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**SUPPLEMENTAL MATERIAL**

**Running Head:** Factors affecting the body weight of bears

**Title:** Factors affecting body weight fluctuation in free-ranging Asian black bears

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**Table S1. Number of visits to the noninvasive body weighing system (NIBWS) by bears during 2017–2019 in the Nikko-Ashio Mountains, Tochigi Prefecture, Japan. ID “AN” indicated bears lacking verified sex, age, and age classes because they had not been captured.**



a F = Female; M = Male; U = Unknown.

**Table S2. Number of body weights (BW) recorded in each bear by the noninvasive body weighing system (NIBWS) during 2017–2019 in the Nikko-Ashio Mountains, Tochigi Prefecture, Japan. ID “AN” indicated bears lacking verified sex, age, and age classes because they had not been captured.**

a F = Female; M = Male; U = Unknown.

**Table S3. Body weight value recorded in each bear by the noninvasive body weighing system (NIBWS) during 2017–2019 in the Nikko-Ashio Mountains, Tochigi Prefecture, Japan. Upper row is the date body weight was recorded. Lower row is the body weight value in kilograms. We defined bears 2–4 years old as independent from their mother and bears >5 years old as adults. ID “AN” indicated bears lacking verified sex, age, and age classes because they had not been captured.**



a F = Female; M = Male; U = Unknown.

**Fig. S1. The noninvasive body weighing system (NIBWS) used in the Nikko-Ashio Mountains, Tochigi Prefecture, Japan. The dotted arrow indicates the camera angle.**



**Fig. S2. Arrangement of the noninvasive body weighing system (NIBWS) located in the Nikko-Ashio Mountains, Tochigi Prefecture, Japan. The upper image was taken from the perspective of the remote camera used to photograph the Asian black bears’ chest marks. The lower image was taken from the perspective of the remote camera used to photograph the body weight (left side of white outline) shown on the digital readout of the platform scale (center of white outline). The remote camera for body weight was mounted to capture both the digital readout and the platform scale.**



**Fig. S3. An example of how a chest mark could be photographed clearly and used to identify Asian black bear individuals at a noninvasive body weighing system (NIBWS) located in Nikko-Ashio Mountains, Tochigi Prefecture, Japan. This bear (a) and (b) was photographed on the same occasion at the NIBWS in 2017. This individual bear had been captured previously in a barrel trap in 2017 (c). Arrows and circles indicate the individual features used to identify this individual.**

