Alberta Conservation Association

2019/20 Project Summary Report

Project Name: Working with Alberta's Trappers to Monitor Furbearer Population Trends

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Partnerships

Alberta Environment and Parks

Alberta Trappers' Association

Key Findings

- The logbook program continued to focus on marten so that species-specific information collection could involve a wide range of trappers. A total of 214 logbooks were received and 199 analyzed. The response rate was up by 26% from the previous year.
- On average, trappers set 33 marten traps for about 43 days, harvesting an average of 11 marten. The average Catch Per Unit Effort was 0.63 marten per 100 trap nights (range 0–2.24, $SE = 0.04$), which equates to one marten for every 159 trap nights.
- A digital version of the logbook became available to trappers at the end of the 2018/19 trapping season and 139 trappers (65%) submitted logbooks online. The online form simplifies the process as their entry goes directly into a database, reducing additional staffing needs.

Abstract

Alberta Conservation Association was asked to assist Alberta Environment and Parks and Alberta Trappers' Association with a pilot project to develop logbooks for trappers to record information about their trapping activities and fur harvesting results. After revisions to the logbook from 2016/17 and a concerted communication effort with trappers, the number of logbooks submitted has increased with each season. Trappers spent an average of 414 hours on trapping-related activities during 2018/19, with 42% of that time dedicated to setting and checking traps. On average, trappers set 33 marten traps for about 43 days, catching one marten for every 159 trap nights of effort.

Introduction

In 2014, Alberta Trappers' Association (ATA) developed a detailed logbook for volunteer trappers to record trapping activities and species harvest, which will help to track population trends over time. Starting in 2017, Alberta Conservation Association (ACA) began working alongside ATA to continually improve their data collection and analysis process each year. For the 2018/19 season, logbook entries once again focused on marten, given their popularity, widespread distribution, and a harvest pattern that is uncomplicated by a set quota. ATA adopted a method for trappers to determine age class of marten based on size of the temporal muscles of the skull (Magoun et al. 1988; Flynn and Schumacher 2016). We are assisting trappers with testing the accuracy of this method as applied by a diverse citizen science group.

Methods

Data collected with the logbook included location (Registered Fur Management Area number), contact information, and an estimate of the number of hours spent in various trapline-related activities each month (e.g., preparation, setting, and checking traps). One logbook was submitted per trapline. Trappers were also asked to document their harvested marten by sex (male/female) and age (juvenile/adult) using the skull muscle method (Magoun et al. 1988; Flynn and Schumacher 2016), as well as their trapping effort by providing an estimate of the average number of traps set at any given time and the average length of time (days) that those traps would remain set. Harvest information was used to calculate ratios of males to females and

juveniles to adult females in the harvest. From the estimate of trap nights (number of traps set multiplied by number of days set), we calculated a catch per unit effort (CPUE; number of marten caught per 100 trap nights) for each trapper. An interim report was prepared for internal ATA use, with results summarized at the provincial, natural region, and fur management zone (FMZ) levels.

Results

A total of 214 logbooks were received by July 29, 2019 from the 2018/19 trapping season. Of those, 65% were submitted via the new online logbook option. After removing duplicates (multiple partners from one trapline) and unusable submissions, we were able to analyze data from 199 RFMAs (Figure 1).

