Alberta Conservation Association

2021/22 Project Summary Report

Project Name: ABHuntLog

Wildlife Program Manager: Doug Manzer

Project Leader: Sue Peters

Primary ACA staff on project: Robert Anderson, Paul Jones, and Sue Peters

Partnerships

Alberta Environment and Parks
Alberta Fish & Game Association
Alberta Professional Outfitters Society
iHunter
University of Alberta

Key Findings

- ACA created ABHuntLog in collaboration with iHunter and University of Alberta as a voluntary survey feature within the iHunter app.
- Between September 1 and December 31, 2021, 142 voluntary ABHuntLog participants completed 720 surveys in 106 Wildlife Management Units (WMUs; after data cleaning).
- The most observational data were submitted for white-tailed deer (466 surveys), upland game birds (292 surveys), mule deer (255 surveys), and moose (235 surveys).
- ACA aggregated and summarized observations by WMU and made sample heat maps for key wildlife metrics (i.e., observation rates, age ratios, and sex ratios).
- Hunters who completed ABHuntLog surveys for each hunting and scouting trip can use their dashboard to assist them in completing mandatory harvest reporting. The summaries available on ABHuntLog.ca and each hunter's personal dashboard will be useful tools that build and maintain participation in subsequent years.

Abstract

ABHuntLog is an inexpensive and accessible citizen science app feature for collecting large-scale, long-term harvestable wildlife population data, developed through a partnership among ACA, University of Alberta, and iHunter. Between September 1 and December 31, 2021, 142 voluntary ABHuntLog participants completed 720 surveys in 106 Wildlife Management Units (WMUs). The most observational data were submitted for white-tailed deer, followed by upland game birds, mule deer, and moose. Several aggregated summaries by WMU of the 2021 data are available on ACA's website (ABHuntLog.ca), allowing hunters to visualize and understand the value and utility of their ABHuntLog data. Alberta hunters have expressed an interest in providing meaningful data to assist in the management of game species, and a desire for better information to help with planning future hunts. ABHuntLog enables voluntary submission of observational data using the iHunter Alberta app that will help achieve these outcomes, as well as provide a dashboard summary of their harvest information that individual hunters can use for planning future hunts and completing their annual mandatory reporting requirements to Alberta Environment and Parks. We anticipate increased participation in future years with improvements to ABHuntLog in 2022 so that we can expand the number and quality of the data summaries provided on ACA's website.

Introduction

The data used to manage wildlife populations effectively require survey methods that provide accurate and precise population estimates that are also efficient and economical (Found and Patterson 2020). In Alberta, aerial surveys have historically been the primary method used to estimate the population size, trend, distribution, and herd composition for ungulates (AEP 2016). As such, they have been an important source of data for setting hunting allocations. However, aerial ungulate surveys are intermittent and prohibitively expensive, averaging about $60,000 per Wildlife Management Unit (WMU), prompting the need for additional strategies for monitoring populations (Boyce et al. 2012, Boyce and Corrigan 2017). Inspired by the success of moose (*Alces alces*) observation indices gathered by hunters in Scandinavia, Alberta's Moose Hunter Survey app (Moose app) was initiated in 2012 (U of A 2017a, 2017b). The survey provided a

supplemental and less-costly data source to assess population trends across years over a broad range of WMUs (Boyce et al. 2012, Boyce and Corrigan 2017).

Alberta Conservation Association (ACA) took over the administration of the Moose app in 2017 and summarized the first five years of data (Peters et al. 2018). At that time, it was decided that a reconstruction and expansion of the app was necessary to make it more user friendly, to increase data quantity and quality, and improve hunter retention. ABHuntLog is the citizen science tool that ACA, University of Alberta (U of A; V. Adamowicz, Department of Resource Economics and Environmental Sociology), and iHunter have developed to address these issues (Figure 1). ABHuntLog's priorities are to collect observation data on a wide range of harvestable species across all WMUs, to provide high-quality demographic and trend data to biologists, wildlife managers, and hunters, while respecting and protecting the privacy of users and their personal information. Hunters can use ABHuntLog as a record of their hunting and scouting activities, with the assurance that it does not collect exact locations of observations or harvests; furthermore, data are collected anonymously with a unique identification number. By collecting high-quality data on key metrics (e.g., observation rate) for many of Alberta's harvestable species and making this information readily available on our website and on each user's personal dashboard, we expect ABHuntLog to become a valuable tool for Alberta hunters.

Figure 1. ABHuntLog logo.

Methods

For the 2021/22 hunting season, ABHuntLog was available to iHunter Alberta app users who voluntarily completed online registration and consent forms. Qualtrics software was used to

survey participants about their wildlife observations and harvests in their primary WMU where they were hunting or scouting. The iHunter app is a well-established tool used in the hunting community with over 70,000 downloads in Alberta. Partnering with iHunter as the platform for our survey taps into a large hunting audience, rather than potentially funneling a smaller number of iHunter users to a separate app.

Data submitted by individuals are considered private and not released to the public or government. User data are associated with an anonymous identification number. The user dashboard (Figure 2) is accessed through a user's iHunter account and provides observation and harvest data summaries by trips (days), by WMU, and by species. The dashboard will be expanded in 2022 to include annual (current) and historical summaries, as well as summaries of spatial data (kilometres and hours).

Harvestable wildlife observations submitted to ABHuntLog during 2021 were summarized to the WMU level. Beforehand, we cleaned the data by removing survey data from users who only completed a single "trip" in ABHuntLog with no associated spatial data (they did not track their travels) or with less than five minutes of tracked time, under the assumption that they were simply testing the app. As well, when the number of minutes in the WMU was less than 20, we recoded this to zero assuming the user did not track their entire trip, so these data did not artificially inflate our observation rates per hour.

