

## **Briefing Note: Use of Trapper Logbooks to Evaluate Furbearer Population Trends in Alberta**

Prepared for: Alberta Chapter of the Wildlife Society

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### **Issue**

Harvest records alone are insufficient for detecting reliable population trends in Alberta's furbearer species. To address this, the Alberta Trappers Association (ATA), with support from the Alberta Conservation Association (ACA), initiated a standardized trapper logbook program that incorporates trapping effort into assessments of population trends and harvest sustainability.

### **Background**

Monitoring furbearer population trends across large spatial areas is challenging due to variation in trapper behavior, market conditions, and incomplete reporting. Historically, provincial harvest records (export permits, registrations, and reporting associated with licence renewal) have been used to infer trends, but these metrics do not account for trapping effort and may misrepresent true population changes.

To improve monitoring, ATA began collecting standardized trapper logbooks in winter 2017/18, with ACA leading data management and analysis. The program began with marten and expanded as follows:

- 2017/18 – marten
- 2019/20 – lynx, fisher, otter, wolverine
- 2021/22 – wolf

Many trappers were already maintaining detailed personal records; the standardized system now enables consistent tracking of catch-per-unit-effort (CPUE) and allows analysis at meaningful spatial scales. Recent ACA reports summarize key indicators (CPUE, male:female ratios, etc.) and evaluate whether current volunteer participation is sufficient to provide reliable results at provincial, natural region, and Fur Management Zone (FMZ) levels.

### **Key Findings**

#### **1. Harvest Records Alone Are Unreliable Indicators**

By 2019/20, comparisons between harvest totals and logbook-derived metrics showed clear discrepancies:

- Provincial marten fur exports declined from 2017/18 to 2019/20.
- Marten CPUE increased over the same period.

This suggests that factors such as market prices or trapper activity—not marten abundance—drove the decline in exports. Over the last decade, harvest totals have largely mirrored fur price trends, highlighting the limitations of using harvest data as a population index.

#### **2. CPUE Provides Valuable Insight but Is Limited by Sample Size**

Logbook-derived CPUE can provide a more accurate index of species availability and has tracked expected population patterns. However, confidence in the results varies by species, region, FMZ, and year.

### Species-level summary:

- Marten: Six of the eight years analyzed achieved the desired level of precision for CPUE at the provincial scale. Precision showed promise for the Boreal Natural Region but was weaker across FMZs. CPUE and population-model results indicate that Alberta marten populations have been generally stable to increasing.
- Fisher: Results show substantial uncertainty, and desired precision was not achieved in any year. Male:female ratios show potential value, but additional logbooks are needed.
- Lynx: Provincial CPUE is promising, and results from the Boreal Natural Region show strong potential. A modest increase in logbook submissions may allow for monitoring through the lynx/hare cycle.
- Otter: Data show high uncertainty with wide confidence intervals.
- Wolverine: Similar substantial uncertainty exists. Given the low number of trappers targeting wolverines, obtaining adequate sample sizes may remain challenging.

### 3. Logbook Submissions Peaked in 2024/25, but More Participation Is Needed

Strong trapper participation is essential for producing robust indices. Between 2018 and 2025, logbooks were submitted from over 400 Registered Fur Management Areas (RFMAs), though participation varies annually. The average number of logbooks per year is 176, with 236 submitted in 2025.

Analyses suggest that a minimum of 300 logbooks per year is required for reliable FMZ-level marten estimates. Most trappers report on marten, but fewer provide data for other species.

### Implications

- Incorporating CPUE and other logbook-derived indices improves understanding of population trends and long-term sustainability, addressing known limitations of relying solely on harvest totals.
- Both CPUE and population reconstruction modelling indicate that marten populations did not decline during recent periods of lower fur harvest.
- Increasing trapper participation is critical for achieving sample sizes needed for robust FMZ-scale analyses. Building and maintaining trapper trust—particularly around data security and program intent—will be essential.

### Recommendations

1. Increase trapper engagement to raise annual logbook submissions to at least 300 per year. Determine sample-size requirements for species other than marten.
2. Refine and expand population reconstruction modelling as more data and auxiliary information become available. Identify additional research needs, such as region-specific harvest probabilities and natural mortality estimates.
3. Enhance communication with stakeholders to demonstrate the value of trapper reporting, encourage participation, and address concerns regarding data security and program objectives.