**Marine-life Data and Analysis Team (MDAT) Fish Product Updates**
**Summary of Changes for v2.0 Update (June 2018)**

Overview

Fish individual species products were not updated for this release. This document contains a brief summary of the changes to the MDAT group summary products. Additional details on the individual species and summary products can be found in the MDAT Technical Report (Curtice et al., 2018).

Species group summary product updates

1. Fish group diversity layers have changed. In the initial release, group richness products filtered out cells with extremely low abundance/biomass values, but the diversity products did not. This release adds that same low cell-value filtering algorithm to the diversity products for the fish. Each individual species layer is pre-filtered to contain only the cells that are included in the area holding 95% of the total predicted biomass for the species.
2. Previously, group summary products were only available for the NEFSC trawl data. With this release, group summary products are available for the NEAMAP individual species trawl data. Methods to create the summary products are identical for both NEFSC and NEAMAP species group summary products.
3. Two new groups have been defined, and group summary products for total biomass, species richness, and two diversity indices have been created for both the NEFSC and the NEAMAP trawl survey data. These new groups are based on Hare et al. (2016):
    - **Very high and high vulnerability to climate related changes in abundance**: Alewife, American eel, American shad, Atlantic halibut, Atlantic sturgeon, Atlantic wolffish, Black sea bass, Blueback herring, Cusk, Hickory shad, Horseshoe crab, Northern shrimp, Ocean pout, Sand tiger, Sea scallop, Striped bass, Tautog, Thorny skate, Tilefish, Winter flounder, Witch flounder
    - **Very high and high vulnerability to climate related changes in distribution**: Acadian redfish, American eel, American lobster, American plaice, Atlantic cod, Atlantic croaker, Atlantic halibut, Atlantic herring, Atlantic mackerel, Atlantic menhaden, Barndoor skate, Black sea bass, Butterfish, Goosefish, Haddock, Little skate, Longfin squid, Northern kingfish, Northern shortfin squid, Northern shrimp, Pollock, Red hake, Rosette skate, Sand tiger, Scup, Silver hake, Smooth dogfish, Spiny dogfish, Spot, Striped bass, Summer flounder, Thorny skate, Weakfish, White hake, Windowpane, Winter flounder, Winter skate, Witch flounder, Yellowtail flounder


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References

Curtice, C., Cleary J., Shumchenia E., Halpin P.N. 2018. Marine-life Data and Analysis Team (MDAT) technical report on the methods and development of marine-life data to support regional ocean planning and management (v2.0). Prepared on behalf of the Marine-life Data and Analysis Team (MDAT). Accessed at: http://seamap.env.duke.edu/models/MDAT/MDAT-Technical-Report.pdf.

Fogarty, M., Perretti, C. 2016. Distribution and biomass data for fish species along the U.S. east coast from about Cape Hatteras north to Canadian waters, created by the Northeast Fisheries Science Center for the Northeast Regional Ocean Council. Online access: http://www.northeastoceandata.org/data-explorer/?fish

Hare JA, Morrison WE, Nelson MW, Stachura MM, Teeters EJ, Griffis RB, et al. (2016) A Vulnerability Assessment of Fish and Invertebrates to Climate Change on the Northeast U.S. Continental Shelf. PLoS ONE 11(2): e0146756. https://doi.org/10.1371/journal.pone.0146756



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