

Effects of capture in Scandinavian brown bears

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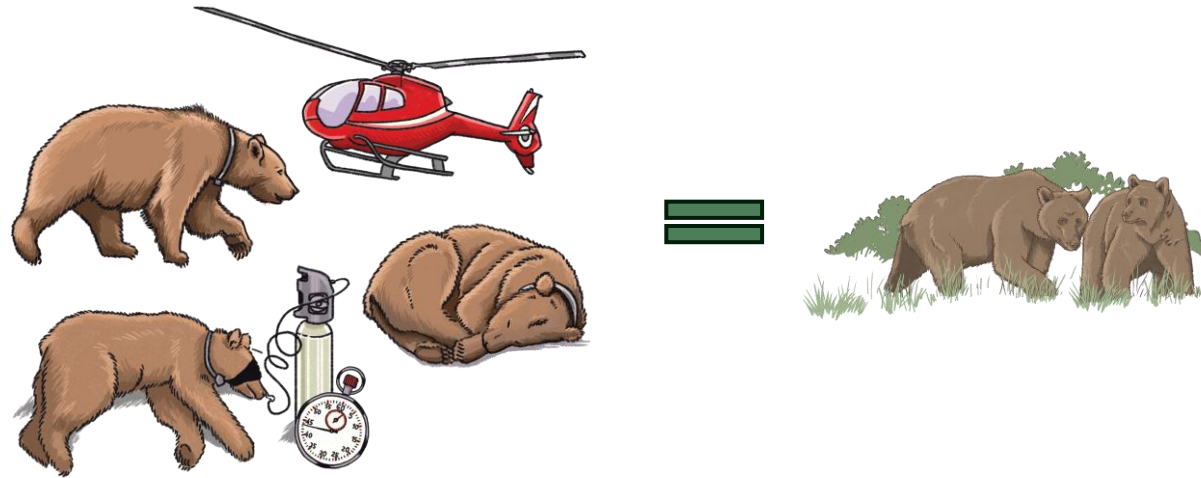


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Basic assumption

Captured & marked population

unmarked population



- 1) Capture effects
- 2) Device effects
- 3) Research activities



Ecological study



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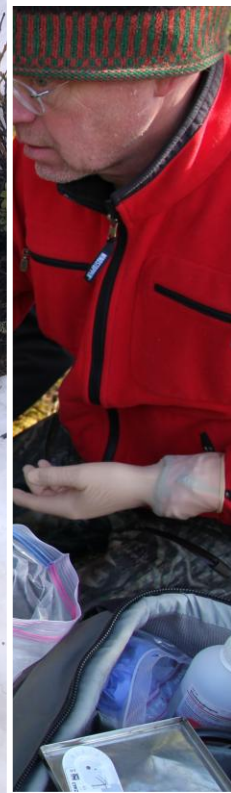
Methods



