

3.1.5. Drive counts

Objective

Move and count all the animals of a known surface area to estimate local density.

Measure estimated

Population density and, in some species, population structure.

Applicability

Potentially all ungulates.

Methodology

Drive counts are frequently used to estimate population densities in ungulates inhabiting forested areas (Dzieciolowski 1976, Borkowski et al. 2011). Drive counts may be conducted as drives with beaters (with or without dogs, ENETWILD consortium et al. 2019). All beaters and fixed position observers on the border of the drive do record all animals seen during the drives. This may also be conducted during drive hunts (usually driven with beaters and dogs), where the hunters in hides record all wild ungulates seen. Hunters can be used as experienced observers and therefore the hunting activity, if carried out by instructed and motivated personnel, can be a cost-effective alternative to monitor ungulates (Mysterud et al. 2007). The method is still widely used in several countries (e.g., Italy, Poland, Portugal, Switzerland) even if some authors recognised that it suffers of an increasing rate of underestimation with the increasing of population density (Maillard et al. 2010, Morellet et al. 2011). Drive counts by hunters is a method currently used to monitor wild boar population in Spain, the Czech Republic, and some parts of Poland (Plhal et al. 2010, Borkowski et al. 2011, Segura et al. 2014).

Dependent on several conditions, many wild ungulates may be missed. Thus, this method has a high effort with low reliability (but compare Borkowski et al. 2011) and it is very difficult to estimate the precision and accuracy. However, In Italy, the accuracy of the method has been tested using capture–mark–recapture techniques (radio-collared deer), and the average underestimate is estimated to be 20–25% of the actual population (Apollonio, pers. comm.).

Evaluation

- **Pro:** experienced volunteers, easy to conduct, also possible within regular hunting activities.
- **Con:** high personnel effort, dependent on experience

and number of helpers (sometimes also dogs needed), dependent on population density and experience of animals, during hunt biased by willingness of hunters, mainly to be conducted during winter/hunting season. Need to assess double counts.

- **Accuracy:** highly dependent from context and experience of volunteers.

- **Habitat:** well applicable in forest and mixed landscapes, possible in open landscapes (but other methods perform better).



