

Alberta Conservation Association 2015/16 Project Summary Report

Project Name: Upland Gamebird Retention Surveys

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Primary ACA staff on project:

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Partnerships

Landowners
Pheasants Forever – Calgary Chapter
Stamp Seeds
Volunteers

Key Findings

- Our late summer surveys indicated a better-than-average year for both pheasants and grey partridge in fall 2015.
- Over the entire sample period, we averaged roughly 4.6 flushes of either partridge or pheasant per hour. That's a flush every 13 minutes!
- We flushed 2.4 pheasant coveys per hour, which translated to 3.4 pheasants for each kilometre walked. This flush rate is roughly 20% greater than the previous year.
- We flushed 2.2 grey partridge coveys per hour, with 6.4 birds for every kilometre walked.
- 29% of poults survived to 15 weeks using soft release methods and had greater site fidelity than those released at 17 weeks of age without support (hard release).

Introduction

We are engaged in several programs aimed at improving and trialing habitat enhancements to benefit upland gamebirds (e.g., Habitat Legacy Partnership, Demonstration Farm Project). We monitor upland bird population trends in select locations to gain a better understanding of habitat features and treatments that are associated with good recruitment and survival. We are also trialing approaches to improve the survival of released pheasants. Released poults have the potential to establish pheasant populations in areas of good habitat, although success rates can be low. The ACA/4-H Raise and Release Program has generated a great deal of enthusiasm and support in the past two years, with the number of kids participating in the program increasing each year. Gaining a better understanding of new approaches that improve the survival of released pheasants is important to support that program.

Methods

We conducted annual upland gamebird 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 to provide a forecast of gamebird numbers to encourage hunting. We use hunting dogs to flush gamebirds and track the time and distance travelled to measure effort over space and time. Surveys are completed in late summer and early fall, and partially with the assistance of volunteers and their dogs. We time the survey period to follow soon after harvest, so survey dates fluctuate with harvest dates each year. We have found that attempting these surveys before harvest increases effort and decreases encounter rates.

To better understand the efficiency of approaches and habitat needs for re-establishing pheasant populations, we released eight-week-old pheasant hens and tracked their survival and movements using radio collars attached to the birds. We used two different types of soft release pens—a large open-topped pen and three small portable pens—to determine if survival and site fidelity would differ. Birds in the larger pen had flight feathers clipped on one wing to discourage them from exiting the pen for two to three weeks. Birds that exited the larger pen could re-enter through pop-holes at ground level. The smaller pens were fully enclosed, and releases from these pens were staggered over one month. After the initial release, we monitored survival weekly for two months and monthly thereafter. The radio collars had a mortality feature that signalled if a pheasant was alive or dead. We mapped the location of each individual during each event and recorded the suspected cause of mortality for birds that died.

Results

Our late summer and early fall surveys in 2015 indicated another good year for grey partridge and pheasants in southern Alberta. Dogs and handlers walked approximately 46 km in some of the best habitat the south has to offer. The flush rate and average covey size for partridge were lower than in 2014, but were higher for pheasants. Overall, we flushed 155 pheasants and 292 partridge in just 21 h. The dogs were busy with 2.44 pheasant flushes and 2.15 partridge covey flushes per hour. Averaged over the entire sample period, these rates equate to roughly 4.6 flushes of either partridge or pheasants per hour. That's a flush every 13 minutes. In terms of distance, we flushed 3.36 pheasants and 6.35 partridge for each kilometre walked.

Table 1. Total counts and encounter rates for pheasant and grey partridge during late summer surveys in 2012 to 2015.

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

We released a total of 70 pen-reared hens that were eight weeks old on a 5 km² study site in an agriculturally dominated landscape. We used two different styles of soft release pens, which produced similar results for survival and site fidelity. Hens had reasonable site fidelity for the first eight weeks, with all individuals located within 1.6 km of the release site. Movement of some birds increased over time, with one bird travelling 14 linear kilometres after 15 weeks of it being released (Figure 1). Fifteen weeks after release, 16 hens were alive and 40 were dead, and the fate of the remaining 14 birds was unknown (missing). Hens that survived tended to be located near large cattail complexes, yard sites with lots of cover, or standing corn fields.

