvania during the 2012-13 season, but only on regulated shooting grounds.	281	5.94%	<i>Please go to question 22</i>
I hunted wild or Game Commission released pheasants in Pennsylvania during the 2012-13 season.	1,306	27.61%	<i>Please go to question 2</i>

2. What is the amount of time that you drive from your residence to the area you hunt pheasants most often?

	Less than a ½ hour	½ hour to 1 hour	More than 1 hour to 2 hours	More than 2 hours
n	397	518	160	74
%	34.55%	45.08%	13.93%	6.44%

3. Please indicate your level of agreement or disagreement for the following reasons you hunted pheasants during the 2012-13 season.

	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
Pheasant hunting is very important to me.	788	60.99%	350	27.09%	133	10.29%	16	1.24%	5	0.39%
Opportunity to hunt with friends or family.	924	71.96%	247	19.24%	87	6.78%	11	0.86%	15	1.17%
The Game Commission released more pheasants than in recent years.	219	17.07%	224	17.46%	516	40.22%	183	14.26%	141	10.99%
I had time to hunt.	467	36.29%	529	41.10%	193	15.00%	81	6.29%	17	1.32%
I had access to a new place to hunt.	148	11.76%	220	17.49%	466	37.04%	187	14.86%	237	18.84%
Pheasant hunting allows me to work my hunting dog(s).	448	36.22%	134	10.83%	399	32.26%	40	3.23%	216	17.46%
I hunt pheasants opportunistically when I see them while hunting other species.	157	12.27%	292	22.81%	323	25.23%	184	14.38%	324	25.31%
I had the opportunity to be a youth's mentor.	222	17.96%	114	9.22%	464	37.54%	77	6.23%	359	29.05%

4. In which Wildlife Management Unit did you hunt pheasants most often in 2012-13? (Please refer to the map on the back of your cover letter.) _____

WMU	n	%	WMU	n	%
1A	64	4.90%	3D	50	3.83%
1B	55	4.21%	4A	33	2.53%
2A	81	6.20%	4B	28	2.14%
2B	13	1.00%	4C	62	4.75%
2C	81	6.20%	4D	74	5.67%
2D	98	7.50%	4E	40	3.06%
2E	32	2.45%	5A	29	2.22%
2F	56	4.29%	5B	91	6.97%
2G	32	2.45%	5C	77	5.90%
3A	18	1.38%	5D	2	0.15%
3B	32	2.45%	Either sex	725	65.37%
3C	61	4.67%	Cocks only	384	34.63%

5. For each property type, please indicate the number of days you hunted, and the number of pheasants you harvested.

	Number of days hunted for pheasants		Number of male pheasants harvested		Number of female pheasants harvested	
	n	%	n	%	n	%
State Game Lands	6,170	57.3%	2,383	59.6%	1,156	68.8%
Other Publicly Owned Lands (state parks, federal lands, etc.)	1,521	14.1%	449	11.2%	212	12.6%
Privately Owned Lands in a Game Commission Hunter Access Program (Farm Game, Safety Zone, etc.)	1,020	9.5%	410	10.3%	127	7.6%
Privately Owned Lands not in a Game Commission Hunter Access Program	2,065	19.2%	754	18.9%	186	11.1%

If you hunted on State Game Lands, please go to question 6.

If you did not hunt on State Game Lands, please go to question 9.

6. If you hunted on State Game Lands, please indicate the State Game Land number where you hunted pheasants most often? (please list only one State Game Land number) _____

State Game Land information was too unreliable to be useful in analyses.

7. On the State Game Land you hunted the most, please indicate your thoughts about the number of pheasants stocked there.

Too Many		About Right		Too Few		Not Sure	
n	%	n	%	n	%	n	%
2	0.19%	341	32.85%	573	55.20%	122	11.75%

8. On the State Game Land you hunted the most, please indicate your thoughts about the number of hunters encountered while hunting there.

A lot of hunters		About right		Very few hunters		Not sure	
n	%	n	%	n	%	n	%
531	51.01%	344	33.05%	143	13.74%	23	2.21%

9. For each segment of the pheasant hunting season, please indicate for the number of days you hunted, and the number of pheasants you harvested (excluding hunting on regulated hunting grounds).

