

## Demersal Fish-Trends in Average Abundance

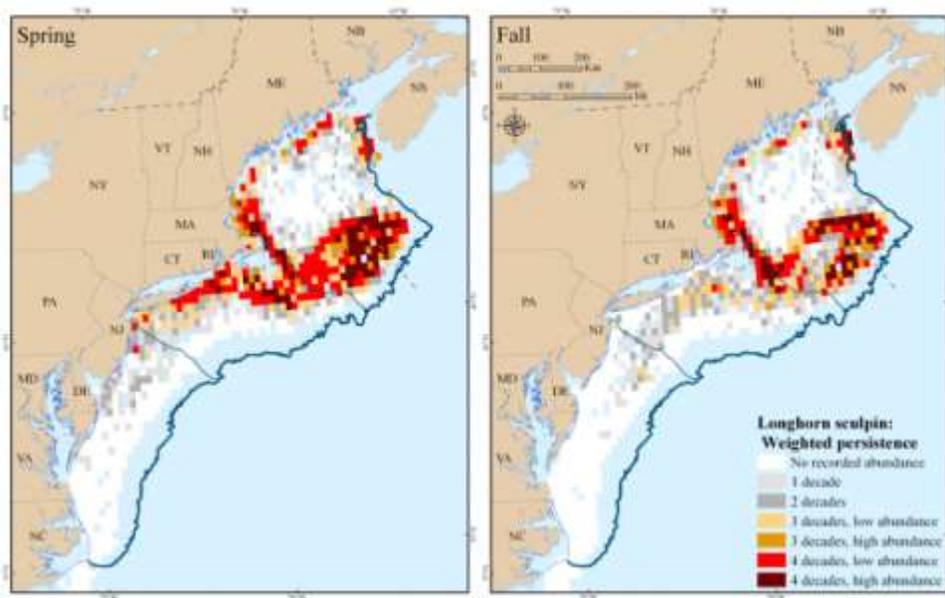
**Species:** Atlantic cod, Atlantic croaker, Atlantic halibut, Atlantic wolffish, barndoor skate, black sea bass, clearnose skate, cusk, haddock, little skate, longhorn sculpin, monkfish, northern sea robin, ocean pout, American plaice, pollock, red hake, Acadian redfish, rosette skate, scup, silver hake, spiny dogfish, spot, summer flounder, tautog, thorny skate, golden tilefish, weakfish, white hake, winter flounder, witch flounder, and yellowtail flounder

**Data Source(s):** Derived by The Nature Conservancy from NMFS bottom trawl data (fishery independent)

**Scale:** Ten minute square

**Year(s):** 1968 - 2006

**Product Details:** Using basic distribution maps that display the trawl survey points where each species was caught, TNC calculated the trend of the average abundances over four decades for each ten minute square. Only squares with 4 decades of data were used in the trend analysis. For these squares, we fit a linear regression line to the log average abundance values for each successive decade. Regression lines with a P-value less than 0.1 (90% probability) were considered to show a significant trend. Positive slopes indicated an increasing trend in abundance, negative slopes indicated a decreasing trend, and insignificant regressions indicated no trend.