We aggregated data by WMU and made sample heat maps of observation rates, age ratios, and sex ratios for several species; the maps are included in this report and available on the ACA website (ABHuntLog.ca). JMP 16.1.0 statistical software was used for all data analysis, and ArcMap 10.8.1 was used for mapping.

Figure 2. ABHuntLog dashboard homepage, showing running tallies of number of trips logged, WMUs visited, animals observed, and animals harvested. Clicking on each tab opens a separate page that provides more details (e.g., "Trip Days" shows which days a trip was made and in which WMU).

Results

In 2021/22, ACA collaborated with the U of A and iHunter to incorporate the ABHuntLog feature within the iHunter Alberta smartphone app. All three organizations signed a Cooperation Agreement, which will ensure longevity of the project, data security, and protection of funds expended. We continue to include Métis Nation of Alberta in project development discussions. Together with ACA Communications staff, we developed an ACA website (ABHuntLog.ca) where Alberta hunters can find background information on the program, instructions for getting started, a frequently asked questions (FAQ) section, and aggregate data summaries (by WMU) on an annual basis.

On September 1, 2021, the ABHuntLog feature in iHunter Alberta was released, allowing users to voluntarily track their hunting and scouting trips and complete a survey about their wildlife observations and harvests after each trip. Between September 1 and December 31, 2021, 142 ABHuntLog users completed 720 surveys ("trips") in 106 WMUs, after data cleaning. The mean number of trips per WMU was 6.8 (range: 1–40). The mean number of trips per user was 5.1 (range: 1–43), with most of the 720 trips for hunting (88%) rather than scouting. Hunters could submit observation data for several species each time they filled out a trip survey. White-tailed deer (*Odocoileus virginianus*) was the most common primary or secondary species identified in trip surveys, followed by upland game birds, mule deer (*O. hemionus*), and moose (Figure 3).

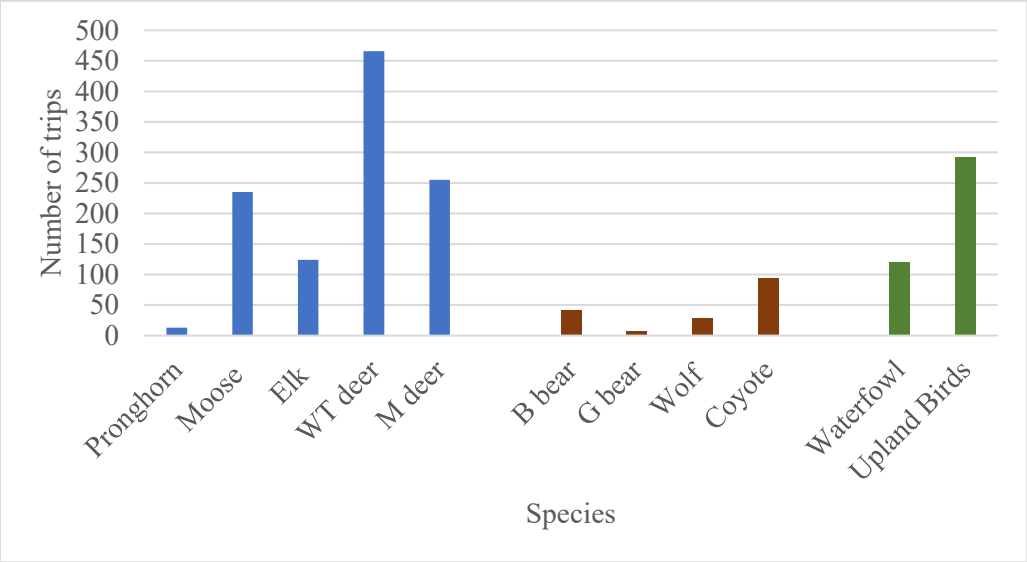

Figure 3. The total number of trips for which each species was identified in the survey as either a primary or secondary species of interest for hunting or scouting. Waterfowl includes Canada/white/white-fronted geese, ducks, and cranes. Upland game birds include pheasant, grouse, and Merriam's turkey. More than one species could be selected; therefore, the total (n = 1677) is greater than the number of surveys submitted (n = 720).

In the following sample heat maps (Figures 4 to 11), we present aggregated observation data by WMU for the following metrics: average numbers of moose and elk observed per hour; average number of white-tailed deer bucks per 100 does; average number of mule deer fawns per 100

does; and total numbers (and average numbers per hour) of Canada geese and pheasants observed.

