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A YEAR-LONG STUDY OF FOOD CONSUMPTION BY CAPTIVE WHOOPING CRANES AT THE INTERNATIONAL CRANE FOUNDATION

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Abstract: Throughout 2002, we recorded daily food consumption by 12 pairs of captive whooping cranes (*Grus americana*). For 7 pairs we recorded food consumption throughout the entire year while there were large continuous gaps in measurements of food consumption for 5 pairs that raised chicks that year. Birds received both a maintenance and breeder diet, and for both we converted food consumption to energy intake (Joules/g body mass) using the combined fall weights of female and male. We compared daily energy intake with 6 meteorological variables (involving temperature, wind speed and humidity), photoperiod (natural and artificial) and egg laying using multiple regression. We found mean daily energy intake averaged 411.4 $\pm$ 141.6 j/g body mass ($\pm$ SD, range: 20–1,202). Energy intake was lowest in June and July and highest in March (pre-laying), October and November (pre-migration and migration). In addition, we examined the signs of the coefficients for each environmental variable among all pairs (using sign tests). We found that daily energy intake was negatively correlated with daily mean temperature. Further, we found that daily energy intake was positively correlated with both daily minimum and daily maximum temperatures. These last 3 findings suggest that whooping cranes, like many other homeothermic animals, have a thermal neutral zone and that temperatures above and below the zone require energy expenditure to maintain regular body temperature.

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