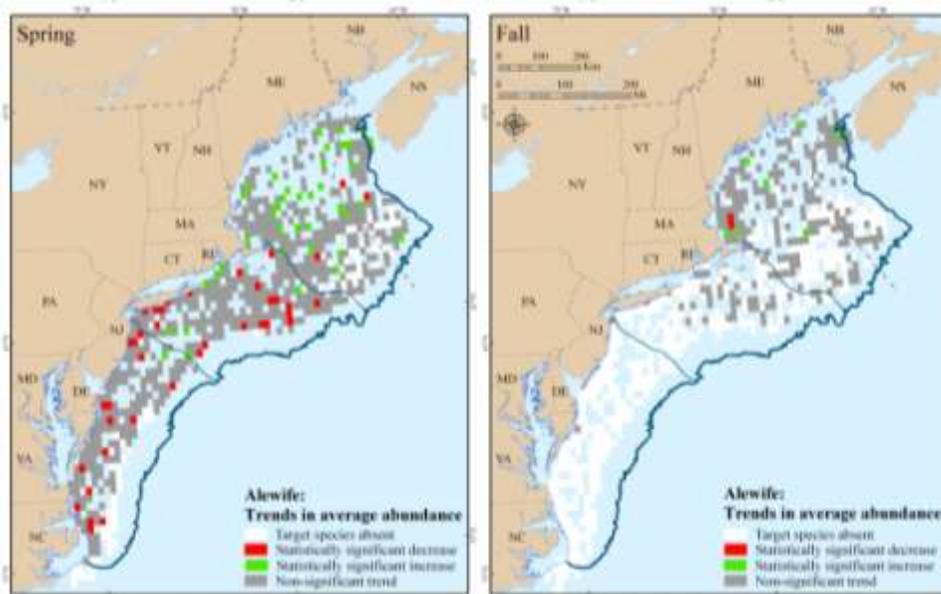
## Demersal Fish-Weighted Persistence

**Species:** Atlantic cod, Atlantic croaker, Atlantic halibut, Atlantic wolffish, barndoor skate, black sea bass, clearnose skate, cusk, haddock, little skate, longhorn sculpin, monkfish, northern sea robin, ocean pout, American plaice, pollock, red hake, Acadian redfish, rosette skate, scup, silver hake, spiny dogfish, spot, summer flounder, tautog, thorny skate, golden tilefish, weakfish, white hake, winter flounder, witch flounder, and yellowtail flounder.

**Data Source(s) and years:** Derived by The Nature Conservancy from NMFS bottom trawl data (fishery independent); 1968-2006

**Scale:** Ten minute square

**Product Details:** Weighted persistence is a calculation where each decade is weighted by the average abundance of the species over the decades it was present. The calculation involves two variables, abundance and persistence. Abundance was measured in numbers of individuals of a given species caught per sampling tow. Persistence refers to the consistency with which a species was caught in the same general area over time. Data was transformed to a log scale and the mean log abundance was calculated for each decade within each ten minute square. These decadal average scores were then averaged across all decades to obtain a grand average abundance. Only decades where the species was present was used in calculating the grand average abundance as the absent decades were already accounted for in the persistence metric.



## Diadromous Fish - Trends in Average Abundance

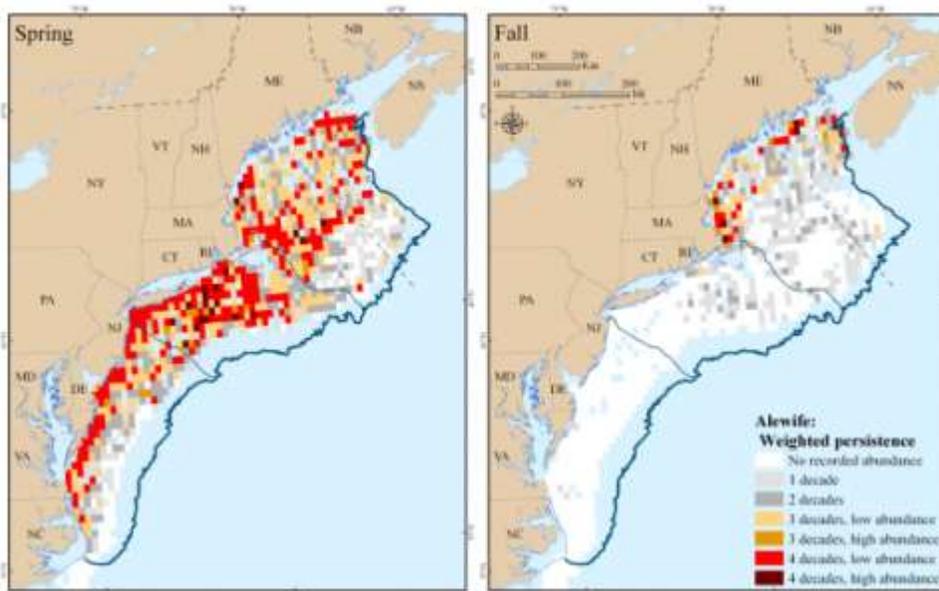
**Species:** Alewife, American eel, Atlantic salmon, American shad, Atlantic sturgeon, Atlantic tomcod, American shad, alewife, blueback herring, hickory shad, rainbow smelt, sea-run brook trout, and shortnose sturgeon.

