Summer Flounder have been doing well, aside from various fluctuations in abundance. I created a poster with my findings to be presented at the Maritime Aquarium’s Fish School on February 24, 2016 (Fig. 3). At the Fish School event with my poster that conveys a synopsis of my findings.

**Public Education**
- I created a poster with my findings to be presented at the Maritime Aquarium’s Fish School on February 24, 2016 (Fig. 3).
- Roughly 100 teachers showed up to the event and many came up to ask me to convey my discoveries to them.

**Introduction**

The Long Island Sound (LIS) is an estuary, meaning that it is a place where ocean’s salt water meets fresh water. This is important because it can include many species of marine life. The LIS is home to many game fish such as Striped Bass, Bluefish and Flounder. Flounder, one important type of game fish, is a flatfish species that reside at the bottoms of bodies of water. In the Long Island Sound, there are three species of flounder: Summer (Paralichthys dentatus), Winter (Pseudopleuronectes americanus) and Windowpane (Scophthalmus aquosus) Flounders. The study and regulation of the abundance over extended periods of time is important because the loss of one but three species in the sound could upset the balance of the marine life in the sound. Plus those who come to the sound regularly to catch fluke would now have to go somewhere else to catch these fish. (LIS Study).

To assess the health of the LIS as well as guide management of flounder, long-term data on flounder abundance is vital. Fortunately, the Maritime Aquarium in Norwalk has conducted monthly trawl surveys in the LIS for over 20 years to monitor the populations of over 40 marine species. Nevertheless, no one has utilized the data to assess abundance patterns of flounder.

**Objectives:**
1. To evaluate population trends of three species of flounder in the LIS using the Maritime Aquarium’s long-term trawl data set;
2. Research possible causes for the abundance pattern;
3. Educate the public on the findings.

**Methods**

**Study Area and Organism**
- The Maritime Aquarium conducts trawl surveys to study the organisms living in the Long Island Sound (Fig. 1).
- Abundance data used for my project were collected from 1993 to 2014. Trawl surveys were conducted typically from March to December (survey months vary yearly).
- Number of surveys vary per month; some months had 1 while others had 44.
- Because of inconsistency of trawls per month, I calculated the average abundance data used for my project were collected from 1993 to 2014. Trawl surveys were conducted typically from March to December (survey months vary yearly).
- Number of surveys vary per month; some months had 1 while others had 44.
- Because of inconsistency of trawls per month, I calculated the average number of individuals per trawl survey per month.
- Next, I graphed the average number of individuals per trawl per month over the 21 year-period for each species.
- Then analyzed the data to assess abundance patterns of flounder.

**Results**

Trends in the abundances of each flounder species were different (Fig. 2).

**Summer Flounder**—Increased
- Summer Flounder have been doing well, aside from various fluctuations in population.

**Winter Flounder**—Stable
- Although the Winter Flounder had a severe drop in abundance in the 1990s, abundances increased in the 2000s, producing a trend line with no slope.

**Windowpane Flounder**—Decreased
- Windowpane initially had much higher abundances than the Summer and Winter; however there was a huge decrease in their population.

**Discussion**

**Conclusions**

My research on flounder revealed potential reasons for the trends in variation in abundances of the three species over the 21 year-period. The Summer Flounder may be doing well because it can have up to 4 million eggs during a spawning season (CPT Dave). Winter Flounder predate on many species, including juvenile Winter Flounder and Windowpane (NJ Scuba.

Winter Flounder did experience a drop in their springtime abundance due to the fact that they thrive in the colder climates, along with the competition they have with other species like seals. (Long Island Sound Study)

Windowpane are the smallest of the three flounder species, which makes it the most susceptible to predators in LIS (EDC URI). In 2012, the overall catch limit was exceeded by approximately 28% (NEFSC). This shows that people have been overfishing this species.

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**References**

http://longislandsoundstudy.net/about-the-sound/what-makes-it-special/
http://longislandsoundstudy.net/2012/01/game-fish/