	Number of days hunted for pheasants		Number of male pheasants harvested		Number of female pheasants harvested	
	n	%	n	%	n	%
Junior Pheasant Hunt (Oct. 6-13, 2012)	250	3.0%	113	3.4%	57	4.0%
Opening Day (Oct. 20, 2012)	608	7.3%	471	14.1%	156	11.0%
First Week Monday through Saturday (Oct. 22-27, 2012)	1,696	20.5%	860	25.8%	297	21.0%
Second Week Monday through Saturday (Oct. 29 – Nov. 3, 2012)	1,638	19.8%	687	20.6%	280	19.8%
Third Week Monday through Saturday (Nov. 5-10, 2012)	1,322	16.0%	490	14.7%	216	15.3%
Fourth Week Monday through Saturday (Nov. 12-17, 2012)	996	12.0%	317	9.5%	149	10.5%
Fifth Week Monday through Saturday (Nov. 19-24, 2012)	769	9.3%	225	6.7%	95	6.7%
Winter Season (Dec. 2012 – Feb. 2013)	1,007	12.2%	172	5.2%	163	11.5%

10. Did you purchase pheasants for hunting at regulated hunting grounds, dog training, or private release during 2012?

Yes <i>Please go to question 11</i>		No <i>Please go to question 12</i>	
n	%	n	%
183	14.60%	1,070	85.40%

11. Please indicate which activities you purchased birds for, the number of birds you purchased, and the average cost per adult pheasant during 2012.

	Number Purchased		Average Cost Per Bird
	n	%	Mean
Hunting and private release	3,640	58.58%	\$14.09
Dog training	919	14.79%	\$11.95
Regulated hunting grounds	1,655	26.63%	\$16.59

12. Do you obtain information about where and when pheasants are stocked by the Game Commission by any of the following ways?

	Yes	
	n	%
Other hunters	688	22.97%
Paper publications (Pennsylvania Hunting & Trapping Digest, magazines, newspapers, etc.)	400	13.36%
Game Commission website	512	17.10%
Other hunting-related website	50	1.67%
Social media (Facebook, Twitter, etc.)	38	1.27%
Game Commission employees	128	4.27%
I hunt pheasants without obtaining stocking information	693	23.14%
My experience is that the Game Commission is predictable in their stocking schedule.	391	13.06%
Other	95	3.17%

13. How often do you use a hunting dog when hunting pheasants?

	Always	Usually	Half of the time	Rarely	Never
n	426	126	94	196	341
%	36.01%	10.65%	7.95%	16.57%	28.83%

14. Please answer all the following questions by indicating your level of satisfaction.

	Very Satisfied		Somewhat Satisfied		Neutral		Somewhat Dissatisfied		Very Dissatisfied		Don't Know	
	n	%	n	%	n	%	n	%	n	%	n	%
Your overall satisfaction with pheasant hunting in Pennsylvania for the 2012-13 hunting season.	199	15.51%	405	31.57%	225	17.54%	254	19.80%	200	15.59%	6	0.47%
If pheasant hunting regulations in the Wildlife Management Unit I hunt most often stayed the same as they were in the 2012-13 season.	264	21.57%	379	30.96%	364	29.74%	113	9.23%	104	8.50%	43	3.51%
If the Game Commission continues to release 200,000 pheasants for hunting.	411	32.88%	420	33.60%	227	18.16%	127	10.16%	65	5.20%	25	2.00%
With the hunting behavior of other pheasant hunters.	195	15.63%	403	32.29%	372	29.81%	186	14.90%	92	7.37%	27	2.16%
With the number of other pheasant hunters.	114	9.19%	343	27.64%	535	43.11%	161	12.97%	88	7.09%	28	2.26%

15. Compared to when you started hunting, how would you rate the quality of your pheasant hunting experience in 2012-13?

	Much Better	A Little Better	About the Same	A Little Worse	Much Worse	I did not hunt pheasants in 2011-12
n	118	153	253	246	493	24
%	9.34%	12.11%	20.03%	19.48%	39.03%	1.90%

