

Karp, D. and Gehr, B. 2020. Bad hare day: very low survival rate in brown hare leverets. – Wildlife Biology 2020: wlb.00645

Appendix 1

(i) Fates of the tagged individuals

While monitoring the fate of 65 individual leverets we found that 32 (51%) individuals died during the period they were monitored, whereas 16 (25%) individuals survived the monitoring period and were sighted at least once after tag loss. In 15 cases (24%) the fate of the animal was unknown or data was missing, and the survival information was thus right-censored.

Remains like blood, body parts or whole carcasses (10) were found in 21 cases. For another 11 cases where we did not find any remains or tracks we were able to infer death by apparent evidence such as large distances between normal home range of the animal and the tag's detection location in combination with the age of the individual (e.g. a three days old leveret is not able to travel 100m in one night, for example, making the involvement of a predator obvious). Finding the tag alone shortly after tag attachment is another indication of death as during the first few days, tag attachment is very tight making it hard for the leverets to get rid of the tag by themselves, hence most likely a predator might have ripped it off.

(ii) Possible causes of death

Based on remains, tracks or dissections we suspected a fox to be involved in six cases and a crow, an owl and a dog for one case each. Two siblings were found starved: we neither found milk in the stomachs (they were 10 days old) nor any fat deposits (Karp 2019). Therefore, we suspect the death of their mother. During the last two days alive, they were exposed to heavy rain (>30 mm). Even though their stomachs were well filled with herbal content, together with the rain this might not have been enough to meet their energy requirements at such young age. Other than the few cases mentioned above, it was not possible to assign a possible cause of death because the remains and tracks were nondistinctive or non-existent. Predators most often consume the whole animal when they depredate animals of such young age or size (Goszczyński and Wasilewski 1992). Moreover, even when remains are found, it is not possible to determine the order of events – unless the event of death is directly observed: even if involvement of a predator is obvious, we do not know whether this predator killed the leveret or found it already dead.

References

Karp, D. 2019. Prewaning behaviour and mortality in wild brown hare leverets (*Lepus europaeus*). – PhD thesis, Univ. of Zurich.