CAMERA-TRAPPING AS TOOL FOR STUDYING THE BROWN BEAR BEHAVIOUR AND AS SUPPORT FOR GENETIC SAMPLING

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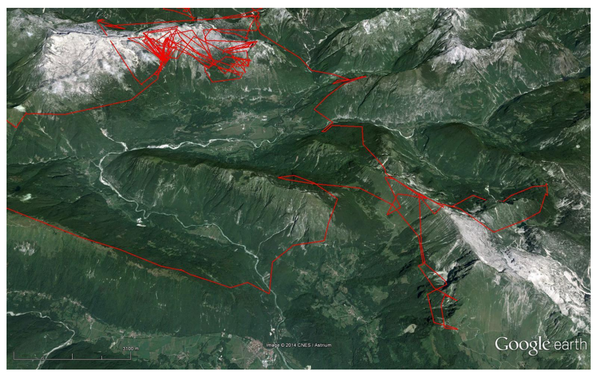
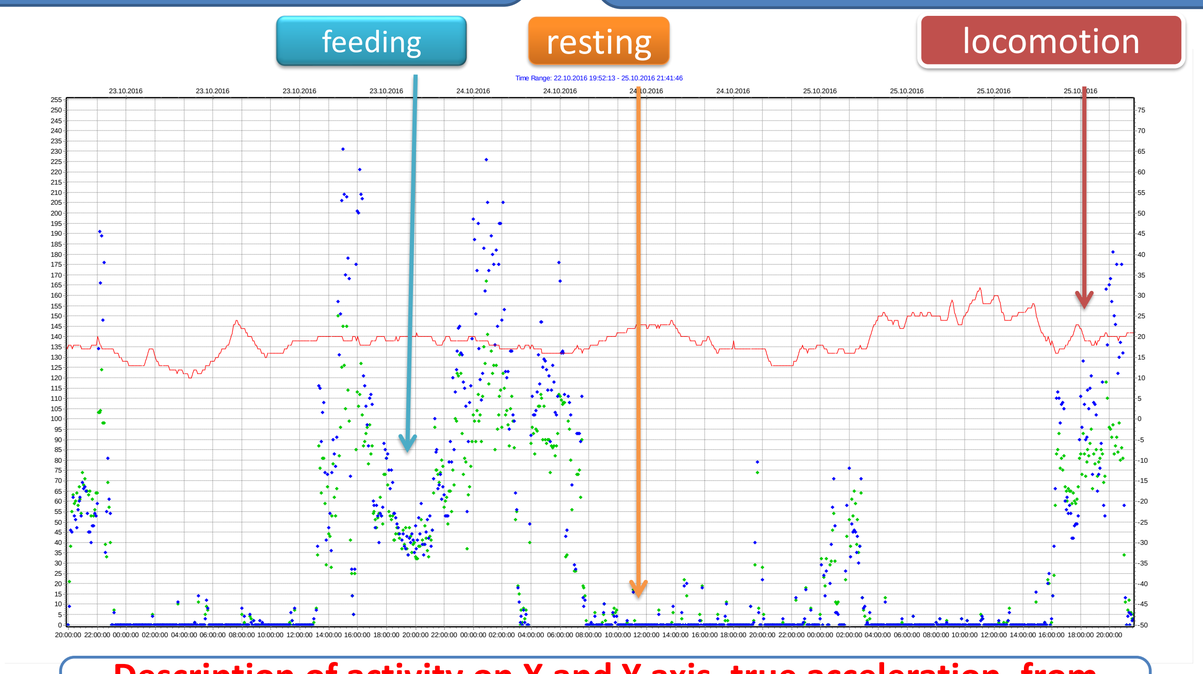
The Eastern Alps is a sink area for Brown bear (*Ursus arctos*), between the Dinaric- Pindos and Trentino populations: the study of the behaviour and of habitat use of bears that living in this area represents an important conservation issue.

