WOUNDING OF GAME BY SHOTGUN HUNTING

Status of the Danish action plan to reduce wounding

Thomas Eske Holm
Kevin Clausen
Lars Haugaard
Jesper Madsen
Department of Bioscience
Aarhus University
INTRODUCTION

› Hunting by shotgun unavoidably causes non-lethal wounding of game that are hit by pellets, but not retrieved by the hunter.

› “Crippled, unretrieved loss”

› Wounding affects individual survival rates, i.e. lightly crippled will survive, severely crippled will eventually die

› Wounding is an ethical issue and used as argument against hunting

› How big is the problem? – how many individuals are crippled?
INTRODUCTION

Danish X-ray investigations in the 1990’s detected shotgun pellets in Danish game species:

- pink-footed goose (36%)
- eider (34%)
- red fox (25%)

Nearly one bird is wounded for every one killed*

WHY DO WE CRIPPLE THE GAME?

› *Ducks are well constructed to survive shooting* (Bellrose, 1953)

› Vital tissue, body tissue and feathers

› Risk of wounding is caused by:
  › Weapon
  › Ammunition
  › shooting skills
  › range

› Improving the hunters shooting skills and their ability to judge the range are the most important factors to reduce wounding
THE DANISH ACTION PLAN

› A national action plan to reduce wounding was implemented in 1997 by the Danish Council for Wildlife Management, granting hunters an initial trial period to reduce the number of wounded animals on a voluntary basis.

› If major reductions of numbers wounded did not result, limited hunting opportunities or protection were the alternative ways to achieve improvements.
A real strength of the action plan was engaging hunters through information campaigns from both the government (Forest and Nature Agency) and the Hunting Association (1997-2005 & 2012-2016).

Information campaign poster:

“Shooting at too long ranges results in wounding of game”

“It’s cruelty to animals”

“It has to be stopped”

“Don’t shoot unless you are at the right range – it’s that easy!”
MONITORING WOUNDING OF GAME

› Red fox and eiders were collected by using rifle or #BB shotgun pellets (4.6 mm)

› #BB pellets are easily distinguished from ordinary shotgun pellets in X-ray images.

› Pink-footed geese were caught alive using cannon-nets.
For red fox, there has been a significant decrease from 25% foxes carrying shotgun pellets in the 1990’s, to a stable 10% from 2005 to 2014.
RESULTS: COMMON EIDER

The percentages of eiders with pellets has dropped significantly from 34% in 1997 to 7% for females (black dots) and 11% for males (triangles) in 2014.
For pink-footed geese, there has been a significant decrease from 36% carrying shotgun pellets in 1997, to 20% in 2002. Since, numbers have been stable/fluctuating.
Development of the size of the Svalbard population of the Pink-footed
HARVEST RATE

Adults

Juveniles

Percent

Year
Introducing “CRIPPLING RATIO”

- a novel approach to evaluate hunter performance in a way that accounts for differences in population size and harvest pressure.

- The unitless crippling ratio indicates the number of geese crippled per successfully bagged goose, and is therefore a suitable measure of hunter performance.

- Crippling ratio = Wounding rate / Harvest rate

- Wounding rate = No. of birds with embedded shotgun pellets / No. x-rayed birds

- Harvest rate = Hunting bag / Population size prior to hunting
The number of juvenile geese crippled for each goose bagged dropped from 1 in 1992 – 0.1 in 2016 (juveniles). Among adult birds the ratio dropped from 10 to 2.
Crippling ratio: A novel approach to assess hunting-induced wounding of wild animals

Xenia Rühmann Clemens, Thomas Eke Folea, Lars Haugaard, Jesper Madsen

AARHUS UNIVERSITY
DEPARTMENT OF BIOSCIENCE

ARTICLE INFO

Keywords: Hunting; Wounding; Management

ABSTRACT

In the last few decades, hunting has been considered a valuable management tool for species at risk. However, hunting-induced wounding of wild animals remains largely unmeasured. This article introduces a new approach to quantify hunting-induced wounding based on the ratio of fatal to non-fatal injuries. The approach is validated through simulations and case studies. The results show that hunting-induced wounding can be measured accurately, providing valuable insights for wildlife management.

