Introduction

Brown bear monitoring in the Cantabrian Mountains has long been based on estimating the minimum number of females with cubs yearly. This approach has allowed to collect valuable information on bear litter size over time, which may help to better understand bear trends.

Since 1989, the minimum number of females with cubs has increased from 4 and 2 family groups to 34 and 6 in 2016, for the western and eastern segments of this bear population, respectively.

The most common litter size in the western segment was 2 cubs, followed by 1 and 3 cubs (Fig.2). The most common litter size in the eastern segment was 1 cub, followed by 2 and 3 cubs (Fig.3).

Analysis data: From data of females with cubs since 1989 we calculated:
- Litter size average of the two segments of Cantabrian population and we compared them building a GLM model with Poisson distributions.
- Percentage of females with cubs for the different litter sizes.
- Litter size over time building a GLM model with binomial distribution.

Results

Since 1989, the bear litter size in Cantabrian bear population ranged between 1 and 3 cubs, with a mean of 1.82±0.65 cubs (n=452).

Litter size was higher in the western population segment (X^2=3.84; d.f.=1; P=0.065) Fig.1.

We did not detect a significant variation in litter size over time within segments.

However, there were more cases of females with 3 cubs in both population segments over time (Fig 4; Fig. 5). Worth mentioning, the proportion of females with 1 cub increased in the western population segment (Fig. 4).

Discussion

-Due to the increasing trend of this bear population, mean litter size in the Cantabrian brown bear population is one of the lowest sizes reported in the literature, with some decreasing or saturated bear populations, excepting for some decreasing or saturated bear populations.

-Litters with 3 cubs are the less frequent in both population segments. However, following the trend of the population, they have increased over time. Similarly, females with 1 cub has also increased over time in western population segment.

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