16. How many pheasants do you need to see to be satisfied by a day of pheasant hunting?

	Zero	1	2	3	4	5	6	7	8	9	≥10
n	65	145	193	186	270	129	163	25	46	3	63
%	5.05%	11.26%	14.98%	14.44%	20.96%	10.02%	12.66%	1.94%	3.57%	0.23%	4.89%

17. How many pheasants do you need to hear to be satisfied by a day of pheasant hunting?

	Zero	1	2	3	4	5	6	7	8	9	≥10
n	180	164	144	140	195	121	120	36	61	14	104
%	14.07%	12.82%	11.26%	10.95%	15.25%	9.46%	9.38%	2.81%	4.77%	1.09%	8.13%

18. How many pheasants do you need to harvest to be satisfied by a day of pheasant hunting?

	Zero	1	2
n	533	525	232
%	41.32%	40.70%	17.98%

19. Please indicate your level of agreement or disagreement with each of the following statements regarding pheasant populations and season regulation.

	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree		Don't Know	
	n	%	n	%	n	%	n	%	n	%	n	%
Wild pheasant populations do not exist in the Wildlife Management Unit where I hunt most.	580	46.89%	315	25.46%	161	13.02%	117	9.46%	64	5.17%	35	2.83%
Cock and hen pheasants should be legal for harvest in Wildlife Management Units where wild pheasant populations do not exist.	421	33.71%	304	24.34%	217	17.37%	124	9.93%	183	14.65%	24	1.92%
Only cocks should be legal for harvest in all Wildlife Management Units.	208	16.83%	179	14.48%	274	22.17%	249	20.15%	326	26.38%	31	2.51%
Cocks-only pheasant hunting zones should only be used to protect wild pheasant populations.	455	36.84%	328	26.56%	239	19.35%	105	8.50%	108	8.74%	29	2.35%
The daily bag limit should be increased from 2 to 3 pheasants.	124	9.91%	128	10.23%	240	19.18%	237	18.94%	522	41.73%	18	1.44%
I support either sex pheasant hunting in all Wildlife Management Units.	269	21.78%	232	18.79%	249	20.16%	212	17.17%	273	22.11%	28	2.27%
Hunters should be allowed to harvest cocks during the winter pheasant season (Dec. – Feb.) in all Wildlife Management Units.	373	30.15%	342	27.65%	315	25.46%	92	7.44%	115	9.30%	34	2.75%
The winter pheasant season (Dec. - Feb.) should only be open in Wildlife Management Units that do not have wild pheasants.	290	23.79%	272	22.31%	379	31.09%	136	11.16%	142	11.65%	49	4.02%

20. Please indicate your level of agreement or disagreement with each of the following statements regarding pheasant seasons.

	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree		Don't Know	
	n	%	n	%	n	%	n	%	n	%	n	%
I support the sportsmen's club-sponsored Junior pheasant hunts.	746	59.92%	268	21.53%	179	14.38%	33	2.65%	19	1.53%	21	1.69%
I support the Junior pheasant hunting season.	790	63.15%	269	21.50%	119	9.51%	40	3.20%	33	2.64%	9	0.72%
The regular pheasant season should start one week earlier – in mid-October (concurrent with grouse opener).	388	31.14%	261	20.95%	345	27.69%	117	9.39%	135	10.83%	17	1.36%
The regular pheasant season should start one week later – end of October/beginning of November (concurrent with wild turkey opener).	87	7.13%	107	8.77%	392	32.13%	275	22.54%	359	29.43%	39	3.20%
I like the regular pheasant season starting when it did in 2012.	254	20.62%	303	24.59%	479	38.88%	122	9.90%	74	6.01%	36	2.92%
The only days I have to hunt pheasants are Saturdays.	248	20.00%	288	23.23%	195	15.73%	174	14.03%	335	27.02%	18	1.45%

21. Please indicate your level of agreement or disagreement with each of the following statements regarding pheasant stocking.