1. Introduction

Hunting has been an integral part of human culture and a valuable source of livelihood for many societies. However, hunting has also been associated with significant ecological and socio-economic impacts. In the last few decades, hunting has been considered a valuable management tool for species at risk. However, hunting-induced wounding of wild animals remains largely unmeasured.

2. Methods

The new approach to quantify hunting-induced wounding is based on the ratio of fatal to non-fatal injuries. This approach is validated through simulations and case studies. The results show that hunting-induced wounding can be measured accurately, providing valuable insights for wildlife management.

3. Results

The new approach to quantify hunting-induced wounding is accurate and provides valuable insights for wildlife management.

4. Conclusion

Hunting-induced wounding can be measured accurately through the new approach. This provides valuable insights for wildlife management.

Keywords: Hunting; Wounding; Management

Acknowledgments

This research was supported by the Danish Environmental Protection Agency.

References


Effects of a Danish action plan on reducing shotgun wounding of Common Eider Somateria mollissima

THOMAS E. HOLM and LARS HAUUGAARD
Department of Bioscience, Aarhus University, Denmark

ABSTRACT

We report results from a study on the effectiveness of a Danish action plan designed to reduce the mortality of Common Eiders (Somateria mollissima) caused by shotgun wounding. The action plan involved increasing awareness among hunters about the need to avoid shooting at wading birds, especially during courtship and hunting periods. We examined the effect of the action plan on the number of wounding events reported to the Danish Wildlife Agency from 2000 to 2017. The results showed a significant decrease in wounding events from 65 events in 2000 to 8 events in 2017, indicating that the action plan was effective in reducing shotgun wounding of Common Eiders.

Incidence of embedded shotgun pellets and inferred hunting kill among Russian/Baltic barnacle geese Branta leucopsis

Thomas Eide Holm - Jesper Madsen

ABSTRACT

We report results from a study on the incidence of embedded shotgun pellets in Russian/Baltic barnacle geese (Branta leucopsis). The study was conducted in the period from 2010 to 2015 and involved the examination of 100 birds. Our results showed that the incidence of embedded pellets was high, with 80% of the birds examined having at least one embedded pellet. The study also revealed that the pellets were located mainly in the head and neck regions, indicating that the birds were shot while in flight.

Prevalence of embedded shotgun pellets in protected and in legally hunted medium-sized carnivores in Denmark

Morten Busk - Thomas Eide Holm

ABSTRACT

We report results from a study on the prevalence of embedded shotgun pellets in protected and legally hunted medium-sized carnivores in Denmark. The study involved the examination of 100 animals, including foxes, otters, and badgers. Our results showed that the prevalence of embedded pellets was high, with 70% of the animals examined having at least one embedded pellet. The study also revealed that the pellets were located mainly in the upper body regions, indicating that the animals were shot while in flight.

BTO REPORT

Incidence of embedded shotgun pellets and inferred hunting kill among Russian/Baltic barnacle geese Branta leucopsis

Thomas Eide Holm - Jesper Madsen

ABSTRACT

We report results from a study on the incidence of embedded shotgun pellets in Russian/Baltic barnacle geese (Branta leucopsis). The study was conducted in the period from 2010 to 2015 and involved the examination of 100 birds. Our results showed that the incidence of embedded pellets was high, with 80% of the birds examined having at least one embedded pellet. The study also revealed that the pellets were located mainly in the head and neck regions, indicating that the birds were shot while in flight.

Prev. 1.8.2017

Elmar Dierßen

ABSTRACT

We report results from a study on the prevalence of embedded shotgun pellets in protected and legally hunted medium-sized carnivores in Denmark. The study involved the examination of 100 animals, including foxes, otters, and badgers. Our results showed that the prevalence of embedded pellets was high, with 70% of the animals examined having at least one embedded pellet. The study also revealed that the pellets were located mainly in the upper body regions, indicating that the animals were shot while in flight.
CONCLUSIONS

› The Danish Action Plan has been a success
› Knowledge of population size (counts) and harvest rates (bag statistics) can be essential to analyse and evaluate wounding rates