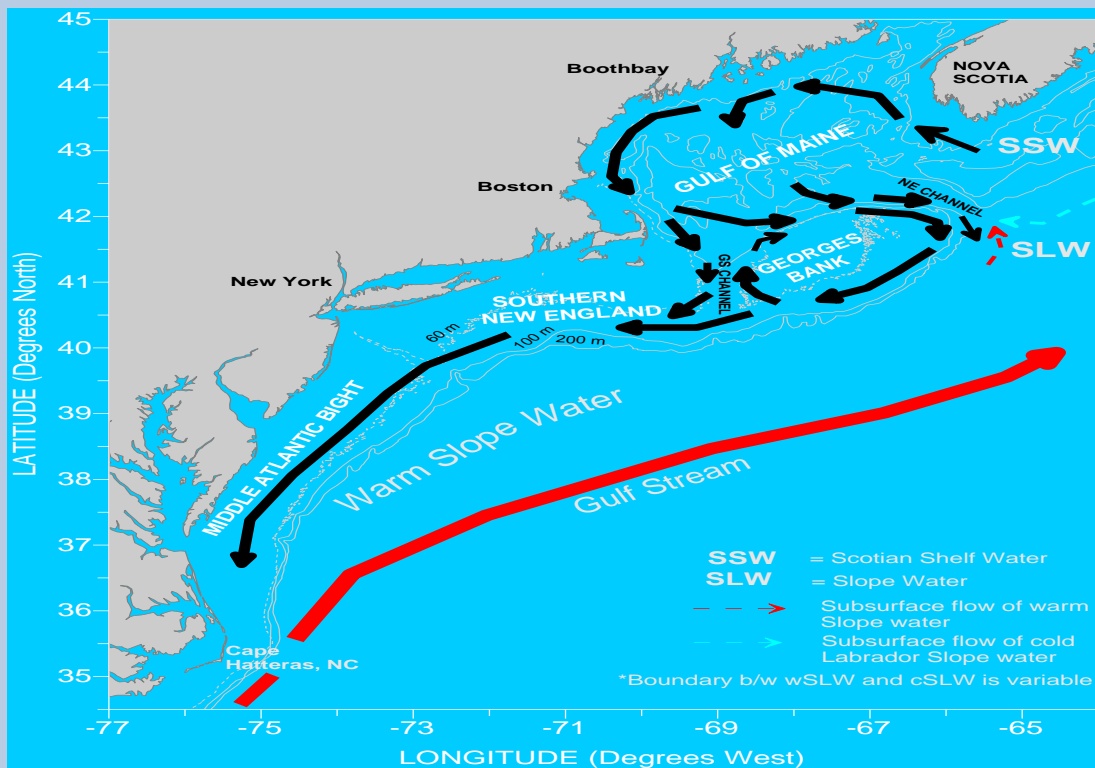


# The 2017 Ocean Climate Status Summary for NAFO S. A. 5 and 6.

## Georges Bank, Gulf of Maine and the Mid-Atlantic Bight

Ocean climate conditions in this region are largely determined by the relatively cold low salinity coastal water from the Scotian Shelf and the warm, saline Slope Water from the south together with local air-sea heat fluxes.

