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# CORRESPONDENCE



UNITED STATES DEPARTMENT OF COMMERCE  
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January 5, 2017

Mr. Thomas A. Nies  
Executive Director  
New England Fishery Management Council  
50 Water Street, Mill 2  
Newburyport, MA 01950

Re: Comments on Local Depletion to be Considered for Herring ABC Control Rules

Dear Mr. Nies:

We appreciate the opportunity to provide comments on Amendment 8 to the Atlantic Herring Fishery Management Plan. Amendment 8 would specify a long-term acceptable biological catch control rule for the herring fishery and consider alternatives for this control rule that explicitly account for herring's role in the ecosystem. The Council recently decided to expand the scope of Amendment 8 to include consideration of localized depletion in inshore waters. The importance of Atlantic herring as a forage species is underscored by the Council's specified intent to consider a wide range of alternatives for the ABC CR in this amendment, including those that account for Atlantic herring's role in the ecosystem. We commend the Council for adopting an ecosystem-based approach to herring management and for using the Management Strategy Evaluation method for soliciting a broad range of comments on the control rules.

Our comments are related to localized depletion of forage fish in the Stellwagen Bank National Marine Sanctuary (SBNMS). SBNMS is New England's only national marine sanctuary and was established by Congress in 1992 as a marine area of national importance due to its natural productivity and species diversity. SBNMS is a hotspot for prey abundance in the Gulf of Maine (GoM) which is what ultimately attracts the whales, sustains the fish, seabirds and other wildlife, and supports the economic and recreational viability of most current uses in the sanctuary. Key prey species include sand lance, herring, mackerel, and planktonic copepods. Sand lance numbers in the sanctuary are the highest and most concentrated anywhere in the southern GoM, and the sanctuary is in an area of high relative abundance of herring. Accordingly, the sanctuary is one of the most intensively used whale habitats in the northeast continental region of the U.S. The World Wildlife Fund and *USA TODAY* named Stellwagen Bank and vicinity one of the top ten premiere places in the world to watch whales. The readers of *Offshore* magazine voted Stellwagen Bank the best place to watch wildlife and the number three favorite recreational fishing spots in the northeastern U.S. As the U.S. partner of BirdLife International, the Massachusetts Audubon Society (Mass Audubon) has designated Stellwagen Bank an Important Bird Area (IBA) because of its exceptional habitat.



The Ecosystem Based Fisheries Management Plan Development Team's (PDT) latest scientific advice on herring control rules (June 2015) does an excellent job reviewing forage requirements of whales and other marine life and the role Atlantic herring plays in the ecosystem. We concur with the PDT's recommendation that "the Council adopt a strategy of explicit consideration of herring as a critical component of the forage base" and "that herring provide an essential ecosystem service as forage for a broad spectrum of predators." Our comments are intended to amplify some of the points and recommendations made in the PDT report based on the research we've conducted over the past 10 years in SBNMS on whale behavior and feeding ecology as well as on our review of the literature.

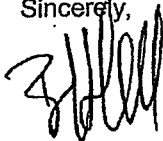
We agree with the PDT's statement that local availability [of prey] at a critical time may be more trophically-important than total herring biomass (p. 11 of report). Local depletion of prey species could have important implications for animals that are preparing for migration and breeding. Of consequence is the fact that baleen whales (humpback, fin, and minke) require a minimum threshold level of prey density to successfully forage (Piatt and Methven, 1992; Hazen et al., 2009) and that humpback whales depend on the spatial characteristics and density of prey schools to maximize their efficiency when surface feeding (Hazen et al., 2009).

We are concerned that traditional MSY approaches for managing forage species can have deleterious effects on species that have high connectance to prey, e.g. humpback, finback, and minke whales. We, and others, have found that an important characteristic of pelagic forage fish hot spots is their persistence, allowing predators to predict their locations and concentrate search efforts to enable optimal foraging (Gende and Sigler, 2006; Hazen et al., 2009). Significant fishing down of prey aggregations in the Stellwagen Bank sanctuary would diminish the reliability and functional utility of this important attribute of the sanctuary. While reductions in prey abundance might not always be sufficient to directly cause a predator species population to decline per se, such reductions can cause shifts in predator species distribution which affects local predator abundance. Local changes in humpback whale abundance and distribution in the western North Atlantic have been correlated with variation in prey availability (Payne et al., 1986; Weinrich et al., 1997). A negative relationship was apparent between the relative abundance of herring and sand lance in the GoM and humpback whale movements from the GoM to eastern Canada when prey densities dropped (Stevick et al., 2006). This study also found that humpback whales exhibited high levels of site fidelity to specific feeding grounds and that the duration of stay at, and tendency to return to, each feeding ground was related to relative prey density.

In summary, what makes SBNMS a special place for whales, whale watchers, cod, tuna, tuna fishermen, commercial fishermen, and seabirds is the persistent presence of forage fish. Given that herring provide an essential ecosystem service for a broad spectrum of predators, including humans, in SBNMS and the greater GoM we request that the Council adopt an alternative management approach to traditional MSY that better accounts for herring's role as forage in the ecosystem.

Thank you for your consideration of our comments.

Sincerely,



Benjamin Haskell  
Acting Superintendent

Literature Cited:

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