

Alberta Conservation Association
2021/22 Project Summary Report

Project Name: Upland Game Bird Fall Forecast

Wildlife Program Manager: Doug Manzer

Project Leader: Daniel Knop

Primary ACA staff on project: Budd Erickson, Jalen Hulit, Tyler Johns, Daniel Knop, Adam Moltzahn, Layne Seward, Mike Uchikura, and Samuel Vriend

Partnerships

Alberta Environment and Parks

Landowners

Pheasants Forever – Calgary Chapter

Volunteer survey participants – dog handlers

Key Findings

- Survey effort increased for grey partridge beginning in 2020 with volunteers providing input over a greater spatial extent. The average distance walked was 48.78 km from 2012 through 2019 and increased to 90.67 km and 111.70 km in 2020 and 2021, respectively.
- Our late summer surveys suggest we may have turned the corner from the lower flush rates seen from 2018 to 2020 for grey partridge, although numbers are still below the long-term 10-year average. Pheasant numbers have not seen the recent rebound that partridge numbers have, remaining well below the long-term average throughout the last 2 years.
- Down from the high of 2016, we had 1.48 pheasant flushes per hour in 2021 (i.e., one or more birds per flush). This translates to 1.22 pheasants for each kilometre walked (48.5 km) over the 18 hours of survey time.
- We had an average of 1.09 grey partridge flushes per hour. This translates to 3.18 partridge for each kilometre walked over the 41.1 hours of survey time.

Abstract

As we did in 2020, we reached out to the hunting dog community in 2021 to ask for their assistance with conducting annual upland game bird productivity surveys throughout Alberta. The survey information collected by these volunteers enabled us to expand the geographic areas covered as well as the overall survey effort, particularly for grey partridge. We anticipate this will provide a broader representation of the annual survey results for pheasant and grey partridge recruitment leading up to the annual hunting season. Flush rates for both partridge and pheasants are still below the long-term moving average, although they have increased moderately off the lows seen in 2019 and 2020. The information acquired from these surveys helps us understand population trends, brood success, as well as heighten the excitement for the upcoming hunting season as we release the survey results on our website and various social media outlets each fall.

Introduction

Since 2012, we have conducted productivity surveys in late summer to gain a measure of annual reproductive success for ring-necked pheasant (*Phasianus colchicus*) and grey partridge (*Perdix perdix*). The information acquired from these surveys helps us understand population trends and brood success, as well as informs hunters looking for an indication of breeding success leading up to the hunting season. We release survey results on our website and other social media outlets such as Facebook each fall. As we did in 2020, we sought the assistance of gun dog owners through social media to voluntarily participate in these surveys across Alberta. We anticipated this would expand the geographic extent of the area surveyed and therefore a broader representation of game bird abundance for the 2021 fall hunting season.

We also interact with landowners annually through this process to discuss trends and weather patterns, as well the habitat resources that are important for these ground-dwelling game birds. This is a two-way conversation where everyone learns something! The results from these surveys are keenly anticipated by hunters annually and continue to build interest in upland hunting as well as providing a platform to discuss important habitat needs.

Methods

The surveys occur in late summer and early fall to coincide with post-crop harvest. Once an area is harvested, it allows for higher levels of bird detection in the permanent cover that borders the farmland. Surveyors are asked to search areas of prime habitat, generally places that they hunt, to seek out and flush birds. Survey sites include large coulee systems that harbor a mix of native and tame grasses, fruit-bearing shrubs, creeks, and cattail sections, often bordered by cropland. The surveys are intended to mimic hunting scenarios, allowing the dog and handler to cover ground as they see fit, to flush the most birds possible. Surveys occur after sunrise during the cool morning weather and typically lasts from 2 to 4 hours depending on conditions. Surveyors are asked to record different parameters at each flush including species, sex of birds flushed, total number per flush, as well as the survey time and distance covered. This information is recorded to calculate indices such as flushes/hour and birds/km walked, which can be easily communicated to hunters.

Adding data from dog handlers across the province has expanded the area of coverage as well as the time and kilometres surveyed. A variety of dogs and handlers are involved in the surveys, which offers different levels of search effort and ability, giving realistic results of what hunters can expect to see in the upcoming hunting season. Since volunteers were encouraged to survey areas throughout the entire province, some surveys took place in areas with no pheasant populations. For this reason, we adjusted the time and kilometres surveyed to correlate with the surveys that took place in pheasant habitat.

Results

Survey effort increased for grey partridge beginning in 2020 with volunteers providing input over a greater spatial extent. The average distance walked was 48.78 km from 2012 through 2019 and increased to 90.67 km and 111.70 km in 2020 and 2021, respectively (Tables 1 and 2). We again saw below average counts for ring-necked pheasant and grey partridge in 2021 compared with the long-term moving average. However, the flush rates for partridge and pheasant were up moderately from the lows we encountered in 2019 and 2020 (Tables 1 and 2).