**Data Source(s):** Derived by The Nature Conservancy from NMFS bottom trawl data (fishery independent)

**Scale:** 10 minute square

**Year(s):** 1968 - 2006

**Product Details:** Using basic distribution maps that display the trawl survey points where each species was caught, TNC calculated the trend of the average abundances over four decades for each ten minute square. Only squares with 4 decades of data were used in the trend analysis. For these squares, we fit a linear regression line to the log average abundance values for each successive decade. Regression lines with a P-value less than 0.1 (90% probability) were considered to show a significant trend. Positive slopes indicated an increasing trend in abundance, negative slopes indicated a decreasing trend, and insignificant regressions indicated no trend.



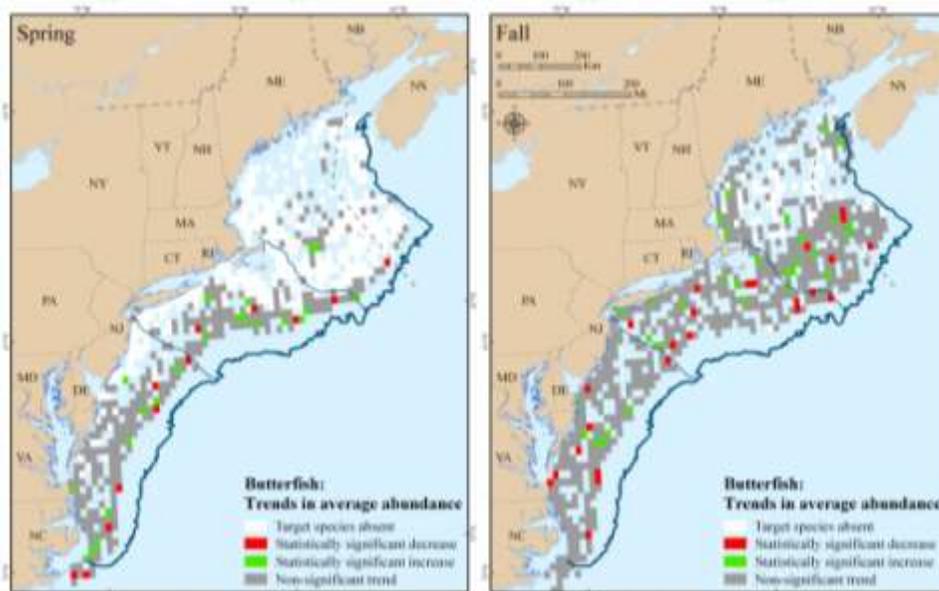
## Diadromous Fish-Weighted Persistence

**Species:** Alewife, American eel, Atlantic salmon, American shad, Atlantic sturgeon, Atlantic tomcod, American shad, alewife, blueback herring, hickory shad, rainbow smelt, sea-run brook trout, and shortnose sturgeon.

**Data Source(s) and years:** Derived by The Nature Conservancy from NMFS bottom trawl data (fishery independent); 1968-2006

**Scale:** Ten minute square

**Product Details:** Weighted persistence is a calculation where each decade is weighted by the average abundance of the species over the decades it was present. The calculation involves two variables, abundance and persistence. Abundance was measured in numbers of individuals of a given species caught per sampling tow. Persistence refers to the consistency with which a species was caught in the same general area over time. Data was transformed to a log scale and the mean log abundance was calculated for each decade within each ten minute square. These decadal average scores were then averaged across all decades to obtain a grand average abundance. Only decades where the species was present was used in calculating the grand average abundance as the absent decades were already accounted for in the persistence metric.