	Strongly Agree		Somewhat Agree		Neither Agree nor Disagree		Somewhat Disagree		Strongly Disagree		Don't Know	
	n	%	n	%	n	%	n	%	n	%	n	%
Pheasants should be stocked twice each week during the season, rather than just once (releases would be smaller).	377	29.97%	412	32.75%	307	24.40%	103	8.19%	59	4.69%	15	1.19%
More pheasants should be stocked during the winter season (Dec. – Feb.) and fewer during the fall season.	112	8.96%	162	12.96%	336	26.88%	338	27.04%	302	24.16%	21	1.68%
More pheasants should be stocked during the fall season and fewer during the winter (Dec. – Feb.) season.	339	26.99%	404	32.17%	336	26.75%	116	9.24%	61	4.86%	17	1.35%
Pheasants should not be stocked during the winter (Dec. – Feb.) season.	158	12.85%	179	14.55%	421	34.23%	218	17.72%	254	20.65%	39	3.17%
Pheasants should be stocked more than once during the winter (Dec. - Feb.) season.	175	14.32%	253	20.70%	427	34.94%	177	14.48%	190	15.55%	31	2.54%
The Game Commission should continue stocking pheasants as they did during the 2012-2013 seasons, i.e. for the Junior Pheasant Season, Opening Day, 4 in-season releases, and once during the winter season (either-sex areas).	222	17.93%	386	31.18%	404	32.63%	137	11.07%	89	7.19%	26	2.10%
Stocking game farm pheasants is an effective way to restore wild pheasant populations.	185	15.35%	255	21.16%	291	24.15%	233	19.34%	241	20.00%	63	5.23%
The Game Commission produces a quality pheasant.	462	37.11%	516	41.45%	201	16.14%	41	3.29%	25	2.01%	30	2.41%

22. How many years have you hunted pheasants in Pennsylvania?

	Less than 5 years	5 - 15 years	16 - 25 years	26 - 35 years	More than 35 years
n	557	515	905	753	953
%	15.12%	13.98%	24.57%	20.45%	25.88%

If you were a pheasant hunter during the 2012-13 season please go to question 24.

23. If you are not a pheasant hunter, only hunted pheasants on a regulated hunting grounds, or just didn't hunt pheasants in Pennsylvania during the 2012-13 season, please indicate the importance of the following factors that might increase the chance of your participation in wild or Game Commission stocked pheasant hunting in Pennsylvania.

	Very Important		Somewhat Important		Neither Important or Unimportant		Somewhat Unimportant		Very Unimportant	
	n	%	n	%	n	%	n	%	n	%
There were more wild pheasants available to hunt.	1,767	57.20%	762	24.67%	385	12.46%	52	1.68%	123	3.98%
There were more stocked pheasants available to hunt.	1,238	40.48%	982	32.11%	562	18.38%	105	3.43%	171	5.59%
I had more places to hunt pheasants.	1,393	45.61%	786	25.74%	623	20.40%	84	2.75%	168	5.50%
Pheasants were stocked closer to my home.	832	27.28%	858	28.13%	988	32.39%	151	4.95%	221	7.25%
Pheasant hunting was less crowded.	563	18.55%	731	24.09%	1,256	41.38%	240	7.91%	245	8.07%
Pheasant hunting was safer.	577	19.17%	518	17.21%	1,313	43.62%	262	8.70%	340	11.30%
I had someone to hunt pheasants with.	458	15.41%	671	22.58%	1,241	41.76%	262	8.82%	340	11.44%
Pheasant season didn't overlap with other hunting seasons.	371	12.18%	534	17.53%	1,453	47.70%	282	9.26%	406	13.33%
I had more personal free time to hunt.	788	25.84%	757	24.83%	977	32.04%	194	6.36%	333	10.92%
I knew more about how to hunt pheasants.	294	9.70%	462	15.24%	1,378	45.46%	296	9.77%	601	19.83%
Pheasant hunting was less expensive.	267	8.79%	404	13.31%	1,505	49.57%	340	11.20%	520	17.13%
I was physically able to hunt pheasants.	389	12.85%	350	11.56%	1,290	42.60%	224	7.40%	775	25.59%
I or those I hunt with had a bird dog.	488	16.08%	717	23.63%	1,116	36.78%	225	7.42%	488	16.08%
Hunting regulations were less complex.	456	15.04%	593	19.56%	1,329	43.85%	250	8.25%	403	13.30%
Pheasant season was longer.	420	13.88%	171	23.69%	1,332	44.02%	199	6.58%	358	11.83%
I could hunt pheasants on Sundays.	874	28.70%	479	15.73%	766	25.16%	147	4.83%	779	25.58%

