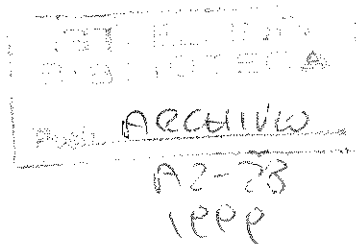


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# Waterbird Conservation and Management

**Waterbird Society**  
(formerly, Colonial Waterbird Society)  
**23° Annual Meeting and Workshops**

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Conference Chair: Mauro Fasola  
Chair of the Scientific Program: Rob Butler  
Organisation: Fabio Perco  
Staff: Maria Grazia Bellio, Eleonora Boncompagni, Laura Dami, Marcello Giorda,  
Marilena Lorini, Carlo Pascoli

AT-SEA ACTIVITY AND DIETS OF KITTIWAKES IN AN AREA EXPLOITED  
BY A SANDEEL FISHERY

Wanless S, Dall'Antonia L, Benvenuti S, Harris MP

NERC Institute of Terrestrial Ecology, Banchory Research Station, Banchory, Kincardineshire,  
AB31 4BY, Scotland

Istituto di Elaborazione dell'Informazione, C.N.R., Via Santa Maria 46, 56126 Pisa, Italy  
and Dipartimento di Etologia, Ecologia, Evoluzione, Università di Pisa, Via Volta 6,  
56126 Pisa, Italy

Kittiwakes in the North Sea feed extensively on sandeels *Ammodytes marinus* and this fish is currently the target of the largest single species fishery in the area. Many aspects of kittiwake biology suggest that it should be particularly vulnerable to reductions in food supply. However, there is an extreme shortage of detailed information on the diet and at-sea activity of this species. We collected data on these topics at a colony in southeast Scotland located 30 km from a major sandeel fishing ground, between 1997 and 1999. Diet samples indicated that kittiwakes showed a marked seasonal change in diet composition with a consistent transition from crustacea to 1 group sandeels to 0 group sandeels. Annual variations in the timing of these changes were explainable in terms of sandeel life history events. In 1999 we carried out a pilot study using small back-mounted activity loggers to obtain detailed behavioural data on nine kittiwakes during chick rearing. Results were used to determine: 1) diurnal patterns of at-sea activity, 2) travel time and hence potential foraging range and 3) feeding time and an index of foraging efficiency.