



volume 6 • número 1 • p 60 - 61

CAPÍTULO ESPECIAL • IV Encontro Nacional
Pós-Graduação em Ciências Biológicas
Universidade de Aveiro

RESUMO

Effect of maternal foraging and breeding strategies on offspring quality in the Lesser black-backed gull: a field study

The Lesser Black-backed Gull (*Larus fuscus*) is a seabird species with a high individual variation in foraging strategies and an ability to thrive in urban landscapes. As gulls become increasingly dependent on human activities - and food resources - they also increase susceptibility of exposure to toxic substances through ingestion of contaminated food. This can reduce individual survival and impair reproductive success. Additionally, adult birds may also pass these contaminant burdens to their offspring (e.g. via parental care, maternal deposition) which may also impair chick fitness. Known to induce neurological dysfunctions or alter behavioural displays in other bird populations, mercury (Hg) is one example of an environmental contaminant with the ability to be transferred to offspring by these mechanisms. In order to understand to what extent female foraging strategies and timing of breeding are connected to Hg burdens stored in chicks and may affect offspring success, a long term study population of *L. fuscus* that breeds in Zeebrugge harbour (Belgium, 51°2'N, 03°11'E) was monitored between 2012-2013. During this period, eggs, primary feathers (adults) and down feathers (chicks) were collected to assess the isotopic signatures of carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$), and to determine total Hg burden. In addition, in 2013, female timing of breeding was assessed and chicks from early and late female breeders were cross-fostered to disentangle maternal quality effects related to timing of breeding. Hg transfer to chicks via maternal deposition in the egg was observed. Ma-

Cátia Santos^{1,2}•

Marta Monteiro²

Amadeu M.V.M. Soares²

Susana Loureiro²

Tom Larsen¹

Léa Blondel¹

Liesbeth De Neve¹

Luc Lens¹

¹Terrestrial Ecology Unit (TEREC), Ghent University

²Department of Biology & CESAM, Aveiro University

• catiasantos@ua.pt

ISSN 1647-323X

ternal pre and post-hatching feeding strategies were observed to influence Hg burden of offspring which was higher in females with a predominantly marine diet. Consumption of marine prey during egg-laying increased in late breeding females, thus increasing Hg load of late breeding chicks. Furthermore, chicks' growth rate was higher in chicks raised by early breeders, both in nests with and without the cross fostered treatment. These data suggest that maternal strategies may, indeed, influence chicks' quality during breeding.



PALAVRAS-CHAVE: bioaccumulation, feeding behaviour, mercury, seabird