

Wednesday, October 2, 2019 1:19 AM

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Topic(s): Other

Comments: Comprehensive Five Year (2020-2024) Research Priorities:

I wanted to comment on a socioeconomic component (loss of the working waterfront in coastal communities) and an Ecosystems Approach to Fisheries Management (EAFM) component (sustainability) from the perspective of being a retired biological oceanographer and grassroots environmental activist living on Cape Cod, Ma.

We are experiencing a migration of forage fish species and Summer Flounder/Scup/Black sea bass from the Mid-Atlantic region into Nantucket Sound and an emigration of Winter flounder; American lobsters; etc. into the rapidly warming Gulf of Maine (which includes Cape Cod Bay). As our coastal waters warm during the Summer and attract more migrating forage fish, it increases our seal populations which are fed upon by great white sharks which pose threats to beach goers which hurts our "Blue Economy". Whale watching is an important component of our economy which has been hurt by the Unusual Mortality Events (UME) for right, humpback and minke whales. Acute and chronic gear entanglements of these whale species has impacted whale watching and fixed gear lobster fisheries which has led the NOAA Fisheries GARFO launching both MMPA (Marine Mammal Protection Act) DEIS to reduce gear entanglements and an ESA (Endangered Species Act) section 7 consultation for North Atlantic right whales (which migrate from Winter breeding grounds off the southeastern US coast) to Summer feeding grounds in the Gulf of Maine/Gulf of St. Lawrence where increased mortalities have lowered the population to 400 animals.

The "sustainability" component of EAFM should include not only changes in the marine food chain due to climate change (warming waters and increased ocean acidity), but also changes in the shifting ocean baseline (Gulf Stream flow rates; North Atlantic Oscillation; Atlantic Meridional Overturning Circulation; etc.) which effect growth; metabolism; recruitment and other components of the flow of energy from the plankton up to Apex predators. The EMaX carbon flow study on the Northeast Continental Shelf Ecosystem provides examples of changes in the marine food chain required to balance primary production with the yield of Living Marine/Protected/Natural Trust resources. The link between cod recruitment and the NAO is an example of how shifts in the jet stream/Arctic ice melting cause shifts in the ocean baseline. Similar effects are likely to occur in the Mid-Atlantic ocean as species shift in time and space which alters predation and competition patterns and the balance between the grazing food chain/microbial food web in the plankton. These changes in the water column ecosystem and ocean forcing factors should be reflected in the productive capacity of Essential Fish Habitat (EFH) and the "natural mortality" component of fishery population dynamics models which help set the targets for FMP quotas and to determine whether overfishing is occurring.

The whale UMEs and shifts in natural trust resources (seabirds) should also be a component of the "sustainability dialog", since the ocean is an open dynamic system which is not at equilibrium (unlike the steady state, equilibrium conceptual model used currently in fisheries management). Environmental groups like the Sierra Club include such factors in their national Sustainable Fisheries Policy. Other marine conservation groups have similar concerns in protecting marine biota and their habitats/increasing ocean biodiversity.

Since many coastal areas are losing their working waterfronts to tourism and economic development that is not water dependent, this has negative consequences for both commercial and recreational fishing. Since saltwater angling on Cape Cod includes head boats/charter vessels for tourists and fishing by residents from their own vessels, I feel that the economic multiplier effect on our local economy is greater for recreational fishing than for commercial fishing activities. The same appears to be true in Ocean County, NJ where my extended family lives. The prevailing socioeconomic models assume that commercial fishing is more important to the "Blue Economy" of coastal areas than is recreational fishing which creates counter intuitive financial incentives from local/state governments. Some proponents of "sustainable fishing" in the European Union want to concentrate fish harvesting in coastal areas and leave the offshore regions to act as marine preserves to support coastal stocks. I don't know if this is a viable concept under the Magnuson-Stevens Sustainable Fisheries Act, but we need a better integration of socioeconomic and EAFM models to manage fisheries in an era of changes in the marine food chain and shifts in the ocean forcing baseline (biological, chemical and physical).

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