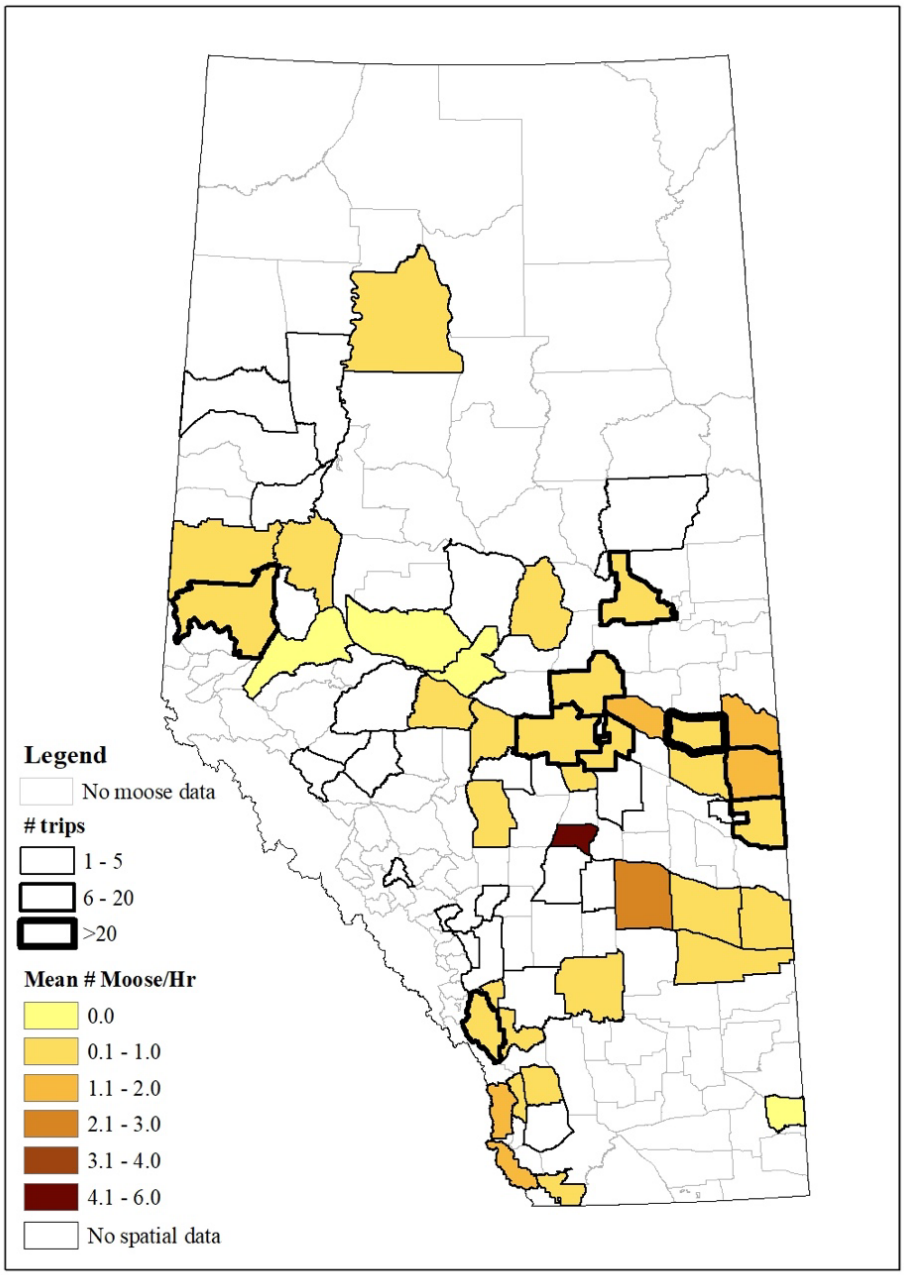

Figure 4. Mean number of moose observed per hour in Alberta WMUs, based on the trips (surveys) completed in ABHuntLog by hunters between September 1 and December 31, 2021. The number of trips is based on all trips, including those with and without spatial data collected.

