
Seabirds and fisheries: a modern toolbox to study an ancient relationship facing new challenges.

Tangi Le Bot^{*†}, Amélie Lescroël¹, and David Gremillet¹

¹Centre d'écologie fonctionnelle et évolutive (CEFE) – CNRS : UMR5175, Université Montpellier II - Sciences et techniques, Université Montpellier I, Université Paul Valéry - Montpellier III, École Pratique des Hautes Études [EPHE] – Campus CNRS - 1919 route de Mende - 34293 Montpellier cedex 5, France

Abstract

Commercial fisheries profoundly modify marine ecosystems, depleting some fish stocks to nearby extinction, but also providing huge amounts of food subsidies to scavenging and predatory species. Fishery byproducts providing easily accessible resources may be advantageous for some species, in particular seabirds, and enhance direct interactions between scavengers and fishing vessels. However fishing practices are subjected to new regulations; leading to a reduction in discarding, or to bycatch mitigating measures. Understanding the potential impact of those new practices for scavengers is an essential aspect of fishery ecosystem-based management, but this requires greater knowledge of seabird/fishery interactions. To answer fundamental questions about the scavenging behaviour of the species concerned, a wide diversity of approaches has been developed, particularly with respect to new electronic tracking and imaging technologies. Here, we summarize and critically evaluate all sampling and analytical techniques which are currently available for the study of seabirds/fisheries interactions. Thereby, we explore a range of ecological questions, ranging from seabird dependence upon food subsidies, to the evaluation of seabird mortality caused by bycatch. Importantly, this allows us to compile a modern toolbox, which will be available for research to efficiently and accurately evaluate this important ecological issue across the world's oceans.

Keywords: fisheries, seabirds, marine conservation, ecosystem based management, scavenger fishery interactions, at sea behaviour, toolbox, ecological informatics

*Speaker

†Corresponding author: tangi.lebot@cefe.cnrs.fr