We have studied the behaviour of 12 male bears, on the basis of 800 videos obtained with camera trapping, GPS fixes (from 6 bears radio-collared), every 2-4 hours, and activity data (true acceleration) on two axis, X and Y, every 5 minutes. The videos obtained at feeding points-hair traps (FHT), were analysed to detect the frequency of presence, in different months and hours, at monitoring sites. The behaviour, observed in the videos, was combined with the activity data (true acceleration obtained from the collars), to define the numeric interval of true acceleration, corresponding to: resting, feeding and locomotion and genetic analysis. For each hours of the day and in the different month, we estimated the percentage dedicated to the main behaviour. The bears show different seasonal pattern and data obtained with camera-trapping confirm a monthly, daily and hourly pattern. The utilization of FHT changes with the season, and during the fall season the bears seems to reduce the use of artificial food (maize and corn product) points at the hair traps.



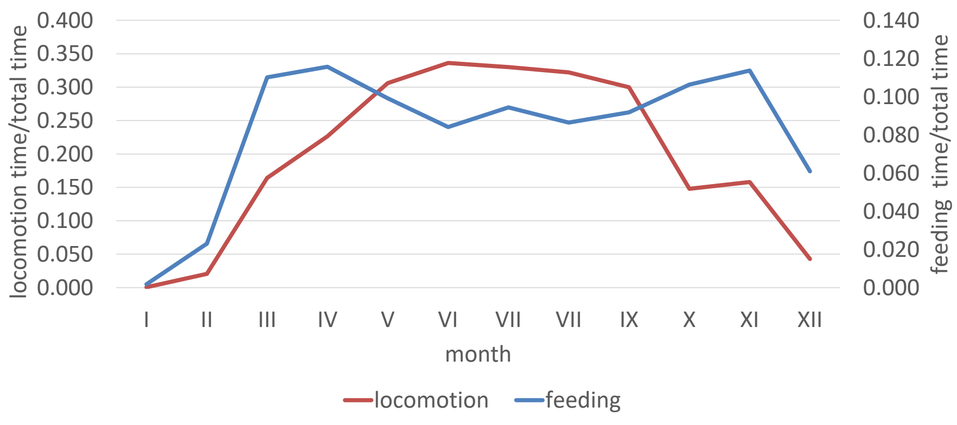
Analysis of Videos to estimate the activity values (on X and Y axis from activity sensor) of feeding behaviour.

Analysis of Gps localisation and km travelled per hour to estimate the activity values (on X and Y axis from activity sensor) of locomotion.

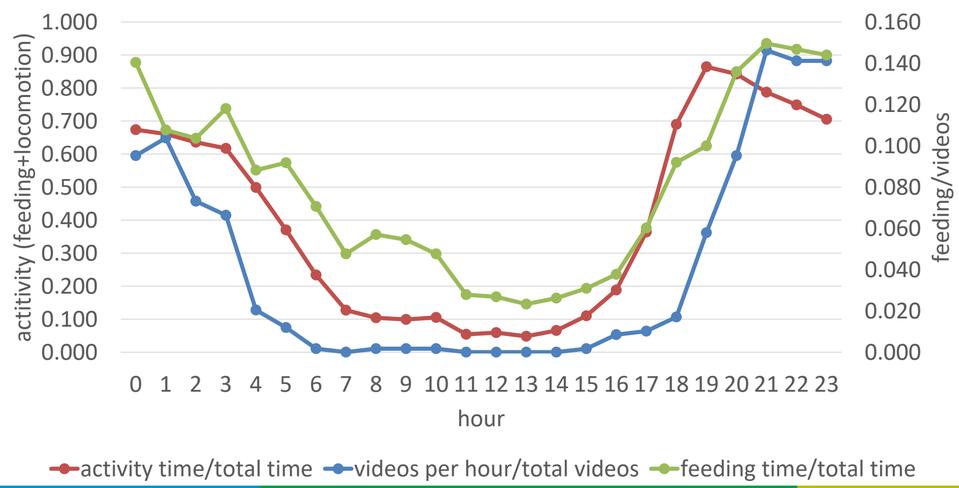


Description of activity on X and Y axis, true acceleration, from activity sensor in Vectronic collars

