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SOME LIKE IT HOT; BISON (BISON BISON) DON'T

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Jeff M. Martin , and Perry S. Barboza 

Study Description

We used an infrared thermal imaging camera to measure body surface temperature ($^{\circ}\text{C}$) and heat transfer (total surface Watts and Watts/m^2) between bison and their environment across 19 herds from Saskatchewan, Canada to Texas, USA, in both the summer of 2017 and the winter of 2017–2018, a total driving trip of nearly 19,000 miles. We focused on female bison from ages 3 months to 3 years of age, but also included mature females and males. Rising temperatures and heat loads constrain body size and productivity of bison in North America.

Martin, J. M., and P. S. Barboza. 2020. Some Like It Hot; Bison (*Bison bison*) Don't. *Bull Ecol Soc Am* 101(4):e01758. <https://doi.org/10.1002/bes2.1758>

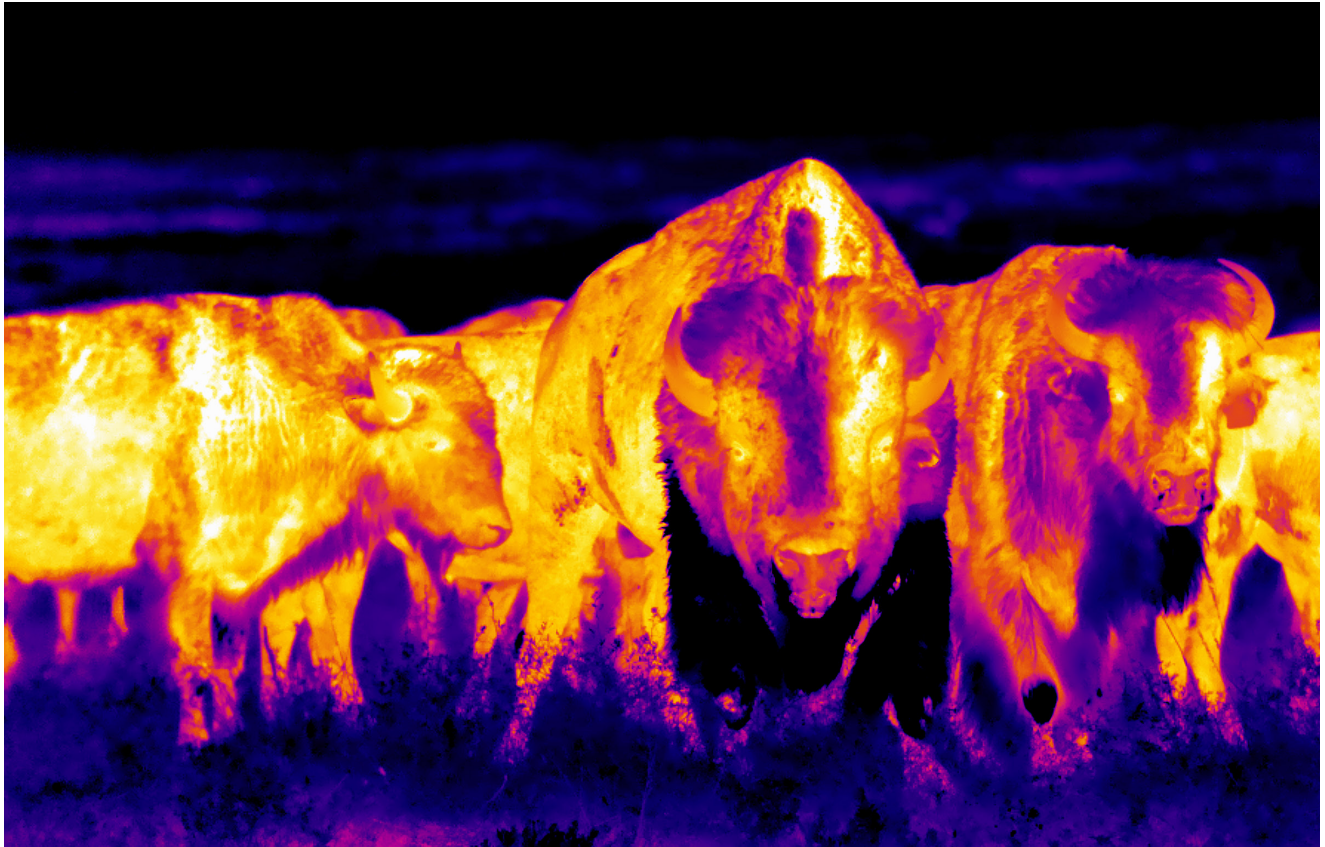


Photo 1. Thermal family portrait of (from left to right) yearling bison bull, mature bison bull, and a mature bison cow on a summer day in southwestern Kansas, USA, 2017. Thermal spectrum ranges from cool (blacks and blues; 30°C) to warm (yellow and white; 40°C). Photo credit: Jeff M. Martin.



Photo 2. Montana "Buffalero" in the summer sun. Photo credit: Jeff M. Martin.



Photo 3. Thermal image of bison yearling on a hot Texas day, summer 2017. Temperature ranges from 33°C (black and blues) to 70°C (yellows and whites) for the soil. Photo credit: Jeff M. Martin.



Photo 4. Thermal image of bison yearling on a cold Saskatchewan winter day in 2017. Temperature ranges from -60°C (black and blues; ground and snow) to 26°C (yellows and whites) for the eyeball. Photo credit: Jeff M. Martin.

These photographs illustrate the article “Thermal biology and growth of bison (*Bison bison*) along the Great Plains: examining four theories of endotherm body size” by Jeff M. Martin and Perry S. Barboza published in *Ecosphere*. <https://doi.org/10.1002/ecs2.3176>