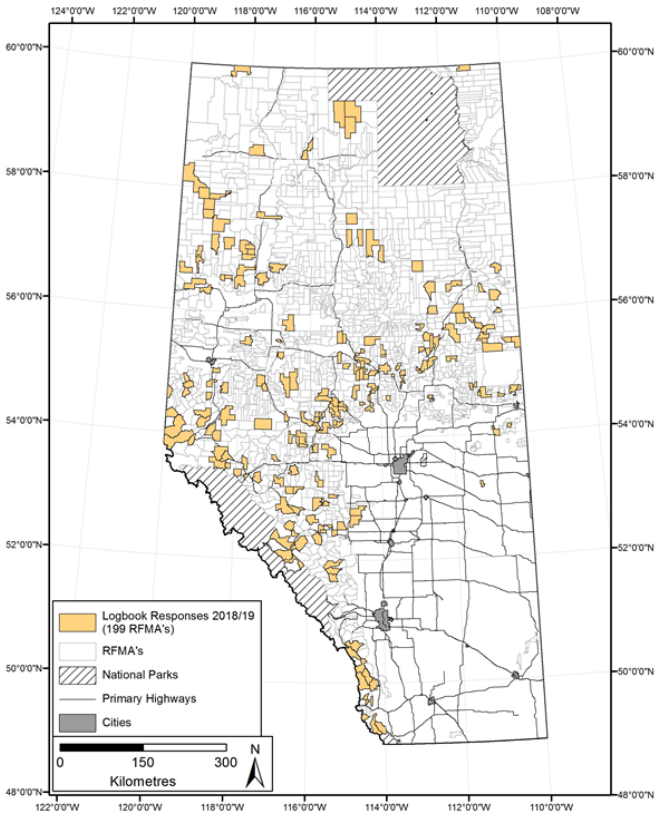

Figure 1. The spatial distribution of logbooks provided robust marten data for the 2018/19 trapping season at the provincial and natural region scales. An increase in participation from trappers in northeastern Alberta would allow for reporting at the level of fur management zone.

Across the province, the mean monthly time spent on trapping activities ranged from five hours in June to 85 hours in December (Figure 2), with a combined annual average of 414 hours spent per trapline on all trapping-related activities. Nearly half of all time spent was used on setting or checking traps (42%), followed by preparation (18%), handling fur (16%), scouting (15%), and cabin maintenance (9%).

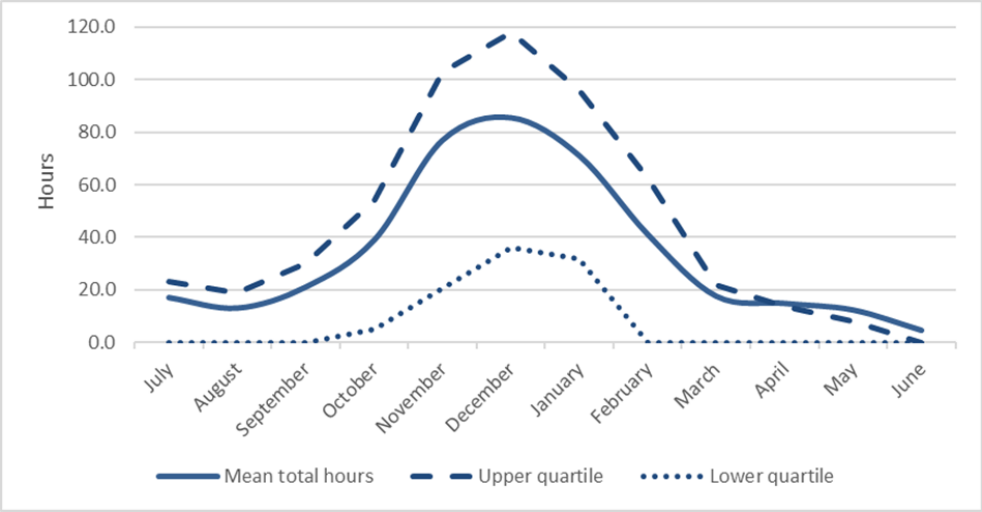

Figure 2. The number of hours spent on trapping activities varied throughout the year in 2018/19, peaking in December when trapline access is good and most pelts reach prime condition.