24. Did you hunt pheasants in a state or states other than Pennsylvania during the 2012-13 season?^a

	Yes Please go to question 25	No Please go to question 26
n	123	4,160
%	2.87%	97.13%

^a Results include Pennsylvania residents only

25. Please list the other state(s) where you hunted pheasants during the 2012-13 season.^a

State	n	%
Alabama	1	0.76%
Delaware	1	0.76%
Florida	2	1.52%
Iowa	3	2.27%
Idaho	1	0.76%
Illinois	1	0.76%
Indiana	2	1.52%
Kansas	8	6.06%
Kentucky	4	3.03%
Maryland	6	4.55%
Maine	1	0.76%
Michigan	1	0.76%
Missouri	1	0.76%
Montana	4	3.03%
North Carolina	1	0.76%
North Dakota	8	6.06%
Nebraska	3	2.27%
New Jersey	21	15.91%
Nova Scotia	1	0.76%
New York	15	11.36%
Ohio	10	7.58%
South Dakota	30	22.73%
Texas	2	1.52%
Virginia	1	0.76%
Wisconsin	1	0.76%
West Virginia	3	2.27%

^a Results include Pennsylvania residents only

26. Do you belong to any of the following organizations?

	Yes		No	
	n	%	n	%
Pheasants Forever	147	3.34%	4,251	96.66%
Pennsylvania Federation of Sportsmen's Clubs	282	6.38%	4,137	93.62%
Unified Sportsmen of Pennsylvania	73	1.69%	4,248	98.31%

27. How would you describe your level of awareness of the Pennsylvania Ring-necked Pheasant Management Plan?

	I've read it all.	I've read some of it.	I've heard about it.	I wasn't aware there was a written plan.
n	195	1,263	1,641	1,420
%	4.32%	27.95%	36.31%	31.42%

28. Are you familiar with the existence of Wild Pheasant Recovery Areas in Pennsylvania?

	Yes	No
n	1,957	2,569
%	43.24%	56.76%

29. Wild pheasant populations have declined in Pennsylvania. I believe the primary cause of the decline is:

	Overharvest	Pesticides	Disease	Habitat loss	Predators	Not sure
n	116	134	66	1,554	1,429	745
%	2.87%	3.31%	1.63%	38.43%	35.34%	18.42%

30. Please indicate your level of agreement or disagreement with each of the following statements regarding use of Game Commission funds for various pheasant management options.

	Strongly Agree		Somewhat Agree		Neutral		Somewhat Disagree		Strongly Disagree		Don't Know	
	n	%	n	%	n	%	n	%	n	%	n	%
The Game Commission should continue to propagate and stock game farm pheasants.	2,552	55.95%	1,157	25.37%	553	12.12%	108	2.37%	98	2.15%	93	2.04%
The Game Commission should continue to try to recover wild pheasants in Pennsylvania.	2,933	64.19%	938	20.53%	432	9.46%	97	2.12%	76	1.66%	93	2.04%
The Game Commission should decrease its focus on pheasant management and reallocate funds to management of other species.	223	4.90%	440	9.67%	1,387	30.47%	884	19.42%	1,457	32.01%	161	3.54%
The Game Commission should place even greater emphasis on pheasant propagation and stocking.	1,279	28.12%	1,249	27.46%	1,451	31.90%	311	6.84%	121	2.66%	138	3.03%
The Game Commission's pheasant propagation program should continue to be paid for by all hunters.	1,350	29.66%	1,314	28.87%	1,103	24.24%	378	8.31%	285	6.26%	121	2.66%
The Game Commission should place greater emphasis on improving pheasant habitat on farmland.	1,840	40.50%	1,453	31.98%	869	19.13%	164	3.61%	98	2.16%	119	2.62%
I support requiring hunters to purchase a stamp to help fund the pheasant propagation program.	989	21.71%	1,014	22.26%	875	19.21%	503	11.04%	1,030	22.61%	145	3.18%
I support requiring hunters to purchase a stamp to help fund wild pheasant restoration.	967	21.22%	1,061	23.29%	855	18.77%	492	10.80%	1,038	22.78%	143	3.14%

Thank you for your contribution to this survey.

It is greatly appreciated.