

Researchers offer new theory for dogfish and skate population outburst on George's Bank

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New research by scientists at the University of Maryland Center for Environmental Science Chesapeake Biological Laboratory questions the long-held belief that a lack of predators and competitors was the primary cause for the increase of skates and dogfish observed in Southern New England's George's Bank following overfishing of commercially important species in the 1980's.

In an article appearing in the journal *Ecological Applications*, researchers Michael Frisk, Thomas Miller, Steve Martell and Katherine Sosebee argue that the increase of winter skate on George's Bank was the result of a migration to the area from adjacent – or connected – waters. This hypothesis challenges the current notion that the Georges Bank's population is closed and if true, could have significant implications to management of the fishery.

Previously, scientists hypothesized that increased populations of skates and dogfish were the result of less competition from the reduced numbers of commercially important species (including cod, haddock and flounder) normally found in that area. When combined with the belief that the Georges Banks' skate and dogfish populations were closed – or not connected to populations in adjacent areas – fisheries managers believed that declines in abundance could be offset simply by decreases in fishery harvests

“If the regime shift observed on Georges Bank was driven purely by population dynamics internal to the system, then local management

action has the potential to drive the system back to its former state,” said Frisk. “If on the other hand, skate populations in the northwest Atlantic exhibit connectivity, as suggested in our alternative hypothesis, then management of skates must be integrated across the whole northwest Atlantic. Local management actions may be insufficient to alter local abundances. Our research would argue for a broader ecosystem-based approach to fisheries management.”

The concepts Frisk and colleagues put forward also place an emphasis on movement of adults rather than the drift of eggs and larvae as has been typical in research on connectivity among populations.

The research team developed their hypothesis by analyzing survey data collected by the National Marine Fisheries Service and the Canadian Department of Fisheries and Oceans. They found that as winter skate populations on Georges Bank increased, populations appeared to decrease on the Scotian Shelf, some twenty miles away.

Source: University of Maryland

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