In the San Francisco Estuary, the rising number of jellyfish are in competition with the endangered delta smelt for the same food sources. The three most prevalent jellyfish (Maeotias marginata, Blackfordia virginica, and Pleurobrachia bachei) have established populations in ecological niches defined by qualities such as salinity and temperature. Determining these niches helps better understand interactions between jellyfish and delta smelt.

**Background**

Plankton tows were used to collect samples at 9 stations of varying salinities across the San Francisco Estuary. Samples were taken monthly over two years to account for jellyfish lifecycle and environmental variability. Samples were preserved and processed by manually removing jellyfish and observing them under a microscope. Number, species, size, and sample location were recorded.

**Methods**

Samples were taken monthly over two years to account for jellyfish lifecycle and environmental variability. Temperatures did not vary between years. Abundance of jellyfish was highest in warmer months and at higher salinities.

**Results**

- **Salinity of the San Francisco Estuary**
- **Temperature of San Francisco Estuary over the Sampling Period**

**Conclusions**

B. virginica and P. bachei thrive in high salinity habitats; M. marginata thrives in freshwater habitats.

M. marginata and B. Virginica are more abundant in warm waters; P. bachei is abundant across all temperatures sampled. Understanding the location and seasonal trends of these jellyfish provides insight on overlap with delta smelt niches to predict potential competition.