

### 3.1.2. Vantage point counts

#### Objective

By observing individuals / groups from a vantage point (e.g., pick of hill / mountain, high seat, random point) it is possible to estimate local density by using both total counts and counts in sample areas.

#### Measure estimated

Population density and population structure.

#### Applicability

Potentially most wild ruminant.

#### Methodology

In all cases, the assumption is that all animals present in an area are detected by the observers and that one individual can be observed only by one observer. The second part of the assumption can be partially relaxed if the observers take note of the direction and time of animals moving out from their view. After the data recording, the manager must exclude the potential double-counting to assess the density. A variant of such methodology is to attract the individuals of the target species by using artificial feed and/or salt licks (Morellet et al. 2011).

The main drawback of this method is that sampling error may be large and difficult to assess. For this reason, this method may be unfit to comparing the ruminant densities of different areas. By using random point method and distance sampling (see 3.1.1) to assess the covered area, the managers can also estimate the coefficient of variation (CV) and provide relative density, to our knowledge, there was just one attempt using this method for wild boar (Passon et al. 2012, Keuling et al. 2014).

#### Evaluation

- **Pro:** low costs in relation to the efforts.
- **Con:** risk of underestimation in dense habitats, and difficulty to delimit the area in which counted animals are referred to.
- **Accuracy:** potentially high in open areas, limited in dense environments.
- **Habitat:** open (esp. hilly and mountainous, marshes, artic), possible in mixed landscapes, less useful in large forest areas (high effort, only as distance sampling).



