

PhD Thesis (Nov 2017- Oct 2020), University of La Rochelle, Laboratory LIENSs, La Rochelle, France

**SELECTION OF HABITATS BY SHOREBIRDS ON MUDFLATS ECOSYSTEM OF WESTERN COAST OF FRANCE AND ROLE OF PROTECTED AREAS IN THE CONSERVATION OF LARGE SHOREBIRDS SPECIES.**

**Supervisor: Dr Pierrick Bocher**

Studies carried out jointly over the last fifteen years between researchers and managers of the Pertuis Charentais National Nature Reserve have identified the first links between the availability of the food resource and the distribution of. With advances in telemetry, miniaturized GPS Loggers can now be fitted on large- and medium size shorebirds, allowing accurate tracking of individuals during their daily and seasonal cycles. It is thus possible to improve significantly our knowledge on the biology of shorebirds and their dependence on coastal habitats; and their links to protected areas. The basis of the PhD thesis subject, within the framework of the LIMITRACK Program (<http://limitrack.univ-lr.fr>), consists of a precise understanding of the various winter survival strategies (August to April) of five species by exploiting the food resource in invertebrate organisms of the coast of Western France, in relation to the use of rare roosts located in or outside the protected area.

This PhD thesis aims at describing the spatial and temporal utilization of the functional areas of five of the main Shorebirds species: the Bar-tailed Godwit *Limosa lapponica*, the Black-tailed Godwit *Limosa islandica*, the Eurasian Curlew *Numenius arquata*, the grey Plover *Pluvialis squatarola* and the Oystercatcher *Haematopus ostralegus*. Considering the huge amounts of data collected, this PhD thesis will probably focus mainly on the two godwit species.



The selected species have, for the most part, marked sexual dimorphisms which can lead to pronounced sexual segregations in terms of feeding strategies. One of the objectives will also be to know if the sexual dimorphism observed in these species has consequences on their distributions and strategies during winter survival. The hypothesis is that larger females grab higher-quality feeding sites at the expense of males, which have to compensate for longer feeding times on lower quality sites (Aubouin 2014). Finally, since GPS has the ability to continuously record the position of birds throughout the year, it will be possible to connect wintering sites and breeding sites. The hypothesis that the origin of birds affects their winter ecology (diet, food research effort ...) will also be tested. The determination of precise feeding areas by the GPS locations of birds during low tide periods will make possible to sample benthic macrofauna as potential prey of birds in order to estimate the energy qualities of the "patches" prospected at an individual scale and to define specifically feeding habitats.

- Site-to-site characterization of wintering populations.
- The complementarity of sites and intra and inter-annual exchanges (2017-2018-2019).
- The exploitation of feeding areas and their relation to the choice of deep-sea shelters.
- Individual and /or group strategy.
- Trophic and / or spatial segregation of feeding sites between the five species
- The link between breeding sites and winter strategies.

Submission of application to Pierrick Bocher ([pbocher@univ-lr.fr](mailto:pbocher@univ-lr.fr) / 05 46 45 82 92)

- CV
- Cover letter
- Letters of recommendation

Deadline: 19<sup>th</sup> October 2017

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