New research from Queen's University reveals alarming trends of a globally significant seabird population

From: Queen's University

News release
(December 7, 2020) Queen's University researchers John Smol, Matthew Duda and collaborators have uncovered new information that shows that a globally important seabird colony is now only 16 per cent of its potential size, and the likely culprit of the decline is nearby European settlement from over 200 years ago.

As seabirds are indicators of marine ecosystem health, Dr. Smol (Biology) and Duda (PhD candidate, Biology) are using fossil evidence to explore changes in the number of seabirds before and after European arrival to understand just how human encroachment has affected the populations.

Using paleoenvironmental data, the research team used lake sediments and seabird guano to reconstruct the last 5,800 years of population dynamics of the Leach's Storm-petrel in the Atlantic Ocean, and found the population naturally fluctuated until a stark decline at the start of the 19th century. The timing of the decline lines up with the period when Europeans settled near the seabird-inhabited island. European arrival brought with it potential rat infestations, the use of seabirds as candlesticks, and boating traffic – all of which may have contributed to the crash in colony size.

The researchers say that without the added temporal context provided by the paleoenvironmental data, this colony of storm-petrels would not be considered in decline. The population has declined to about 16 per cent of the potential carrying capacity from nearly 800 years ago.

Quotes
"The rapid decline in this globally-significant storm-petrel population may be regarded as a 'canary in a coal mine' for Atlantic Ocean health. The population is approaching the lowest numbers in the region's 5,800-year record without any evidence of recovery."
- *Matthew Duda, PhD Candidate, Queen's University*

"For the majority of species, there is insufficient monitoring to understand the natural population dynamics and therefore it is difficult to implement effective conservation strategies. We showed how changing seabird population sizes (i.e. changes in the amounts of guano delivered to aquatic ecosystems) can be tracked in dated lake sediments to reconstruct the long-term population dynamics, long before ornithologists were monitoring populations."
- *John Smol, Biology, Professor and Canada Research Chair, Queen's University*

Links
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