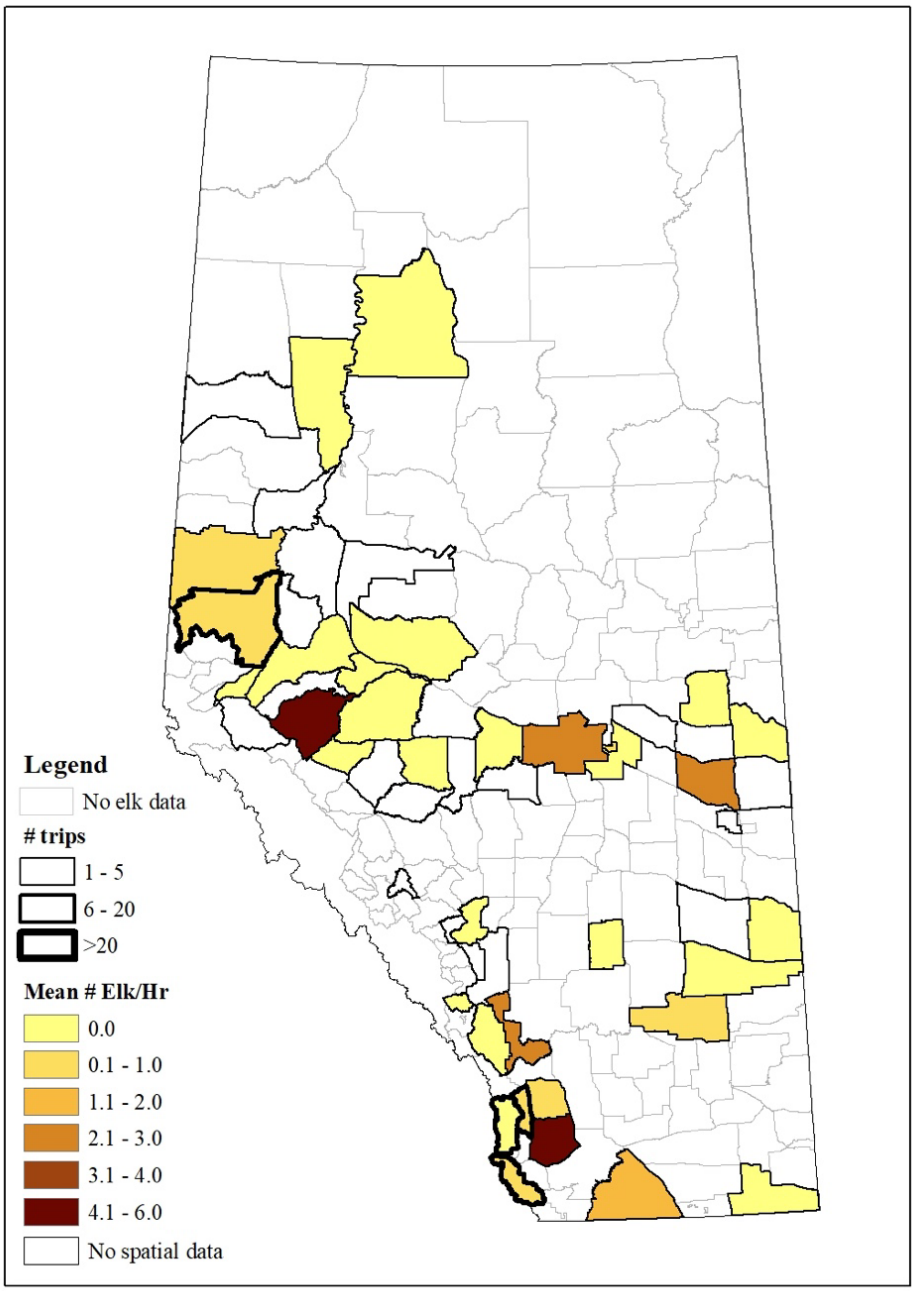

Figure 5. Mean number of elk observed per hour in Alberta WMUs, based on the trips (surveys) completed in ABHuntLog by hunters between September 1 and December 31, 2021. The number of trips is based on all trips, including those with and without spatial data collected.

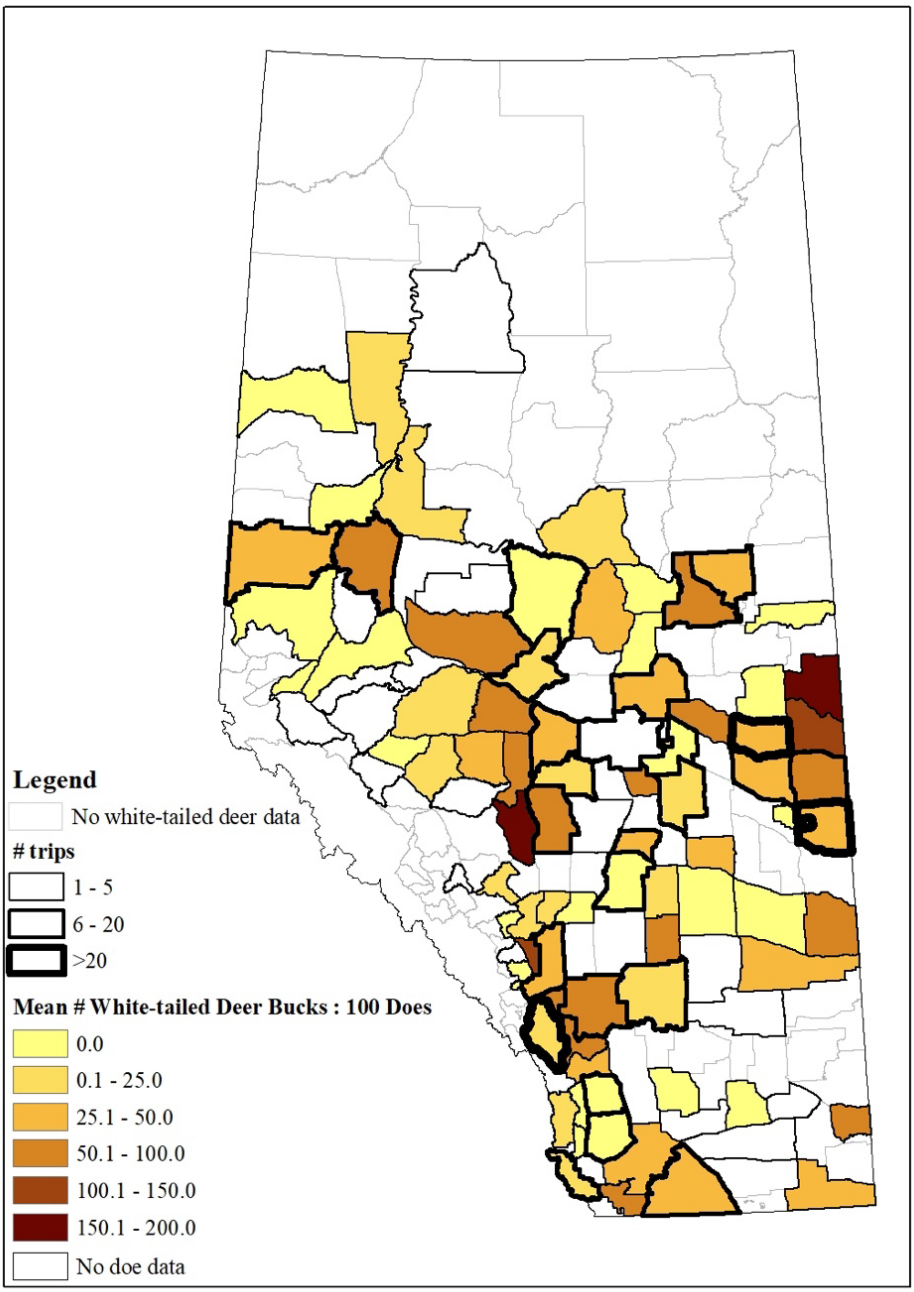

Figure 6. Mean number of white-tailed deer bucks observed per 100 does in Alberta WMUs, based on the trips (surveys) completed in ABHuntLog by hunters between September 1 and December 31, 2021. The number of trips is based on all trips, including those with and without spatial data collected.

