Alberta Conservation Association
2016/17 Project Summary Report

Project Name: Pheasant Studies – Upland Game Bird Productivity Survey, Pen-reared Pheasant Hen Survival Study

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Project Leader: Layne Seward

Primary ACA staff on project:

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Partnerships

Landowners
Pheasants Forever – Calgary Chapter
Various 4-H clubs across southern Alberta
4-H family volunteers

Key Findings

- Our late summer surveys indicated an above-average year for pheasants and a lower-than-average year for grey partridge.
- We had a combined flush rate of 4.2 encounters per hour (every 14 minutes).
- We flushed 3.32 pheasants per hour, which translated to 5.6 pheasants for each kilometre walked. This is roughly 35% greater than the previous year.
- Grey partridge flush rates were only 38% of the previous four-year average, with numbers flushed per kilometre down more than two-fold to only 3.4 birds per kilometre walked.
- We tested survival of pen-reared pheasants released as 14-week-old poults at four sites presumed to be high-quality habitat. Survival to 30 weeks of age ranged from 44% to 55% at three sites, and 11% at the fourth site.

Introduction

We conducted annual upland game bird surveys (pheasant, grey partridge, sharp-tailed grouse) in select locations to better understand the habitat conditions associated with annual recruitment and survival, as well as provide a forecast of game birds to encourage hunting. We also assessed the survival of pen-reared pheasants in sites assumed to be good habitat to inform our understanding of variability in survival from one site to another. There has been a great deal of enthusiasm and support for the ACA/4-H Pheasant Raise and Release program over the past three years, with the number of kids participating growing each year. The kids released more than 9,400 pheasants in 2016/17, so gaining a better understanding of survival in different habitats will help guide the location of future release sites. We worked with 4-H families to track

the survival of pen reared pheasants, with volunteers doing most of the work at two of the four sites. Pen-reared pheasants released into the wild typically have low survival, and we anticipate that less than 10% will survive to the follow spring.

Methods

We use trained dogs to locate and flush game birds while tracking the time and distance travelled. Using this information, we are able to measure effort over space and time to evaluate upland game bird population trends. These surveys are conducted in late summer to early fall with the assistance of volunteers and their trained dogs. Our survey window is timed to follow the annual crop harvest in southern Alberta. We have found that attempting these surveys before most crops are harvested increases effort and decreases encounter rates.

We released pen-reared female pheasant hens at 14 weeks of age at four sites thought to have good pheasant habitat. Two sites had large blocks of contiguous coulee habitat with fruit-bearing shrubs, plentiful water sources, and thick permanent cover bordered by cropland. A third site contained a 320-acre restored wetland with a large cattail complex mixed with upland cover, and was surrounded by intensive agricultural use. The fourth site was located in a river valley with riparian buffers surrounded by intensive agricultural land. Pheasant hens were equipped with radio collars and monitored weekly for 8 weeks and monthly thereafter. The collars had a mortality feature that activated if a pheasant died. We recorded the status of each individual during each event (alive, mortality, or censored) and recorded the suspected cause of death from recovered mortalities. We provided telemetry training for the 4-H participants and assisted them periodically with weekly and monthly events.

Results

Our late summer–fall surveys in 2016 indicated a good year for pheasant recruitment but a lower-than-average year for grey partridge in southern Alberta. We walked 47 km in some of the best habitat the south has to offer, and the dogs covered a much greater distance. The flush rate and average covey size for partridge was lower compared to 2015, whereas for pheasants it increased. Overall, we flushed 263 pheasants and 159 partridges in just 19 hours. The dogs were busy, with 3.32 pheasant flushes and 0.83 partridge flushes per hour. We flushed 5.6 pheasants and 3.4 partridge for each kilometre walked. Averaged over the entire sample period, this equates to roughly 4.2 flushes of either partridge or pheasant per hour. That’s a flush every 14 minutes!

Table 1. Total counts and encounter rates for ring-necked pheasant and grey partridge during late summer surveys from 2012 to 2016.

