Wildlife Biology

Appendix 1

Number of hunters in Denmark 1980–2011

Average: 169 284

Range: 159 330 – 176 789

Standard deviation: 4682

Data were retrieved from the harvest statistics database.

Calculation of specific hunting harvest correction factors

The following description is taken from Asferg (2008). To calculate an estimated hunting harvest for hunters with addresses in a given municipality corrected for those individuals who have failed to submit their annual hunting harvest return, the following information is required:

A = number of persons with hunting license

B = number of harvest reports from hunters

C = the uncorrected hunting harvest returned by hunters reporting their annual harvest

D = number of hunters submitting a hunting harvest return

E = proportion of hunters with a hunting harvest

While A, B, C and D are derived from the reports from hunters, E is derived from questionnaire inquiries amongst those hunters that did not report any harvest (carried out in 2003 and 2006). The corrected hunting bag (UDB) for each municipality is then calculated as:

$$UDB = C + ((A - B) \times E \times (C/D)) \tag{1}$$

where:

$(A - B)$ = Number of hunters that did not report

$(A - B) \times E$ = Number of hunters that did not report, but actually had a harvest to report

(C / D) = Hunting harvest per hunter in the municipality.

The term $(A - B) \times E \times (C / D)$ corresponds to the number of game, harvested by hunters not reporting, and in order to obtain the total, i.e. the corrected, hunting harvest, this number must be

added to the harvest, which is derived by hunters that reported their own harvest, i.e. C. The calculation takes into account, the different proportions of hunters with and without reports, however, under the assumption that hunters not reporting but who have a harvest have the same average harvest as hunters that have reported their returns. In the calculation of the corrected hunting harvest, it is appropriate to reformulate Eq. 1 to:

$$UDB = C \times (1 + (A - B) \times E \times 1 / D) \tag{2}$$

where the term $(1 + (A - B) \times E \times 1 / D)$ is the correction factor, that must be multiplied by the uncorrected hunting harvest. The national annual harvest is then calculated as the sum of all the corrected hunting harvest totals for each of the 98 Danish municipalities.

Outline methods used by observers to gather point count data in Denmark

Each observer selects a fixed route by choice with 10–20 points. Individual points are each placed at a minimum distance of 200 m in 'closed' habitats such as forest and 300 m in farmland. On each point all birds and mammals are counted during a period of exactly 5 min without consideration of distance. As a main rule birds are detected and identified to species without binoculars. However, binoculars are used as assisting remedies in case of doubt. Observers are advised to undertake counts during mornings, when birds and mammals are most active and in fair weather (no rain and strong winds). For full details see Heldbjerg (2005).

References

Asferg, T. 2008. Manglende indberetninger til vildtudbyttestatistikken i Jagtsæsonen 2006/07. − Natl Environ. Res. Inst.. NERI Tech. Rep. no. 656. [In Danish with English summary].

Heldbjerg, H. 2005. Monitoring population changes of common birds in Denmark 1975–2005. − Dansk Ornitol. For. Tidsskr. 99: 182–195. [In Danish with English summary].