

Jellyfish on the menu: mtDNA assay reveals scyphozoan predation in the Irish Sea.

Authors: Philip D. Lamb., John K. Pinnegar, Ewan Hunter, Martin I. Taylor

Abstract

Localized outbreaks of jellyfish, known as blooms, cause a variety of adverse ecological and economic effects. However, fundamental aspects of their ecology remain unknown. Notably, there is scant information on the role jellyfish occupy in food webs: in many ecosystems, few or no predators are known. To identify jellyfish consumers in the Irish Sea, we conducted a molecular gut content assessment of 50 potential predators using cnidarian-specific mtDNA primers and sequencing. We show that jellyfish predation may be more common than previously acknowledged: uncovering many previously unknown jellyfish predators. A substantial proportion of herring and whiting were found to have consumed jellyfish. Rare ingestion was also detected in a variety of other species. Given the phenology of jellyfish in the region, we suggest that the predation was probably targeting juvenile stages of the jellyfish life cycle.

Keywords:

jellyfish, diet, gut content analysis, predation, 16S mtDNA

Contact author:

John K. Pinnegar, Centre for Environment, Fisheries & Aquaculture Science, Lowestoft Laboratory, Pakefield Road, Lowestoft, Suffolk, NR33 0HT, UK. [Tel. +44 (0) 1502 524229, Fax. +44 (0) 1502 513865, e-mail, john.pinnegar@cefas.co.uk]
Twitter username: @johnkpinnegar @lamb_ecology