

## The secret life of gulls revealed with high-tech GPS tags

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As part of our terrestrial and marine observatory for LifeWatch, the Research Institute for Nature and Forest (INBO) is tracking large birds with lightweight, solar powered GPS tags. The project builds upon the extensive knowledge INBO has acquired over the last 15 years in studying postnuptial migration, and mate and site fidelity of large gulls, using sightings of colour-marked individuals ringed in Belgium. The study is conducted in close collaboration with the Terrestrial Ecological Unit (TEREC) of the University of Ghent, the Flanders Marine Institute (VLIZ) and the University of Amsterdam (UvA).

Here we report on the movements of the gulls during the breeding seasons of 2013 and 2014, during autumn and spring migration, and in their winter areas. In both years LBBGs nesting in the port of Zeebrugge used both marine areas and terrestrial habitats for foraging. Terrestrial habitats included agricultural sites, urbanised areas, landfills and refuge containers within 75km from the colony. Although some general patterns could be distinguished, individual habitat and food preferences seemed to be the main driver for these patterns. Migration to the wintering areas at the Iberian peninsula and along the west coast of Africa (up to Gambia) mainly occurred along the coast, but also over the Atlantic Ocean and over land.

During the breeding season HGs in Ostend mainly used intertidal areas for foraging, as well as ports, marine and agricultural habitats. Although some gulls (25%) visited the city of Ostend, it seemed that the city centre was mainly used to rest on the roof tops and not for foraging. All three gulls that were caught while foraging in the city centre did not breed in the centre itself, but at different locations east of the centre (up to 5km distance). All three individuals were to a certain extent specialised in feeding at the Visserskaai and visited it frequently.

During the afternoon demo session Eric Stienen will present the study results and will explain about the marked individual differences in the behaviour of the gulls. The movements are visualized with CartoDB, an open source tool to visualize and analyse geospatial data on the web.