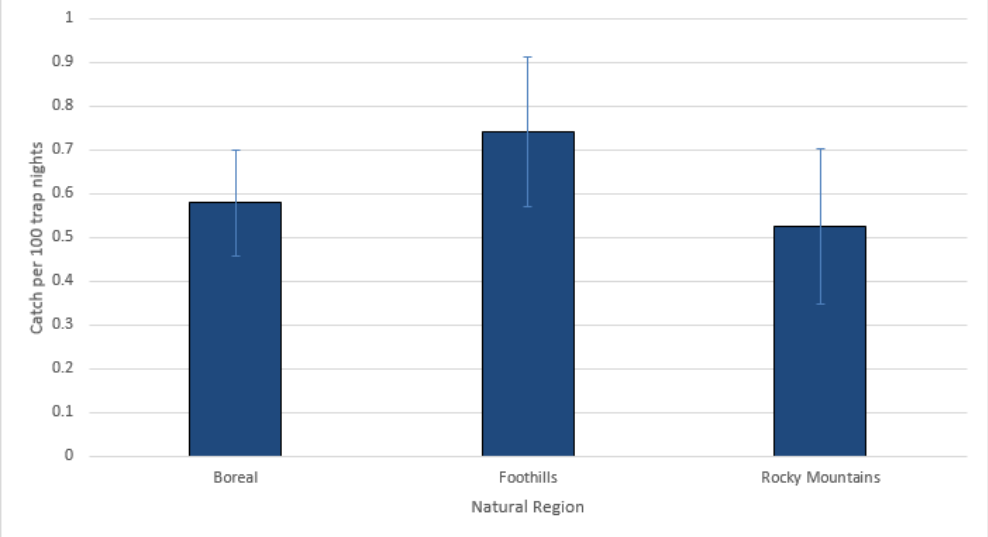

Figure 3. Average number of marten caught per 100 trap nights (mean ±

2 *SE*) for 2018/19 in each natural region.

The number of logbooks submitted generally produced good data at the provincial and natural region levels (Figure 3) but was often less precise than we'd like to see for breaking the numbers down by fur management zone. The average (mean) CPUE across the province was 0.63 marten per 100 trap nights (range 0–2.24, S.E. = 0.04). The ratio of male to female harvest across the province was 2.4 males for each female. Sample sizes have continued to improve, and this is allowing for data analysis by natural region, but sample size still needs to increase before we can consider all indices at the FMZ level. During the 2019/20 season, trappers began recording similar data for species with a quota on harvest (wolverine, otter, lynx, and fisher). We plan to analyze these data in 2020/21.

Conclusions

There has been a sizeable increase in logbook participation, which has allowed us to dig deeper into the marten data; however, we still need a larger sample size before we will be confident in reporting results by fur management zone. We were unsure how many trappers would opt for the online data submission option and were pleasantly surprised to see that nearly two thirds of the logbooks came in this way. Use of that option will help to improve efficiency, particularly as participation grows. Given our results from the trapper-based marten aging trial, and recent published literature that brings into question the value of using a harvest ratio of juveniles per adult female, we have limited confidence in that ratio as an indicator of harvest sustainability. We have far more confidence in using the ratio of males to females in the harvest. To this point, we haven't seen anything in the data at the provincial or natural region level that causes us concern in terms of harvest sustainability for marten. However, in the future, combining demographic information of harvested marten along with trapping effort should allow us to conduct population modelling and trend monitoring over time.

Communications

Presentations

- A poster presentation on trapper marten aging was communicated at the International American Fisheries Society and the Wildlife Society 2019 Joint Conference in Reno, Nevada.
- ATA AGM, logbook highlights from 2019.

Other

- Newsletter highlighting project progress in June 2019 and November 2019.
- Individual trapper summaries were sent to all those who submitted a logbook by the deadline.

Literature Cited

Flynn, R.W. and T.V. Schumacher. 2016. Using sex and age of martens in the North Pacific Coast: using skull length and temporal muscle coalescence. Alaska Department of Fish and Game, Wildlife Research Report ADF&G/DWC/WRR-2016-5, Juneau. 20 pp.

Magoun, A.J., R.M. Gronquist, and D.J. Reed. 1988. Development of a field technique for sexing and aging marten. Alaska Department of Fish and Game, Final Report.

Photos

ACA staff sharing results from our marten aging trial with an attendee at the 2019 conference of The Wildlife Society in Reno. Photo: C. Rasmussen

Marten are a beautiful and much-desired harvestable species in Alberta. Photo: M. Jokinen