

Oil spill impacts may perturb entire food webs

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Oil spills not only have a direct impact on species and habitats, but may also set off a cascade of perturbations that affect the entire food web. These are the findings of new research published in an article in the special issue on Ocean Spills and Accidents in Springer's journal *Archives of Environmental Contamination and Toxicology* (AECT).

Oil spills are well known to cause significant harm to some species and to local environments, but the sudden and unexpected occurrence of each accident, the unique way each ecosystem is affected, and an often poorly-prepared assessment capacity have constrained the understanding of the full consequences of such events.

In this study, researcher Jeffrey Short and his co-authors have discovered a major new ecological damage pathway following [oil spills](#). The researchers found that the mass mortalities of seabirds and marine mammals associated with the 2010 Deepwater Horizon blowout in the Gulf of Mexico reduced predation on forage fish populations considerably.

The loss of top predators has resulted in large increases in the abundance of fish, such as menhaden, in the Gulf of Mexico in the years after the accident. These findings provide significant new insights into the nature of oil spills, and underscore the need to study not just those species obviously affected, but also the entire food web, during oil [spill](#) assessments.

"Our discovery suggests that the structure of [food](#) webs change after an oil spill, which may be much more damaging to fish and other aquatic fauna than the direct impacts of the spilled oil itself," explained Short.

"While the direct effects of oil spills on ecosystems have been well documented, this new study following the Deepwater Horizon blowout in 2011 provides the first indication that oil spills can alter the nature of entire [aquatic food webs](#)," said Peter S. Ross, editor-in-chief of AECT.

More information: Jeffrey W. Short et al, Anomalously High Recruitment of the 2010 Gulf Menhaden (*Brevoortia patronus*) Year Class: Evidence of Indirect Effects from the Deepwater Horizon Blowout in the Gulf of Mexico, *Archives of Environmental Contamination and Toxicology* (2017). [DOI: 10.1007/s00244-017-0374-0](#)

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