Ecological study

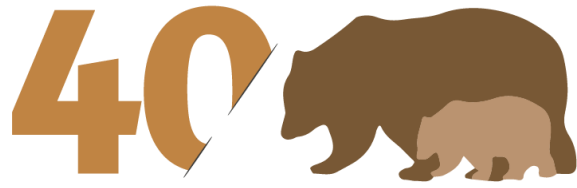


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Methods

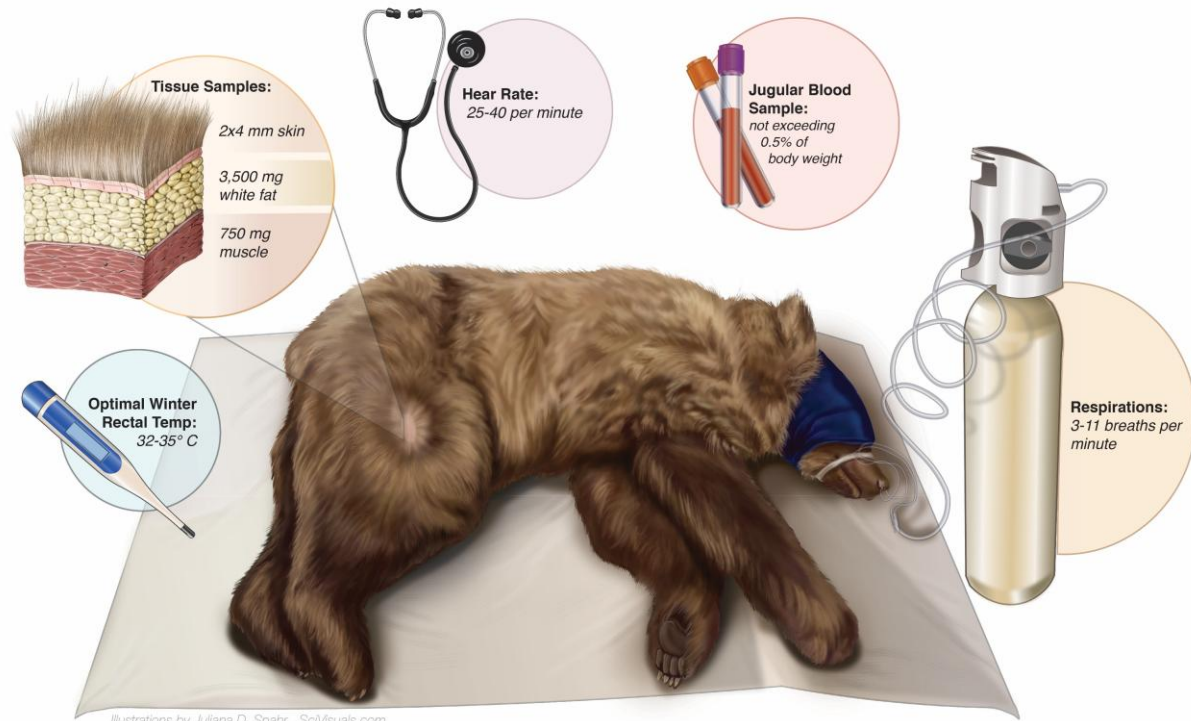
Translational medicine study



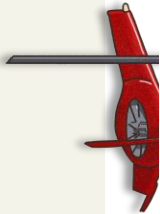
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Winter Surgical Protocols for Brown Bears (*Ursus arctos*)



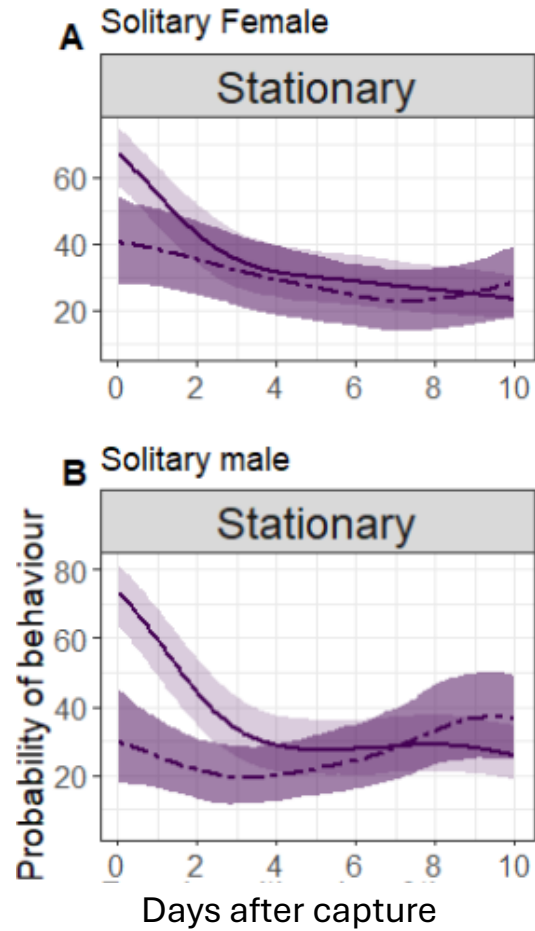
Illustrations by Juliana D. Spahr SciVisuals.com



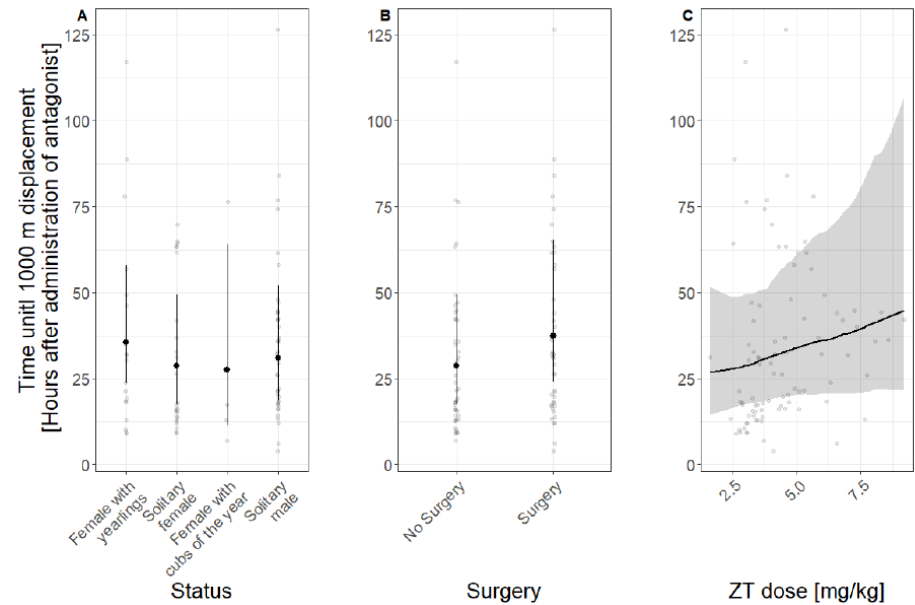
Research Article

Behavioural responses of brown bears to helicopter capture

Alexandra Thiel¹, Anne G. Hertel², Boris Fuchs¹, Andrea Friebe¹, David Ahlqvist³, Anne Randi Græseth⁴, Sylvain Giroud^{4,5}, Jonas Kindberg^{6,7}, Jon M. Arnemo¹ and Allina L. Evans¹