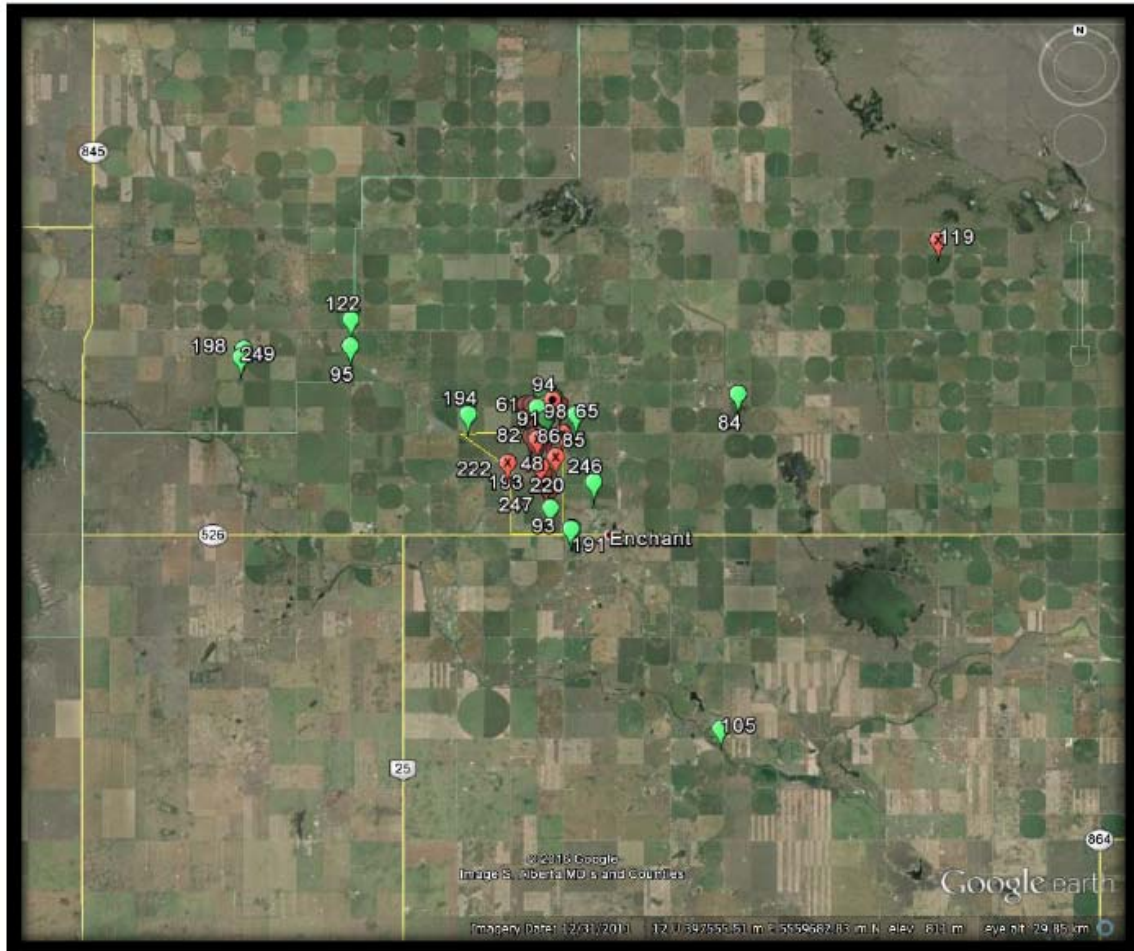


Figure 1. Location and fate of 70 pen-reared pheasant hens 15 weeks after release. The borders of the demonstration farm are outlined in yellow. Hens were released using two types of soft release pens. Birds that were alive are shown in green; birds that died are shown in red. Fourteen birds that were missing 15 weeks after release are not shown.

Conclusions

Our encounter rates for pheasant and grey partridge were above average in 2015. Overall, pheasant numbers and flush rates were higher than in 2014, while partridge flush rates were lower than in 2014 but still higher than in 2012 or 2013. We noticed that some areas that had higher partridge counts in 2014 experienced heightened cattle grazing through the early half of 2015, which may have affected habitat conditions important for nesting and recruitment.

Hens released from the two types of soft release pens trialed to date had higher survival and improved site fidelity compared with hens released without support (hard release) in 2014.

Communications

- The pheasant population survey results were reported on ACA's website and on social media. The results were also shared with Pheasant Forever Calgary, which circulated this information to its members through its e-newsletter and through hard copies mailed to members.

Photos



A radio-collared pheasant hen whose movements and survival were tracked during the study.
Photo: Layne Seward



Chelsea Jensen (Alberta Conservation Association) tracking locations of radio-collared pheasants. Photo: Kyle Prince



Construction of the large pen used for soft-release trials of pheasants. Photo: Kyle Prince



The small pens used for soft-release trials of pheasants. Photo: Kyle Prince



Jid, one of the hunting dogs used during the upland bird survey, holding steady on point. Photo: Mike Uchikura