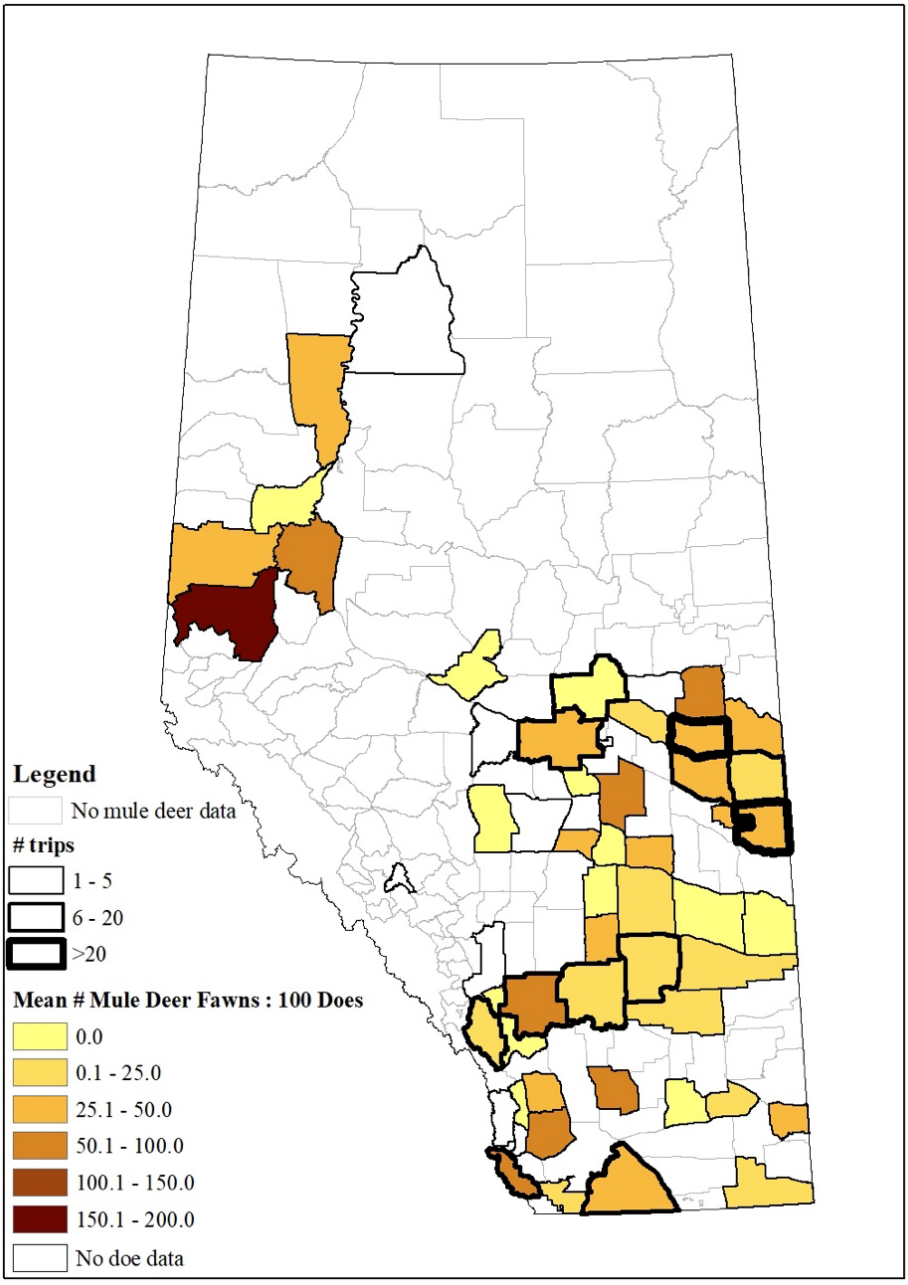

Figure 7. Mean number of mule deer fawns observed per 100 does in Alberta WMUs, based on the trips (surveys) completed in ABHuntLog by hunters between September 1 and December 31, 2021. The number of trips is based on all trips, including those with and without spatial data collected.

