Alberta Conservation Association

2022/23 Project Summary Report

Project Name: Upland Game Bird Fall Forecast

Wildlife Program Manager: Doug Manzer

Project Leader: Samuel Vriend

Primary ACA Staff on Project: Jeff Forsyth, Jalen Hulit, Layne Seward, Mike Uchikura, Samuel Vriend, and Sarah Vriend

Partnerships

Alberta Environment and Protected Areas
Landowners
Pheasants Forever – Calgary Chapter
Volunteer survey participants – dog handlers

Key Findings

- The number of volunteer survey participants increased from three individuals in 2021 to five individuals contributing data in 2022.
- Since 2019, volunteer hunters and their bird dogs have increased the distance covered during upland game bird flushing surveys, although the total distance covered was less in 2022 as compared to the previous year.
- Pheasant and partridge survey results in 2022 suggest we may have turned the corner from the lower flush rates seen between 2018 and 2020; for both species, numbers are near the long-term 11-year average.
- The number of pheasants flushed per kilometre was higher in fall 2022 compared to the previous five years, with 3.00 birds for each kilometre walked (26.0 km) over a total of 11.6 hours of survey time.
- We had an average of 1.31 partridge flushes per hour. This translates to 4.70 partridge for each kilometre walked over the 18.3 hours of survey time.

Abstract

As in 2020 and 2021, we reached out to the hunting dog community in 2022 to ask for their assistance with conducting annual upland game bird productivity surveys throughout Alberta. The survey information collected by the volunteers enabled us to expand the geographical areas covered as well as the overall survey effort, particularly for partridge. We anticipate this will provide a broader representation of the annual survey results for pheasant and partridge recruitment leading up to the annual hunting season. In 2022, we also received volunteer surveys for ruffed grouse and spruce grouse. We hope to receive more forest grouse surveys over the coming years to generate forecasts for those species as well. Flush rates for both pheasants and partridge in 2022 are similar to the long-term moving average, although they are both greater than the lows seen for the past 4–5 years. The information acquired from these surveys helps us understand population trends and brood success for pheasants and partridge, 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. More data is required for forest grouse species to understand population dynamics.

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. Volunteer hunters, with their upland game bird hunting dogs, are important contributors to project success. In 2022, we expanded the geographical area surveyed to provide a broader representation of game bird abundance for the fall hunting season.

Through the project, we communicate with landowners to discuss trends and weather patterns, and the habitat resources that are important for these upland game birds. This two-way conversation allows for everyone to learn something! The results from these annual surveys are keenly anticipated by hunters and build interest in upland hunting as well as provide a platform to discuss important habitat needs.

Methods

Pheasant and partridge surveys occur in late summer and early fall following the harvest of agricultural crops. 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 harbour 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 last between 2 and 4 hours, depending on weather 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. The collected data is analyzed, and indices are created 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

Although the number of volunteer participants increased in 2022, the average distance surveyed decreased to 45.5 km, compared to 111.7 km in 2021 (Tables 1 and 2). In 2022, the number of birds flushed per kilometre walked were close to the long-term averages for both pheasant and partridge. In addition, the flush rates for pheasant and partridge were up moderately from the lows we encountered in 2019 and 2020 (Tables 1 and 2).

Overall, we flushed 78 pheasants while covering 26.0 km during 12 hours of effort, and 214 partridges while covering 111 km during 18 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 1.55 pheasant and 1.31 partridge flushes per hour (single or covey). Averaged over the entire sample period for 2022, this equates to roughly 1.40 flushes of either pheasant or partridge per hour. For each kilometre walked, surveyors flushed 3.00 pheasants and 4.70 partridge (Tables 1 and 2).

Table 1. Total counts and encounter rates for ring-necked pheasant during late summer surveys from 2012 to 2022.

Survey Results	**Ring-necked Pheasant**											
Survey year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	AVG
Distance surveyed (km)	53.6	60.0	30.0	46.0	47.0	46.0	67.0	40.6	46.0	48.5	26.0	46.4
Hours	24.8	25.1	12.7	21.4	19.3	22.0	29.2	16.5	17.9	18.3	11.6	19.9
Flushes	34	65	25	52	64	49	45	20	23	27	18	38
Total count	111	215	73	155	263	163	129	52	66	59	78	124
Flushes/hour	1.37	2.59	1.96	2.44	3.32	2.23	1.54	1.21	1.28	1.48	1.55	1.91
Birds/km walked	2.07	3.58	2.43	3.37	5.60	3.54	1.93	1.28	1.43	1.22	3.00	2.68

Table 2. Total counts and encounter rates for grey partridge during the late summer surveys from 2012 to 2022.

Survey Results	**Grey Partridge**											
Survey year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	AVG
Distance surveyed (km)	53.6	60.0	30.0	46.0	47.0	46.0	67.0	40.6	90.7	111.7	45.5	58.0
Hours	24.8	25.1	12.7	21.4	19.3	22.0	29.2	16.5	37.6	41.1	18.3	24.4
Flushes	34	40	45	46	16	21	24	7	24	45	24	30
Total count	354	420	397	292	159	214	151	56	222	355	214	258
Flushes/hour	1.37	1.59	3.53	2.15	0.83	0.96	0.82	0.42	0.64	1.09	1.31	1.34
Birds/km walked	6.60	7.00	13.20	6.35	3.38	4.65	2.25	1.38	2.45	3.18	4.70	5.01

Conclusions

Our 2022 results suggest that encounter rates and overall numbers for pheasants appear to have bottomed out after the lows of 2018 and 2019. The long-term average is 1.91 flushes per hour. With 1.55 flushes per hour in 2022, numbers are about average compared with the past 11 years.

The inclusion of survey information from gun dog owners across a broader geographic area has increased survey effort, particularly for partridge. The survey effort in 2022 is roughly the same as that of prior to 2020. However, the current effort represents a greater cross-section of habitat surveyed for partridge. We hope to continue expanding the collection of survey data through annual volunteer involvement, as well as expanding the geographical survey area. Although, this expansion of survey effort also makes comparison of survey metrics among years more challenging. Even so, taken as a whole, our survey results suggest that partridge numbers are similar to the long-term 11-year average for covey flushes per hour (i.e., 1.31 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. Our results indicate that pheasant and partridge populations have been slowly recovering since the harsh winter in 2018.

Pheasants and partridge populations are known to be quite variable from year to year. With favourable winter conditions and good habitat management, it is common for these species to recover from low numbers within 2–4 years. We will continue to forecast pheasant and partridge population numbers and share these results annually.

Communications

- Survey results were published on Alberta Conservation Association's (ACA) website and communicated via social media. Results were also shared with Pheasant Forever – Calgary Chapter, who further shared the information with its members via an e-newsletter and through hardcopies mailed 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 toward a coulee draw with excellent security cover. Photo: Samuel Vriend

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