## Small Pelagic Fish - Trends in Average Abundance

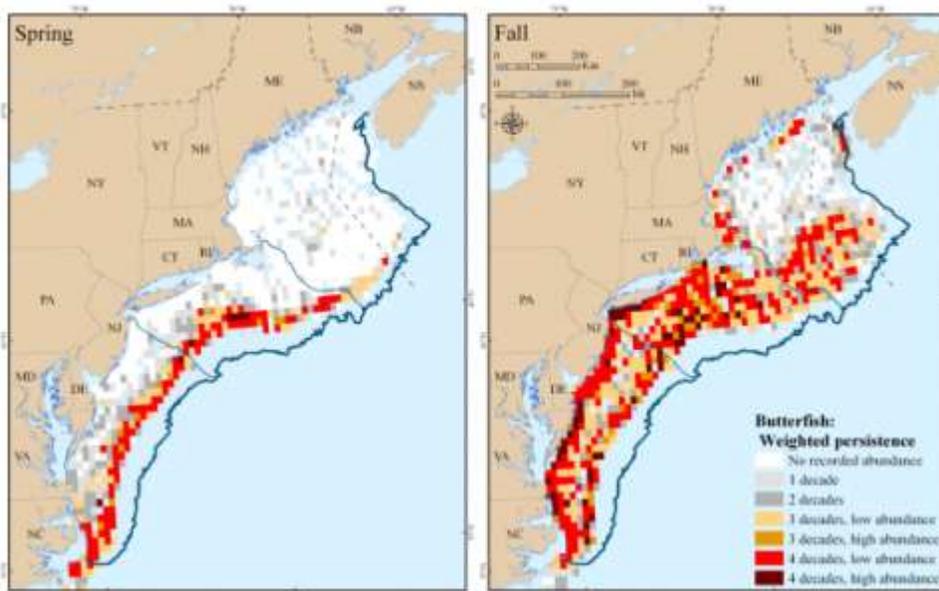
**Species:** American sand lance, Atlantic herring, Atlantic mackerel, Atlantic menhaden, butterfish, longfin squid, northern sand lance, and northern shortfin squid.

**Data Source(s):** Derived by The Nature Conservancy from NMFS bottom trawl data (fishery independent)

**Scale:** Ten minute square

**Year(s):** 1968 - 2006

**Product Details:** Using basic distribution maps that display the trawl survey points where each species was caught, TNC calculated the trend of the average abundances over four decades for each ten minute square. Only squares with 4 decades of data were used in the trend analysis. For these squares, we fit a linear regression line to the log average abundance values for each successive decade. Regression lines with a P-value less than 0.1 (90% probability) were considered to show a significant trend. Positive slopes indicated an increasing trend in abundance, negative slopes indicated a decreasing trend, and insignificant regressions indicated no trend.



## Small Pelagic Fish-Weighted Persistence

**Species:** American sand lance, Atlantic herring, Atlantic mackerel, Atlantic menhaden, butterfish, longfin squid, northern sand lance, and northern shortfin squid.

**Data Source(s) and years:** Derived by The Nature Conservancy from NMFS bottom trawl data (fishery independent); 1968-2006

**Scale:** Ten minute square

**Product Details:** Weighted persistence is a calculation where each decade is weighted by the average abundance of the species over the decades it was present. The calculation involves two variables, abundance and persistence. Abundance was measured in numbers of individuals of a given species caught per sampling tow. Persistence refers to the consistency with which a species was caught in the same general area over time. Data was transformed to a log scale and the mean log abundance was calculated for each decade within each ten minute square. These decadal average scores were then averaged across all decades to obtain a grand average abundance. Only decades where the species was present was used in calculating the grand average abundance as the absent decades were already accounted for in the persistence metric.

Species with limited data were not analyzed.