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Stellingen behorende bij het proefschrift

Travels in a changing world

Flexibility and constraints in migration and breeding
of the barnacle goose

Götz Eichhorn

1. Isotope Dilution offers currently the most accurate non-destructive method to estimate total body water, fat-free mass and fat mass of animals in the field. For the latter two components the error of the estimate depends crucially on the water content in the fat-free mass. How this varies among and within species is still not well understood and often obscured for methodological reasons (G. Eichhorn and G.H. Visser 2008. *Physiological and Biochemical Zoology*, in press; chapter 2).
2. The suggestion of the existence of individual photoperiod thresholds in Bewick's Swan based on dates of departure from the wintering grounds (E.C. Rees 2006. *Bewick's Swan*. T & AD Poyser, London) is hard to reconcile with the individual flexibility of timing of departure we found for the barnacle goose (chapter 4).
3. The 'answer' to changed stopover conditions along the route experienced by barnacle geese is individual plasticity rather than selective removal of birds with fixed routines (chapter 4).
4. Enjoying his goose-soup after a successful hunting day on the White Sea coast in spring the Russian hunter may not realise that the tasty grease drops floating on his soup are made in Holland and his meal thus reflects in part agricultural policies more than 2000 kilometres away (Jefferies and Drent 2006; chapter 5).
5. Compared to their arctic-breeding conspecifics temperate-breeding barnacle geese conserve relatively more endogenous nutrient stores during egg production but not during incubation (chapter 7). This hints that contrary to expectation, energy balance during incubation in temperate regions is still marginal.
6. "Most of our knowledge of avian nutrition derives from studies of domestic animals in which selection for nutrient reserves has been relaxed for generations." (M.E. Murphy 1996: Nutrition and metabolism. In: Carey, C. (ed.) *Avian energetics and nutritional ecology*. Chapman & Hall, New York). This discrepancy is one of the major reasons why we know far less about the impact of agricultural crops on wild geese than about the impact of geese on agricultural crops (chapter 8).
7. Prerequisites for successful colonisation of temperate breeding habitat by barnacle geese were the improved feeding conditions in combination with the freedom from disturbance by man (Van Eerden et al. 2005; Van der Graaf 2006; chapter 6 and 8).
8. Technological progress will allow us to track an increasing number of increasingly smaller species. At the same time, however, more and more species will have gone extinct before we have obtained any measurement at all.