- Captured bears more stationary for up to 4 days after capture
- Immobilizing drug dose & surgery prolong recovery



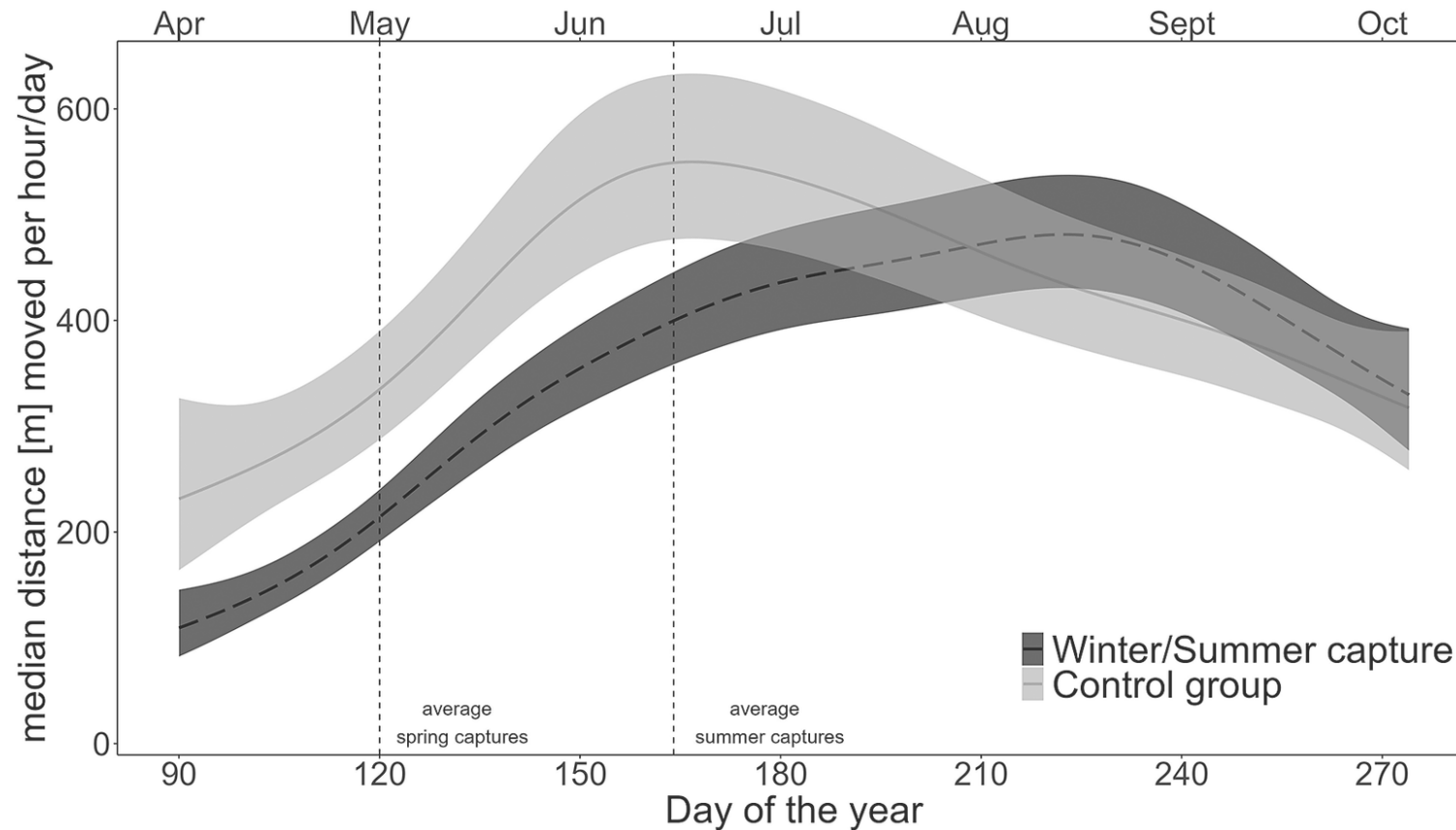
The cost of research: Lasting effects of capture, surgery and muscle biopsy on brown bear (*Ursus arctos*) movement and physiology

Animal Welfare

www.cambridge.org/awf

Alexandra Thiel¹ , Anne G Hertel² , Sylvain Giroud^{3,6} , Andrea Friebe⁴,
Boris Fuchs¹ , Jonas Kindberg^{4,5} , Anne Randi Græsli¹ ,
Jon M Amemo^{1,5}  and Alina L Evans¹ 

- Movement after den exit & summer capture



Moving forward: From assuming no effects to measuring and reducing it

In brown bears:

- Movement changed for days – weeks after capture
- Long-term effects in life-history traits
- → animal welfare and data quality issues

Future wildlife research should:

- Build welfare evaluation into study design
- Apply 3Rs to capture and handling procedures whenever possible