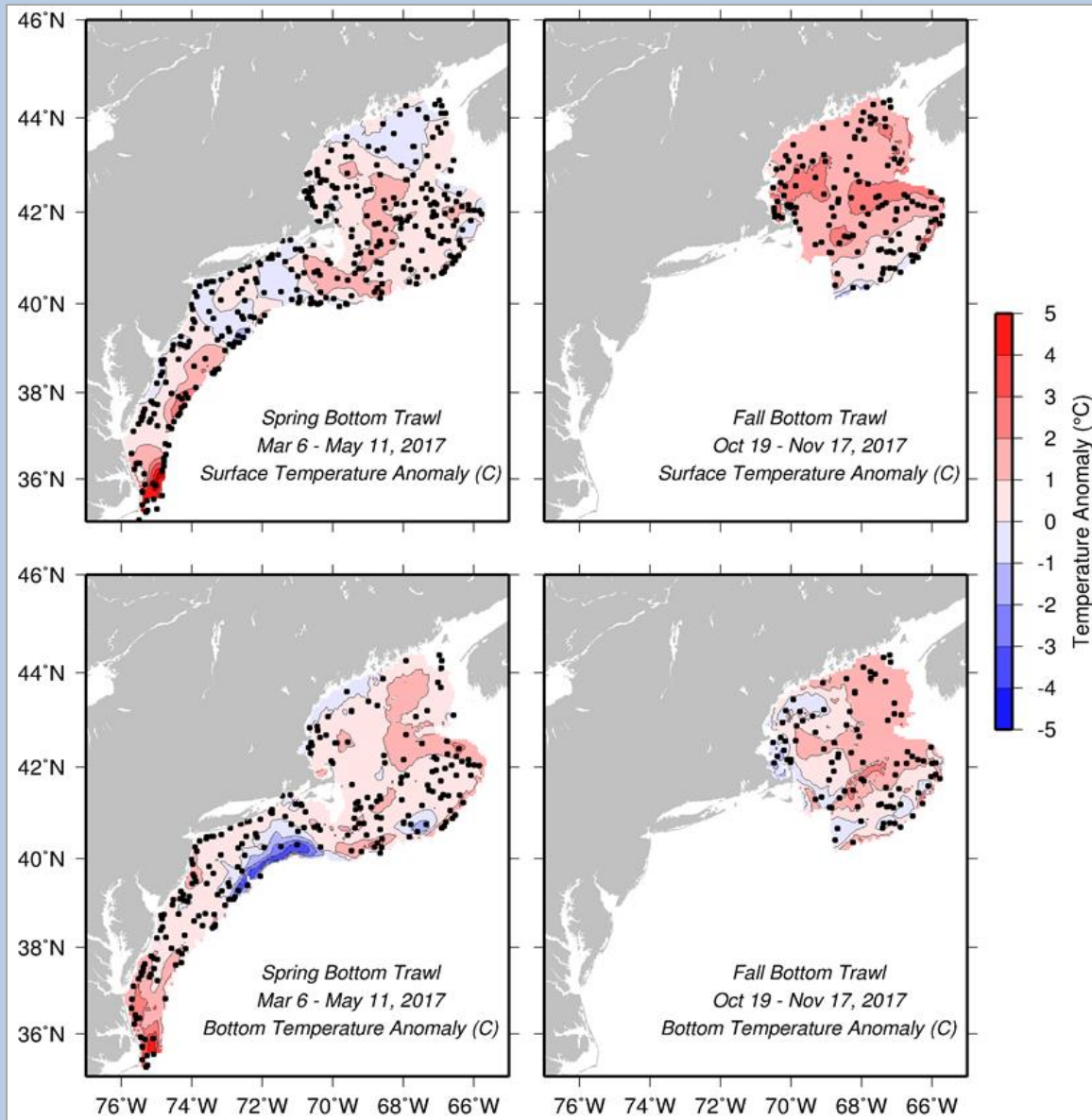
The map shows the main bathymetric features and the general circulation in the region.



**Observations indicate that ocean temperatures on the NEUS shelf continue to increase, a trend that began in 1977.**

## SURFACE AND BOTTON TEMPERATURE

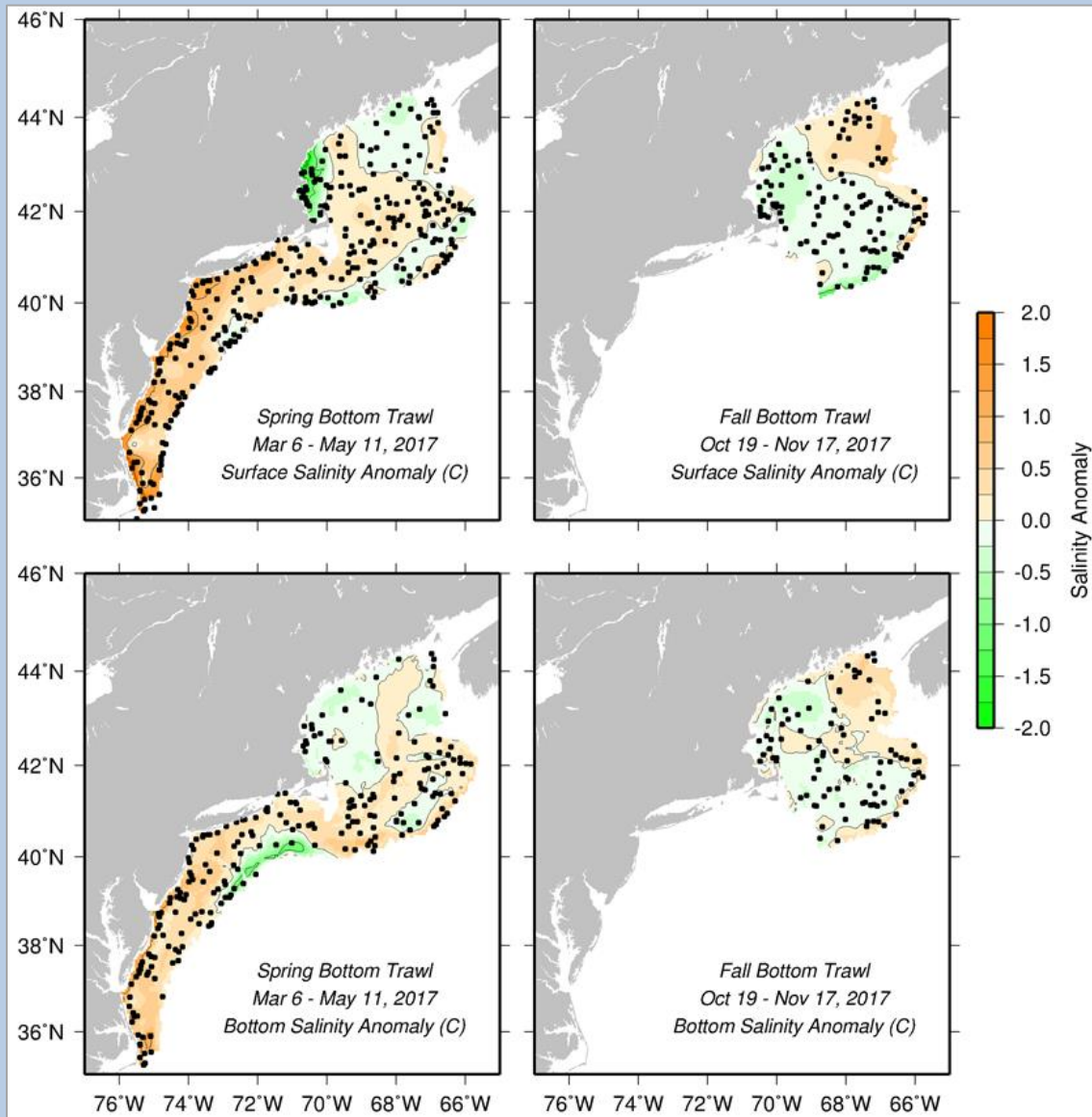
Surface temperature anomalies for 2017 in Subareas 5 and 6 shows mostly warm anomalies in the fall with variable conditions at the surface in spring. There was a notable cold bottom temperature anomaly during the spring in the Mid-Atlantic Bight area.



