

SANTOS, A. J. B.; FREIRE, E. M. X.; CORSO, G.; BELLINI, C. Body weight and the energy budget of gravid hawksbill turtles (*Eretmochelys imbricata*) during the nesting season In: INTERNATIONAL SEA TURTLE SYMPOSIUM, 29., 2009, Brisbane, Austrália. **Book of Abstract...** [S.l.:s.n.], 2009.

Body weight and the energy budget of gravid hawksbill turtles (*Eretmochelys imbricata*) during the nesting season

Armando J. B. Santos, Eliza M. X. Freire, Claudio Bellini and Gilberto Corso

Female hawksbill turtles (*Eretmochelys imbricata*) nesting along the southeast coastline of Rio Grande do Norte State, Brazil (6°13'40"S, 35°03'05"W) were captured and weighed during the 2006/2007 and 2007/2008 egg-laying seasons. The mean value for the first post-oviposition weight was 79.6 kg (range 56.2 – 105.7 kg; SD = 11.3 kg; n = 72 females). Those individuals which were subsequently recaptured showed a mean weight loss of 1.6 kg (range -3.7 – 5.1; SD = 1.43; n = 75 sets of measurements on 36 females) in the interval between two consecutive post-oviposition (i.e. after one internidal interval). In the cases where the female aborted the nesting process, the pre-oviposition weight was measured. The total effective egg-laying investment was found to be 5.46 kg (range 4.3 – 8.2; SD = 1.09; n = 12 sets of measurements). The mean recovery in body weight was found to be 3.2 kg (range 1.8 – 4.6; SD = 1.05; n = 9 sets of measurements). The recovery in body weight was found to be always significantly lower ($p < 0.005$) than the total effective egg-laying investment. This is in agreement with the observed weight loss tendency throughout the breeding season for this species. The weight recovery was analysed using allometric law, converting both loss in body weight and total egg-weight to energy. Using mean body weight of the turtle we calculated that the metabolic maintenance rate of the hawksbill turtle during the nesting period to be $2870 \text{ kJ} \cdot \text{d}^{-1}$ and the energy that the turtles expended in egg-laying to be $1183 \text{ kJ} \cdot \text{d}^{-1}$. The daily net weight loss converted into energy is $4213 \text{ kJ} \cdot \text{d}^{-1}$. The total daily energy consumption (maintenance plus egg production) is of the same magnitude as the daily energy from weight loss. We argue that there is no reason for a significant extra intake of energy during the oviposition period. Hence we conclude that the observed weight recovery is due to rehydration.