

**Fig. S1** Map of the Abruzzo, Lazio and Molise National Park (PNALM, Italy) displaying the National Park boundary and the location of camera stations. Inset map depicts location of PNALM within Italy. The map was generated using <https://www.openstreetmap.org>.

**Suboptimal Body Condition Score (1–2)**



**Body Condition Score (2–3)**



BCS 2.0



BCS 3.0



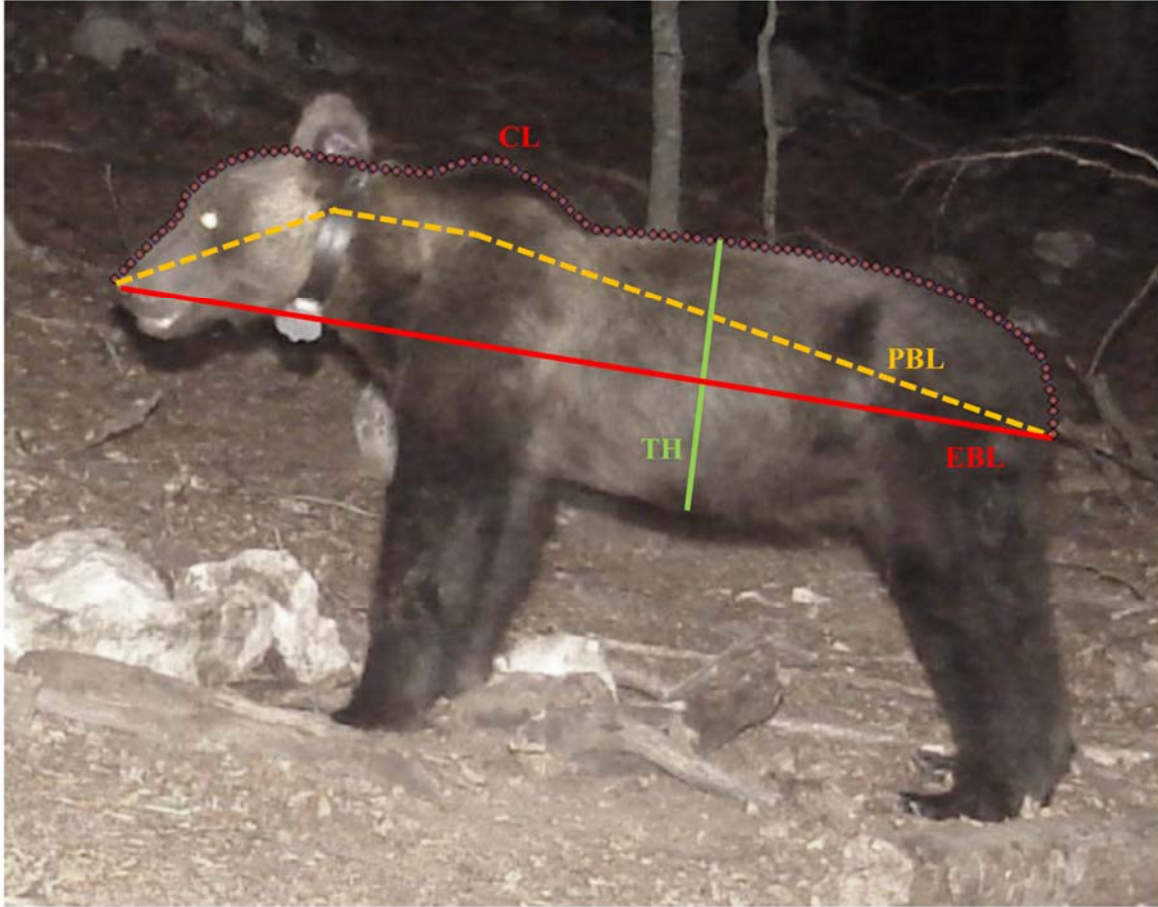
Optimal Body Condition Score (3–4)



Body Condition Score (4–5)



**Fig. S2** Examples of Body Condition Score applied to selected camera trap images (rescaled from the original size to reduce background) of Apennine brown bears (*Ursus arctos marsicanus*).



**Fig.**

**S3** Morphometric measurements taken to compute body ratio metrics on brown bears. Abbreviation as following: Euclidean Body Length (EBL), Curve Length (CL), Polygonal-Line Body Length (PBL), Torso Height (TH).