The black dots are the observation locations from spring and fall Ecosystem surveys of the NEUS Shelf.

## SURFACE AND BOTTON SALINITY

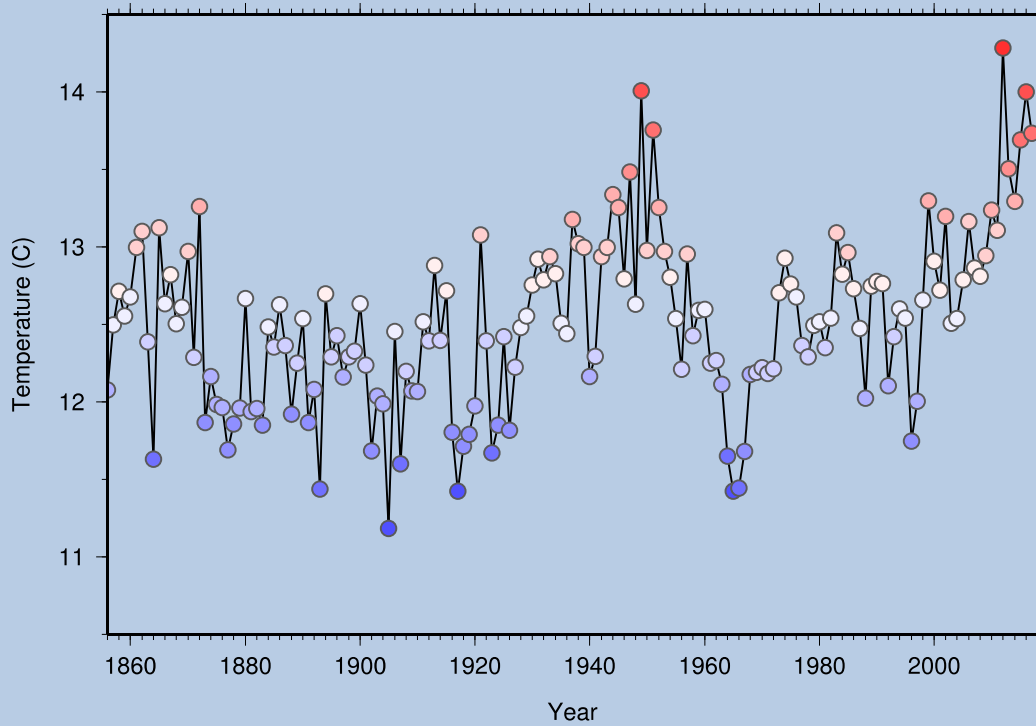
Surface and bottom salinity anomalies in Subareas 5 and 6 during 2017 show generally saltier than normal conditions in most areas during the spring, except for some isolated areas. During the fall the eastern and western Gulf of Maine shows opposing salinity anomalies.



The black dots are the observation locations from spring and fall Ecosystem surveys of the NEUS Shelf.