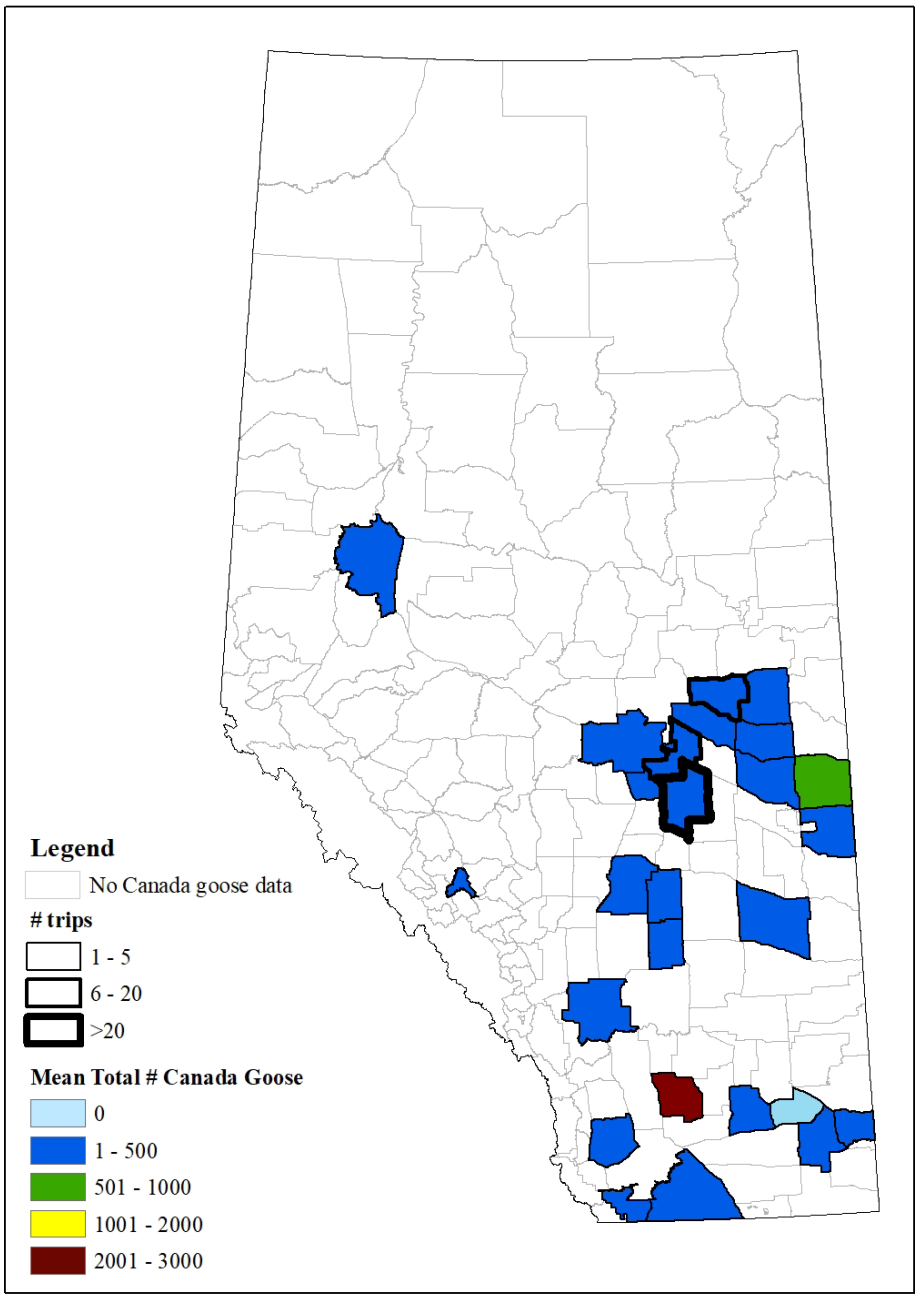

Figure 8. Mean total number of Canada geese observed per trip in Alberta WMUs, based on the trips (surveys) completed in ABHuntLog by hunters between September 1 and December 31, 2021. The number of trips is based on surveys with and without spatial data.

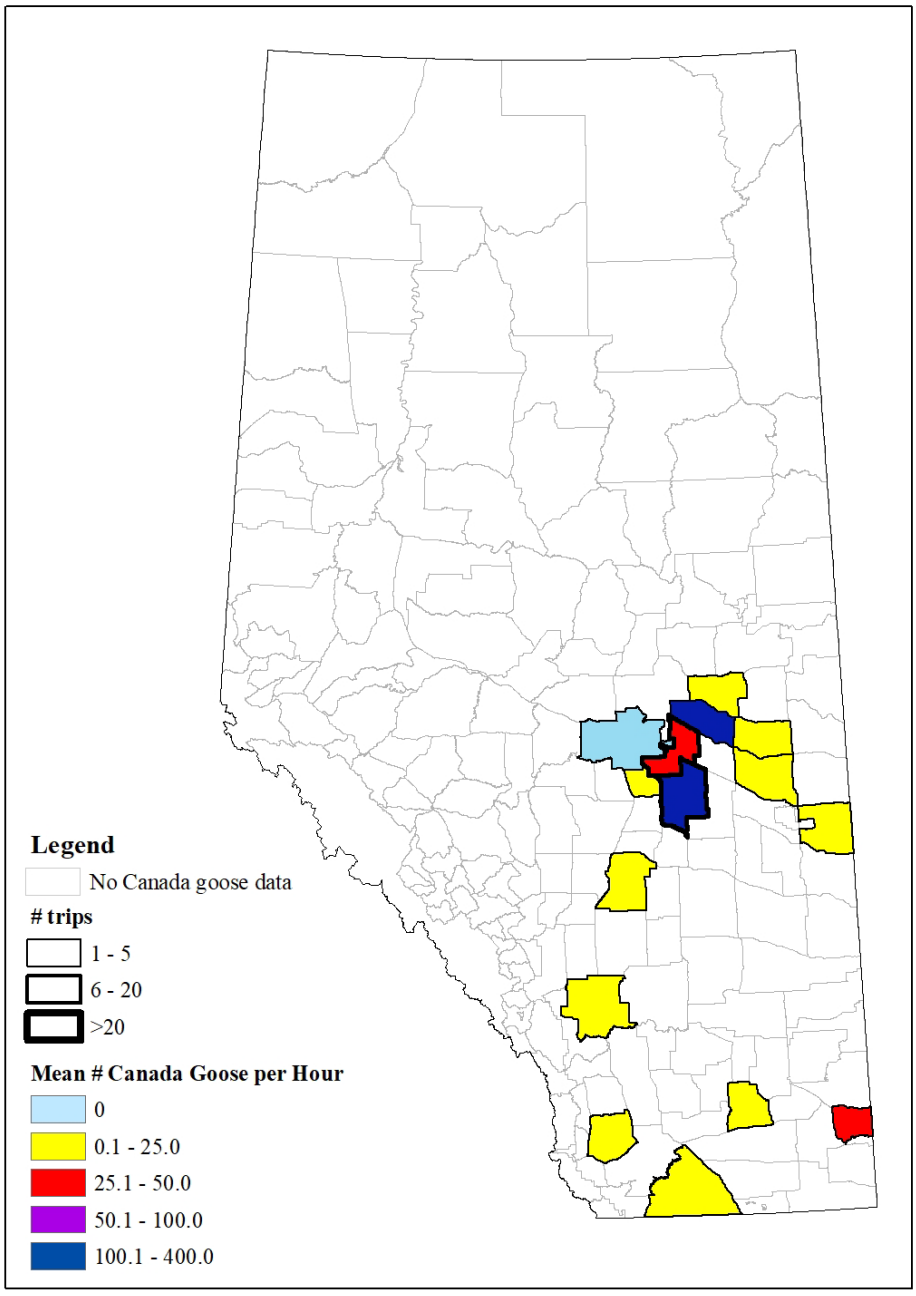

Figure 9. Mean number of Canada geese observed per hour in Alberta WMUs, based on the trips (surveys) completed in ABHuntLog by hunters between September 1 and December 31, 2021. The number of trips is based on surveys with spatial data.