Survey results	Ring-necked pheasant					Grey partridge				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Distance surveyed (km)	53.6	60	30	46	47	53.6	60	30	46	47
Total count	111	215	73	155	263	354	420	397	292	159
Flushes/hour	1.37	2.59	1.96	2.44	3.32	1.37	1.59	3.53	2.15	0.83
Birds/km walked	2.07	3.58	2.43	3.37	5.6	6.6	7	13.2	6.35	3.38

We released 58 pheasant hens equipped with radio collars across four sites. Survival to 30 weeks of age ranged from 44% to 55% at three of the four sites, but was only 11% at the fourth site. Site fidelity was also greater at the three sites with higher survival, with most birds located within 3 km of the original release site, which resulted in higher survival rates. The site with lower survival may have had less holding cover than the other sites. In addition, the birds at this site were released straight from their brood-rearing pen, which may have gained the attention of local predators.

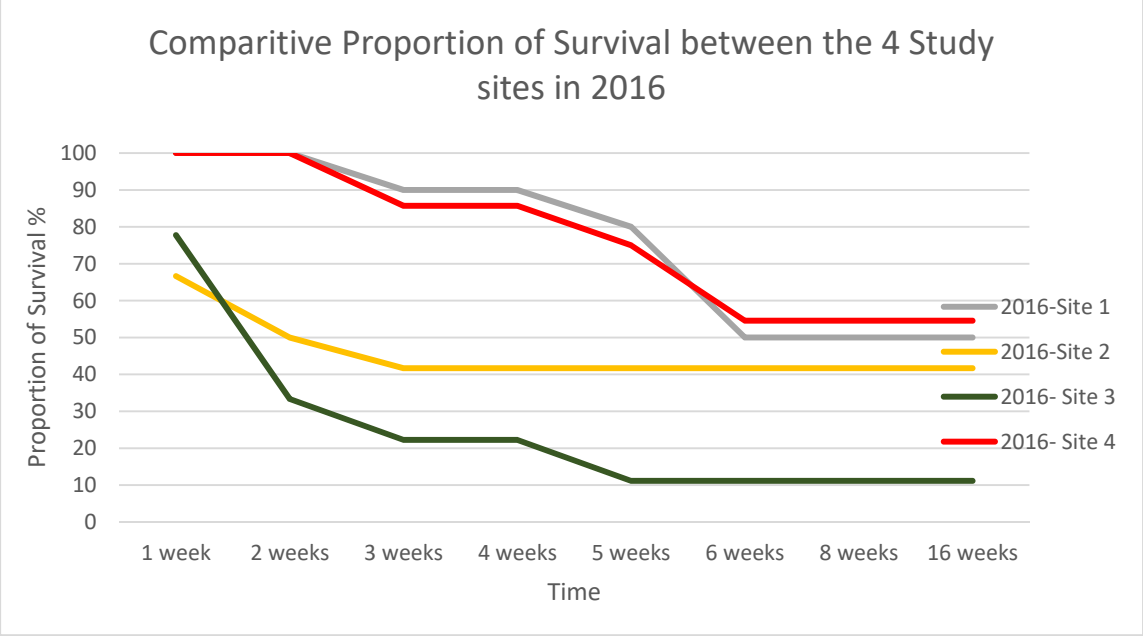

Figure 1. Comparison of survival of radio-collared pheasant hens at four study sites over a period of 15–30 weeks.

Conclusions

Our encounter rates for pheasant increased, whereas they decreased for partridge. Some study sites had standing crops during the surveys, which could have reduced partridge detection rates.

Pheasant hens released in higher-quality habitat had high survival rates and site fidelity. The lower survival of pheasants observed at one of the four release sites could indicate lower habitat quality and high predation following a soft release from a pen.

Communications

- The pheasant population survey results were published on ACA's website and communicated via social media. Results were also shared with Pheasant Forever Calgary, who further shared this information with its members via an e-newsletter and through hard copies mailed out to members.
- Pheasant survivorship will be shared on ACA's website and via social media as the study progresses into spring.

Literature Cited

None

Photos

Volunteers helping to complete upland game bird productivity surveys in coulee habitat south of Lethbridge. Photo: Kyle Prince

Pheasant hen flushed by trained dog Jid and his handler Mike Uchikura (Alberta Conservation Association) during upland game bird productivity surveys. Here, the coulee habitat meets the cropland. Photo: Kyle Prince

Alberta Conservation Association seasonal staff member Aiden Bateman using radio-telemetry equipment to search for radio-collared hen pheasants in a large cattail complex. Photo: Kyle Prince

Alberta Conservation Association staff applying a leg band to a young pheasant hen to aid in identification throughout the pheasant survival study. Photo: Layne Seward