

****Assessing the Accuracy of Temperature Measurements from Reconyx Cameras**

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Remote cameras provide important insight into wildlife demography, ecological processes, and behavior. Cameras often have built-in temperature sensors that output a temperature reading with every image. Which could provide valuable fine-scale temperature data. However, no camera manufacturers report on the accuracy of temperature measurements made by their cameras, making the quality of these data unknown. We sought to 1) assess the accuracy of temperature readings made by Reconyx® cameras, and 2) determine the time constant of Reconyx cameras, i.e., the amount of time a camera takes to equilibrate with air temperature. We paired two Reconyx cameras with a weather station which collected corrected air temperature measurements in order to assess error in the field for 3 weeks. In general, camera temperatures agreed well with temperatures from the weather station, with the correlation being 0.72. Mean bias error of uncorrected temperatures was -0.41°C , so cameras tended to underestimate temperatures. However, the maximum daily temperature could be overestimated by as much as 20°C by cameras. Next, we performed a time constant experiment with a single camera in a still-air environment with no shortwave radiation. In the lab setting, the camera took between 3 and 4 hours to fully equilibrate with air temperature. Given the widespread use of cameras for natural resources applications and particularly for wildlife studies, these findings suggest that temperatures can be reliable but may become less reliable when radiation loading is high or when temperatures change rapidly in a short time.