



## **Marine-life Data and Analysis Team (MDAT) Fish Product Updates Summary of Changes for v3.0 Update (June 2019)**

### Overview

Fish individual species products from the NEFSC trawl survey were updated by MDAT, in partnership with The Nature Conservancy, and OceanAdapt (a collaboration between the Pinsky Lab at Rutgers University and the National Marine Fisheries Service) in early 2019. These products were reviewed by species experts and other stakeholders, and are documented in detail in Curtice et al. (2019). This document contains a brief summary of the changes to the NEFSC base-layer products and the MDAT NEFSC group summary products. Additional details on these products and other base-layer and summary products can be found in the MDAT Technical Report (Curtice et al., 2019). Base-layer products for the MDMF, MENH, and NEAMAP trawl surveys have not been updated.

### Individual species base-layer updates

1. Additional season. Spring individual species biomass is now represented in addition to fall individual species biomass.
2. Additional survey data. Individual species products now include data at each surveyed trawl site from 2010-2016 for Fall and 2010-2017 for Spring (records for Fall 2017 were removed due to incomplete coverage of the survey area, as recommended by the NOAA Northeast Fisheries Science Center (NEFSC)).
3. New mapping methodology. In addition to maps of observed biomass for each individual species, MDAT and partners developed maps of interpolated biomass using code initially developed by NEFSC to create animations of species biomass change over time. The interpolation considers both depth differences and horizontal distances between the interpolated location and sampled locations. Strata that were not surveyed were removed from the interpolation. The results are 2km x 2km grid-cell interpolations of fish biomass informed by bathymetry. Interpolated biomass products represent the average biomass for each species during each season for the examined years (2010-2016 for fall and 2010-2017 for spring).
4. New species. 82 species were previously mapped in v2.0. For v3.0, Offshore Hake was added, Capelin was removed, and American Sand Lance and Northern Sand Lance were merged into a generic "Sand Lance" species. This brings the total for v3.0 to 81 species.



## Species group summary product updates

1. Additional season. There are now two products for each species group - a spring (2010-2017) and a fall (2010-2016) product - representing total biomass, species richness, Shannon diversity, Simpson diversity, core biomass area - Northeast scale, core biomass area - Mid-Atlantic scale, and core biomass area - Northeast Shelf scale.
2. Species group membership. Species group membership has not changed from v2.0, but offshore hake was added to the following groups: All, Demersal, NEFMC small mesh multispecies FMP, EFH species, Distribution vulnerable to climate changes. Spotted hake, which was previously only included in the "All" fish species group, was added to the Demersal group.

## References

Curtice, C., Cleary J., Shumchenia E., Halpin P.N. 2019. 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. 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>.