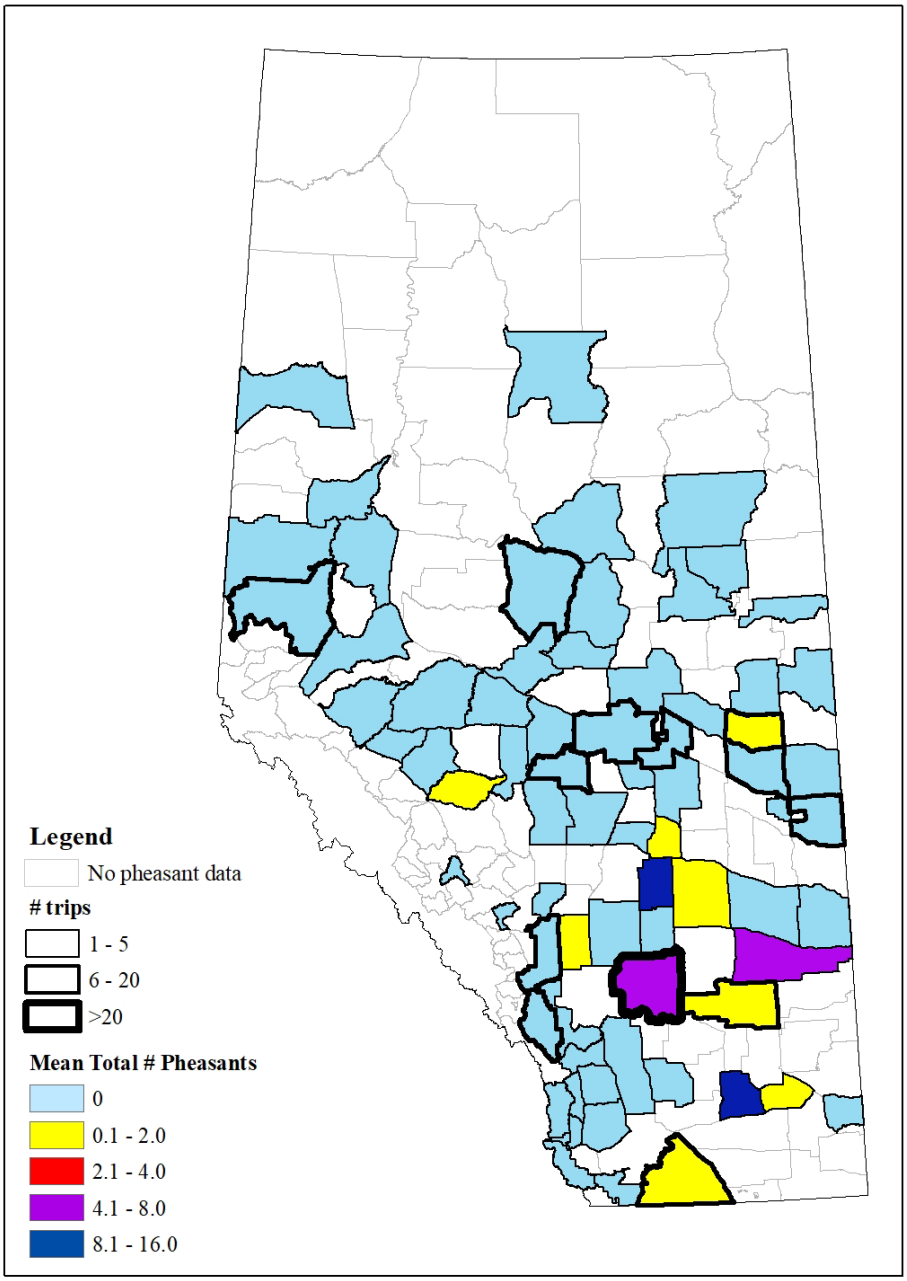

Figure 10. Mean total number of pheasants observed per trip in Alberta WMUs, based on the trips (surveys) completed in ABHuntLog by hunters between September 1 and December 31, 2021. The number of trips is based on surveys with and without spatial data. WMUs with zero pheasants observed are over-represented because they include all upland game bird hunters (e.g., grouse).

