



# Abstracts

## International Hen Harrier and Short-eared Owl meeting 2019

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## Breeding and feeding ecology of the Short-eared Owl on the East Frisian Islands (NW Germany)

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The Short-eared Owl ranks among the rarest breeding bird species in Germany. Today, the remaining breeding population is almost exclusively restricted to the coastal areas of Schleswig-Holstein and Lower Saxony. Besides a few breeding pairs located on the North Frisian Islands, the East Frisian Islands (Wadden Sea National Park of Lower Saxony) are the only region where the species continuously breeds in Germany. During recent decades, on the West Frisian Islands in the Netherlands a decrease of the Short-eared Owl breeding population has been observed. Since the Dutch breeding habitats are rather similar to those on the German Wadden Sea Islands, there is concern that the German breeding population might also decrease. In line with this, for the East Frisian Islands a decline of the breeding population has been detected since 2004. However, until now it is unknown if this pattern possibly only reflects a normal fluctuation. Consequently, for the long-term survival of the species there is urgent need for a better understanding of the ecology of the species. Accordingly, we studied the breeding and feeding ecology as well as habitat preferences of the Short-eared Owl on the East Frisian Islands.

During the breeding seasons 2011, 2017 and 2018 we examined nest-site selection by comparing biotope type and vegetation structure at nests with those of randomly selected control samples. To evaluate foraging habitats we conducted more than 200 hours of fixed point surveys. To gather data about feeding ecology and activity patterns of breeding Short-eared Owls we used camera traps which were placed at nest sites. Additionally, we studied food availability in different biotopes used for foraging by live trapping of small mammals. Furthermore, we conducted nest monitoring to determine hatching success and radio-tracked fledglings to gather information about breeding success.

Dense and relatively high vegetation was preferred for nesting. Nests were mainly located within dune grasslands, high marshes and salty dunes, which were also the main feeding habitats. According to the analysis of camera traps young birds were almost exclusively fed with voles (*Microtus* spp.). Additionally, single European White-toothed Shrews (*Crocidura russula*) and one young European Hare (*Lepus europeaus*) were fed. Several observations of feathers of species like Bluethroat (*Luscinia svecica*) and Meadow Pipit (*Anthus pratensis*) in owl nests suggest that songbirds were also hunted as prey. Abundance of small mammals was generally low, although it increased from April to August. The Common Vole (*Microtus arvalis*) was the dominant species in all studied habitat types – except for dune heath – and exhibited its highest abundance in salty dunes and dune grasslands. Consequently, the habitats with the highest prey density were also preferred for foraging. On contrast to the very high hatching success ( $\bar{x}$  87 %), radio tracking revealed that only 25% of the young birds fledged successfully. For some fledglings, food shortage was identified as cause of death. A very high loss was observed after several days of bad weather (heavy rain and strong wind [6–9 Beaufort]) in June, when most of the fledglings were still young.





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