## SEA-SURFACE TEMPERATURE TRENDS

Average annual sea surface temperature for the NEUS shelf region showing the recent warming trend across the region.



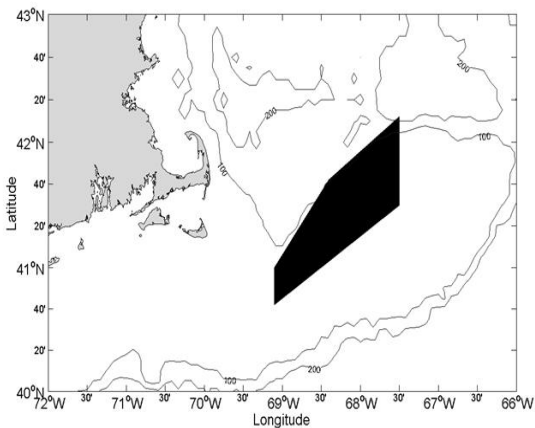
Data from NOAA's extended reconstructed sea surface temperature product (<http://www.esrl.noaa.gov/psd/data/gridded/data.noaa.ersst.html>)

## TEMPERATURE AND SALINITY TRENDS

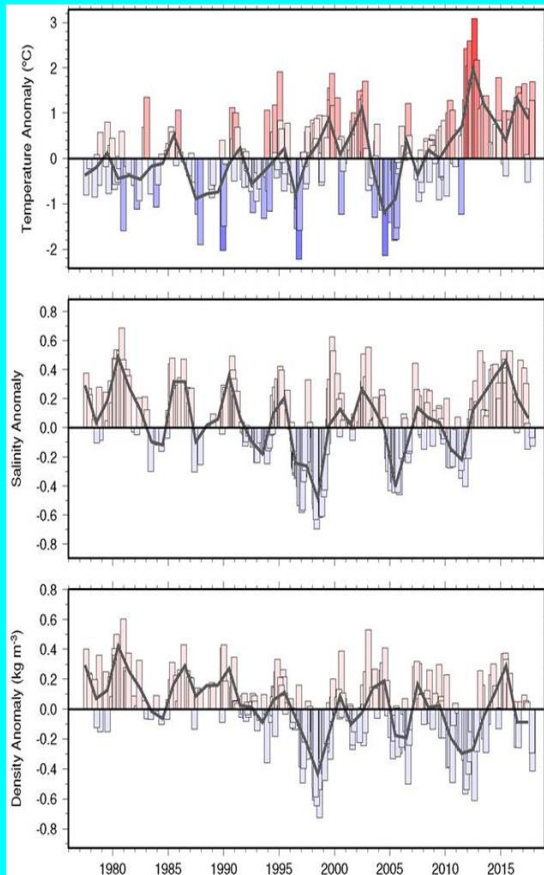
In Subarea 5, NW Georges Bank, surface (0-30 m) temperature and salinity have generally increased from the low values that occurred in 2004 and 2005, with about a 3°C/0.5 increase in temperature and salinity, respectively.

In 2016, both temperature and salinity remained above normal but in 2017 salinities returned to fresher than normal conditions while temperatures remained above normal.

### NW Georges Bank Surface Temperature and Salinity Anomalies (1-30 m)\*



\* Reference Period for Anomalies: 1981-2010



## Highlights for 2017

- ***On the Northeast U.S. shelf, 2017 was characterized by warmer than average conditions across the region.***
- ***Fall water temperatures were notably warm across the NEUS Shelf, consistent with anomalously warm air temperatures.***
- ***Near bottom waters in the eastern Gulf of Maine (GoM) were more than 1 SD warmer and saltier than average throughout the year.***
- ***Deep waters entering the Gulf of Maine were predominantly warm and salty, except in June when relatively cool, very fresh waters were observed in the Northeast Channel.***
- ***Warm winter air temperatures and late onset of storms suppressed winter mixing in the western Gulf of Maine, leading to warmer Gulf of Maine intermediate water mass.***
- ***Slope waters entering the Gulf of Maine through the Northeast Channel were anomalously warm and salty, consistent with the properties of Warm Slope Water derived from subtropical origins.***

### **For Further Information Contact:**

**Paula S. Fratantoni**  
NOAA Fisheries  
Northeast Fisheries Science Center  
Woods Hole, MA  
[paula.fratantoni@noaa.gov](mailto:paula.fratantoni@noaa.gov)

### **Reference:**

**Fratantoni P. 2018. Hydrographic Conditions on the Northeast United States Continental Shelf in 2017 – NAFO Subareas 5 and 6. NAFO SCR. Doc. 2018/014. Serial No. N6798.**



**NOAA**

**FISHERIES SERVICE**  
Northeast Fisheries Science Center  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

**NEFSC**