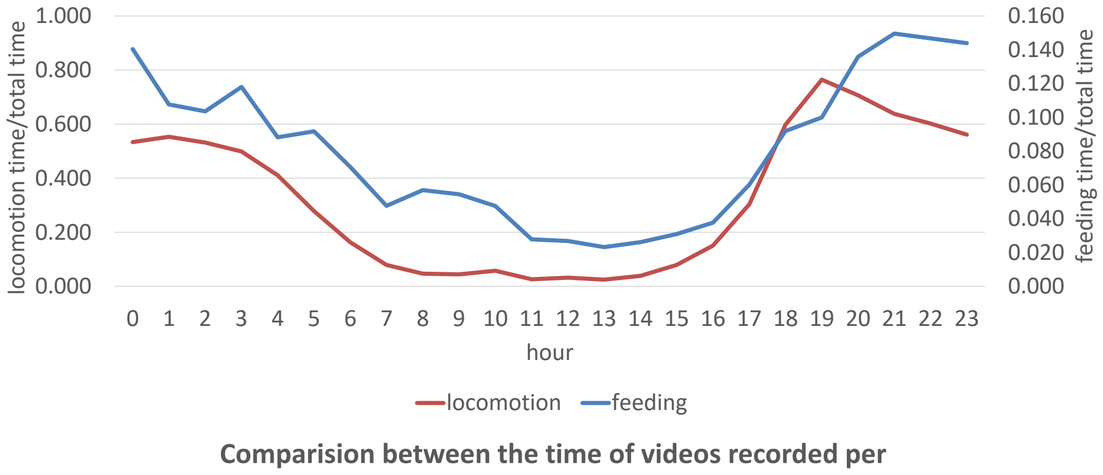
Time allocation for feeding and for locomotion in different months (6 bears)



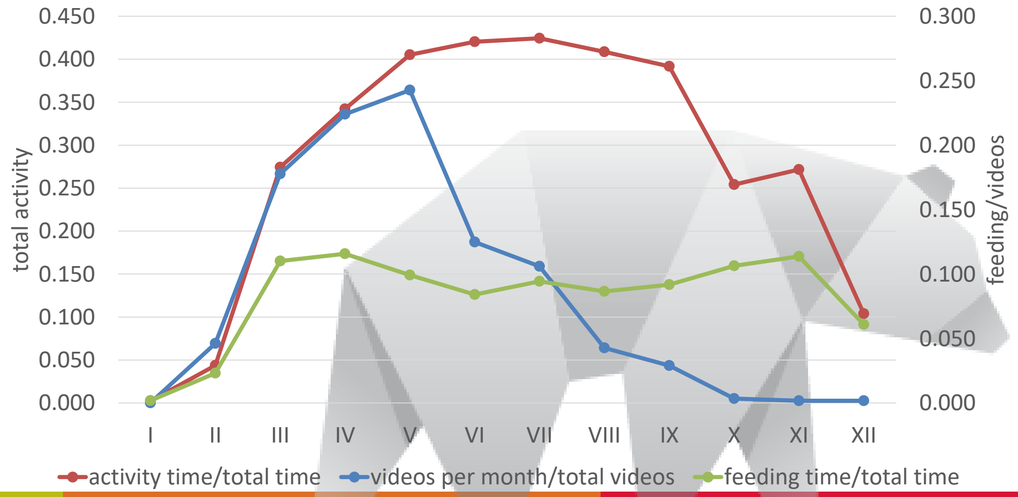
Comparision between the time of videos recorded per hour/total videos and activity pattern



Time allocation for feeding and locomotion in respect to the hours (6 bears)



Comparision between the time of videos recorded per month/total and activity pattern



The integration of GPS fixes, activity data (true acceleration) and camera-trapping is a promising approach to study the behaviour and energy requirement, and feeding choice of the brown bear in the Alps and permit to describe the different individual strategies to use the natural and anthropogenic resource of food. The camera-trapping can also reduce the amount of samples needed for genetic sampling and analysis.

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