Overall, we flushed 59 pheasants while covering 48.5 km during 18 hours of effort and 355 partridges while covering 111 km during 41 hours of effort. Although as stated, we changed our survey approach beginning in 2020, which makes the comparison of total counts among years less meaningful. The dogs encountered 1.48 pheasant and 1.09 partridge flushes per hour (single or covey). Averaged over the entire sample period for 2021 this equates to roughly 1.21 flushes of either pheasant or partridge per hour. For each kilometre walked, surveyors flushed 1.22 pheasants and 3.18 partridge (Tables 1 and 2).

Table 1. Total counts and encounter rates for ring-necked pheasant during late summer surveys from 2012 to 2021.

| Survey results | Ring-necked pheasant | | | | | | | | | | |
|------------------------|----------------------|------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | AVG |
| Survey year | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | AVG |
| Distance surveyed (km) | 53.6 | 60 | 30 | 46 | 47 | 46 | 67 | 40.6 | 46 | 48.5 | 48.7 |
| Hours | 24.8 | 25.1 | 12.74 | 21.35 | 19.25 | 21.95 | 29.21 | 16.54 | 17.93 | 18.3 | 20.71 |
| Flushes | 34 | 65 | 25 | 52 | 64 | 49 | 45 | 20 | 23 | 27 | 40.4 |
| Total count | 111 | 215 | 73 | 155 | 263 | 163 | 129 | 52 | 66 | 59 | 128.6 |
| Flushes/hour | 1.37 | 2.59 | 1.96 | 2.44 | 3.32 | 2.23 | 1.54 | 1.21 | 1.28 | 1.48 | 1.94 |
| Birds/km walked | 2.07 | 3.58 | 2.43 | 3.37 | 5.60 | 3.54 | 1.93 | 1.28 | 1.43 | 1.22 | 2.65 |

Table 2. Total counts and encounter rates for grey partridge during the late summer surveys from 2012 to 2021.

| Survey results | Grey partridge | | | | | | | | | | |
|------------------------|----------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | AVG |
| Survey year | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | AVG |
| Distance surveyed (km) | 53.6 | 60 | 30 | 46 | 47 | 46 | 67 | 40.6 | 90.67 | 111.7 | 59.26 |
| Hours | 24.8 | 25.1 | 12.74 | 21.35 | 19.25 | 21.95 | 29.21 | 16.54 | 37.59 | 41.1 | 24.96 |
| Flushes | 34 | 40 | 45 | 46 | 16 | 21 | 24 | 7 | 24 | 45 | 30.2 |
| Total count | 354 | 420 | 397 | 292 | 159 | 214 | 151 | 56 | 222 | 355 | 262 |
| Flushes/hour | 1.37 | 1.59 | 3.53 | 2.15 | 0.83 | 0.96 | 0.82 | 0.42 | 0.64 | 1.09 | 1.34 |
| Birds/km walked | 6.6 | 7 | 13.2 | 6.35 | 3.38 | 4.65 | 2.25 | 1.38 | 2.45 | 3.18 | 5.04 |

Conclusions

Encounter rates and overall numbers for pheasants appear to have bottomed out after the lows of 2018 and 2019. Even so, the long-term average is 1.94 flushes per hour, so numbers remain on the low side compared with the past 10 years.

The inclusion of survey information from gundog owners across a much broader geographic area has increased survey effort, particularly for grey partridge. The current effort is roughly double of that provided before 2020 and represents a greater cross-section of habitat surveyed for partridge. We hope to continue expanding the collection of survey data through volunteers annually, as well as expanding the geographic area of coverage. Although, this expansion of survey effort also makes comparison of survey metrics among years more challenging. Even so, taken as a whole, partridge numbers were moderately below the long-term 10-year average for covey flushes per hour in 2021 (i.e., 1.09 flushes/hour vs. 1.34 flushes/hour).

Annual survival and reproductive success are commonly influenced by weather patterns that can have knock-on effects beyond the current year. A particularly harsh winter can increase winter mortality of adult birds as well as reduce the fitness of hens entering the spring breeding season. Together, this can result in far fewer females having a successful hatch compared with previous years. Severely low reproductive success in the summer following a harsh winter can easily result in fewer females entering the breeding season a full year after that harsh winter as well. As such, it can take multiple years to recover from a harsh winter.

Winter conditions have been severe over the past few years, particularly in 2018 when snowpack persisted from November through April over much of southern Alberta. As such, it is no surprise that 2021 counts remain relatively low compared with the long-term averages for both grey partridge and pheasants.

Pheasants and grey partridge populations are known to be quite variable from year to year. With favourable winter conditions and good habitat management, these species commonly recover from lows within 2 – 4 years. We will continue to monitor their population numbers and share these results annually.

Communications

- The survey results were published on ACA's website and communicated via social media. Results were also shared with Pheasant Forever – Calgary Chapter, who further shared this information with its members via an e-newsletter and through hard copies mailed out to members.
- Social media was used to promote the survey and to reach out to dog handlers asking for their assistance in the surveys.

Literature Cited

Not applicable

Photos



Photo 1. ACA staff member, Jalen Hulit, working his bird dog on a coulee slope moving towards a coulee draw with excellent security cover. Photo: Samuel Vriend



Photo 2. ACA staff member, Jalen Hulit, and dog flushing and counting a covey of partridge from a pocket of chokecherry shrubs, which provide excellent habitat. Photo: Samuel Vriend