The costs of being cosmopolitan: a long term study on the human-dependent population of Lesser Black-backed gulls in Belgium

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The Lesser Black-backed Gull (*Larus fuscus*) is a cosmopolitan seabird species with an ability to thrive in urban landscapes. Although human activities seem to have favoured the expansion of this species, the long term effects of this association on the fitness of its populations is unclear. As gulls become increasingly dependent on human activities, and exposed to toxic substances through the ingestion of contaminated food, they also lose their natural breeding habitat to urban development. As described elsewhere in its breeding range along the North East Atlantic coasts (Belant 1997; Rock 2005), *L. fuscus* increasingly nest on top of buildings in Belgian cities and harbours. This has brought a perception of nuisance to local communities, given the gulls' aggressive behaviour during chick rearing and opportunistic feeding habits, focused on anthropogenic refuse from urban garbage, industrial waste and fishery discards. To understand the costs of gulls' association to human activities, we study the relationship between pre- and post-hatching feeding strategies of adults, and the mercury burden, physiological stress, digestive parameters and performance of developing offspring, in a long-term study population of *L. fuscus* that breeds in the Outer Port of Zeebrugge. We aim as well at estimating the viability of the breeding population, given its overall energy demand and the prospects of future local resource availability: reduction in fishery discards, changes in land use and garbage disposal procedures.

Results so far show that parental pre- and post-hatching feeding strategies influence the contaminant burden of offspring, namely mercury load increased in chicks fed with a predominantly marine diet. Although the relative use of agricultural areas as foraging grounds was larger than initially expected, we also observed that breeding gulls spent more time foraging at sea while they were feeding their chicks than during the egg incubation period, and this was reflected by stable isotope signatures in chick feathers. Use of food waste was in most cases localized in areas with high waste density: landfill, factory and distribution centres, located at relatively large distances from the colony.

References

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