

Aloha All,

Below are a few personal comments on the Western Pacific Regional Fishery Management Council's August 8, 2016 letter to President Obama regarding the request to expand the Papahānaumokuākea Marine National Monument (See <http://www.wpcouncil.org/wp-content/uploads/2016/05/WPRFMC-letter-to-Pres.-Obama-re-PMNM-expansion-request.pdf>).

WPRFMC's letter states, "Approximately 10 percent of the Hawaii longline fishing effort [number of hooks fished] occurs in the US EEZ around the NWHI." This is an accurate estimate of the average percentage across the past several years. However, fishery statistics show that the annual percentage has been steadily declining. In 1997, longline effort occurring in the US EEZ around the NWHI accounted for 26% of total effort; by 2014, the percentage had dropped to 5% (See attached **Hawaii Longline Catch and Effort**). The reason for the downward trend is that the total effort of the Hawaii longline fleet has been steadily increasing, while the level of effort in the US EEZ around the NWHI has remained fairly flat (See attached **Figure 3**). Hawaii longline vessels are capable of traveling long distances and have shifted much of their effort to high-seas fishing grounds. Nevertheless, the US EEZ around the NWHI continues to be utilized by a sizeable portion of the fleet; in 2014, 89 (63%) of the 140 vessels active in the Hawaii longline fishery that year fished in the area. See attached **Figure 1** for the spatial distribution of Hawaii longline fishing effort, including effort in the US EEZ around the NWHI.

WPRFMC's letter states, "The Hawaii fleet utilizes the US national quota [of bigeye tuna] in the Eastern and Western and Central Pacific Ocean, which is small compared to the quota of other nations." As shown in attached **Figure 4**, it is correct that the future total level of effort expended by the Hawaii longline fleet may be constrained by flag-based longline bigeye tuna catch quotas imposed by the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (about one-third of the catch in the deep-set (tuna) Hawaii longline fishery is bigeye tuna). Since 2012, however, the fleet has compensated for these limits by purchasing part (up to 1,000 mt) of the 2,000 mt of bigeye tuna that NMFS allocates annually to each of the US Pacific Territories of American Samoa, Guam and CNMI under 50 CFR 665.819 (an exception was 2015, when the Hawaii longline fleet reached the US national quota mid-year due to catches of more and larger bigeye tuna. The deep-set fishery experienced a two-month closure as it waited for NMFS to complete the Territory allocations). Between 2012 and 2014, bigeye tuna catches by the fleet increased by 36% even though the US national quota of bigeye tuna in the Western and Central Pacific Ocean was maintained at 3,763 mt during that period (it was reduced to 3,554 mt in 2015 and 2016, and in 2017, it will be 3,345 mt).

WPRFMC's letter states, "Expanded monument designation does not have the capacity to increase the productivity of the ecosystem." At the last RAC meeting we heard about the deep-water habitats in and around the Monument that support high-density deep-sea coral and sponge communities. In addition, other studies support hypotheses that seamounts may be areas of special interest for management of pelagic predators, including tuna. They generate conditions such as increased vertical nutrient fluxes and material retention that promote productivity and fuel higher trophic levels, and may become "hotspots" of pelagic biodiversity (See <http://www.pnas.org/content/107/21/9707.full>). WPRFMC has acknowledged that the Hancock Seamounts located outside the northwest boundary of the Monument "may support a highly productive ecosystem and is known to be an excellent fishing ground for pelagic species such as tuna, as well as armorhead and other

eipbenthic species" (See [http://www.fpir.noaa.gov/SFD/pdfs/feps/Hawaii\\_Amendment\\_2.pdf](http://www.fpir.noaa.gov/SFD/pdfs/feps/Hawaii_Amendment_2.pdf)). Related studies have also focused on local retention or limited movement of tuna in the Hawaiian Islands (See <http://localiahawaii.com/wp-content/uploads/2015/07/Nursery-Origins-of-Yellowfin-Tuna.pdf>). A report prepared for The International Seafood Sustainability Foundation, a global partnership among scientists and tuna processors, states, "Given the challenges facing spatial protection of highly mobile pelagic species, such as tunas, attention is increasingly being directed towards protecting smaller areas where pelagic species spend a disproportionate amount of time, are highly vulnerable to anthropogenic pressures and/or are associated with particular life-history stages" (See <http://bmis.wcpfc.int/docs/references/ISSF-2012-02-MPA-review.pdf>).

Other research has focused on the ecosystem impacts of tuna fisheries, including the Hawaii longline fishery. For example, the NMFS Pacific Islands Fisheries Science Center found that as effort in the Hawaii deep-set longline fishery increased from 1996 to 2011, the annual catch of large fish declined by nearly 50%, while the catch of small fish increased by about 25%. Observed and modeled trends indicate that size-based predation plays a key role in structuring the subtropical Pacific ecosystem. As the largest fish species (including target species such as bigeye tuna) are exploited by the fishery their declining population exerts less predation pressure on smaller fish, thus allowing the populations of smaller (often less commercially valuable) fish to grow. According to NMFS researchers, an increase in the abundance of smaller species and a decline in the abundance of larger species may increase the vulnerability of the ecosystem if the smaller species have faster turnover, shorter life spans, and track environmental change more closely (See [https://pifsc-www.irc.noaa.gov/qrb/2013\\_03/article\\_04.php](https://pifsc-www.irc.noaa.gov/qrb/2013_03/article_04.php)).

Finally, WPRFMC's letter states, "The closure would exasperate the problem of sharks preying on juvenile [monk] seals." The assumption seems to be that the longline fishery reduces the population of sharks that prey on monk seals. However, other statements in the letter appear to contradict this assumption. The letter notes that the major threat to Hawaiian monk seals are Galapagos sharks, which, according to the letter, occasionally cross the open ocean between islands, but are generally resident at a single island. Elsewhere, however, the letter states, "Sharks caught by the Hawaii longline fishery are highly migratory pelagic sharks that do not show site fidelity to the NWHI." Moreover, the letter reports that ninety-six percent of the sharks caught by the Hawaii longline fishery are released alive.