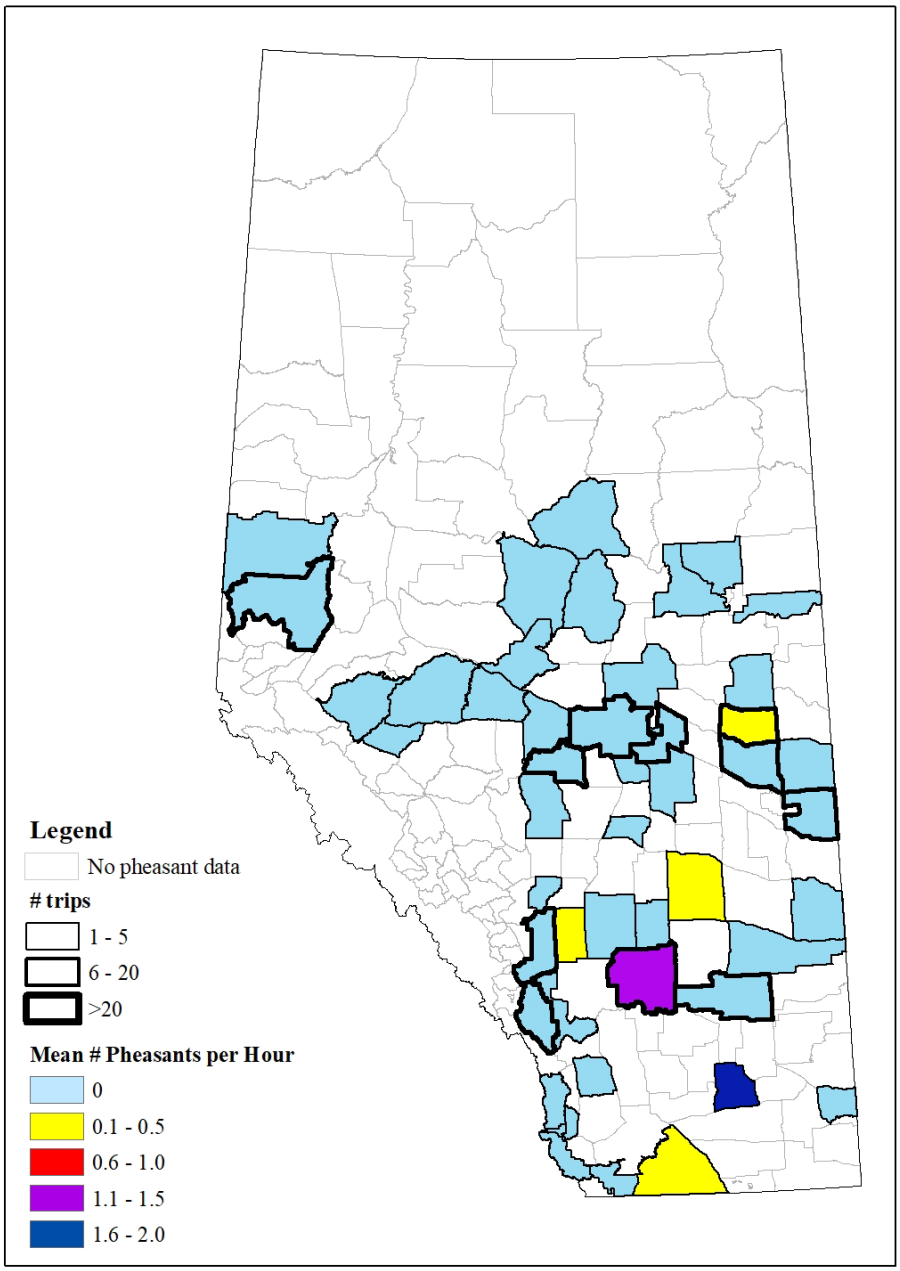

Figure 11. Mean number of pheasants observed per hour in Alberta WMUs, based on the trips (surveys) completed in ABHuntLog by hunters between September 1 and December 31, 2021. The number of trips is based on surveys with spatial data. WMUs with zero pheasants observed per hour are over-represented because they include all upland game bird hunters (e.g., grouse).

Conclusions

ACA has developed a cooperative partnership with iHunter and U of A to deliver a survey to Alberta hunters through iHunter, an app with roughly 70,000 users in Alberta. ABHuntLog is an inexpensive and accessible citizen science tool for collecting large-scale, long-term harvestable wildlife observational data. Alberta hunters have expressed an interest in providing meaningful data to assist in the management of game species, identify conservation needs, and provide better information to help with planning future hunts. ABHuntLog enables anonymous, self-submission of observational data using the iHunter Alberta app that will help achieve these outcomes, as well as provide a dashboard summary of harvest information that individual hunters can use for planning future hunts and completing their annual mandatory reporting requirements to Alberta Environment and Parks (AEP). We recognize the importance of building trust in the hunting community. User data are protected on secure servers and are associated only with anonymous identification numbers; furthermore, ABHuntLog does not collect exact locations of observations or harvests. Several sample summaries by WMU of the 2021 data are available on ACA's website (ABHuntLog.ca). In future years and with enough data, we will provide aggregated summaries of all relevant metrics (e.g., observation rate, age ratios, and sex ratios) for all species surveyed in ABHuntLog.

Communications

- ABHuntLog has been promoted in numerous venues:
    - magazines: *Conservation Magazine*, *Alberta Outdoorsmen*, *Crowsnest Pass Herald*, and *Alberta Discover Guide*
    - newsletters: ACA, Alberta Hunter Education Instructors' Association, Alberta Professional Outfitter Society, and Harvest Your Own
    - Harvest Your Own podcast episode
    - presentations to AEP staff
    - ACA's social media platforms
    - Google ad campaign
    - iHunter in-app messaging
    - *Let's Go Outdoors* with Michael Short

Key Contacts

- Mark Stenroos and Erik Benner – iHunter
- Dr. Vic Adamowicz – University of Alberta
- Jordan York – Métis Nation of Alberta

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Photos

Photo 1. ACA staff (Sue Peters) testing the ABHuntLog feature within iHunter Alberta smartphone app in WMU 248. Photo: Vern Peters.

Photo 2. Pronghorn are one of the species for which observational data can be recorded using ABHuntLog in Alberta. Photo: Paul Jones.

Photo 3. Mule deer are one of the species for which observational data can be recorded using ABHuntLog in Alberta. Photo: Paul Jones.