

## Trends in Jellyfish Bycatch from the Bering Aleutian Salmon International Survey (BASIS)

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Jellyfish sampling was incorporated aboard the US BASIS (Bering Aleutian Salmon International Surveys) vessels beginning in 2004 and continues through 2008. All jellyfish medusae caught in the surface trawl (top 18 m of water column) are sorted by species and subsampled for bell diameter and wet weight. Six species are commonly caught with the surface trawl: *Aequorea sp.*, *Chrysaora melanaster*, *Cyanea capillata*, *Aurelia labiata*, *Phacellocephora camtschatica*, and *Staurophora mertensi*. Distributions have been patchy for all species in the sampling grid for each year. Highest concentrations of all species combined, were found to occur in the Middle Shelf Domain, although distributions throughout the domain were uneven for all years (Figure 63). Of the six species sampled, *Chrysaora melanaster* had the highest density for all years, followed by *Aequorea sp.*, *Cyanea capillata*, *S. mertensi*, *A. labiata*, and *P. camtschatica* (Figure 64). Notable declines in jellyfish biomass for five of the species were observed in 2006 and 2007 compared to 2004 and 2005. Only *P. camtschatica* had a recorded increase in biomass in 2006. In 2007, *C. melanaster* biomass doubled compared to 2006 but was still far below the 2004 and 2005 year measurements.

As 2006 has been described as a cold year, the decline in jellyfish biomass may be partially attributed to a decline in zooplankton and other prey availability, as suggested by Hunt's Oscillating Control Hypothesis (Hunt et al. 2002). Physical ocean factors (temperature and salinity) alone do not seem to be causing shifts in biomass distributions but environmental forcing earlier in the growing season or during an earlier life history stage (polyp) may influence large medusae biomass and abundances.

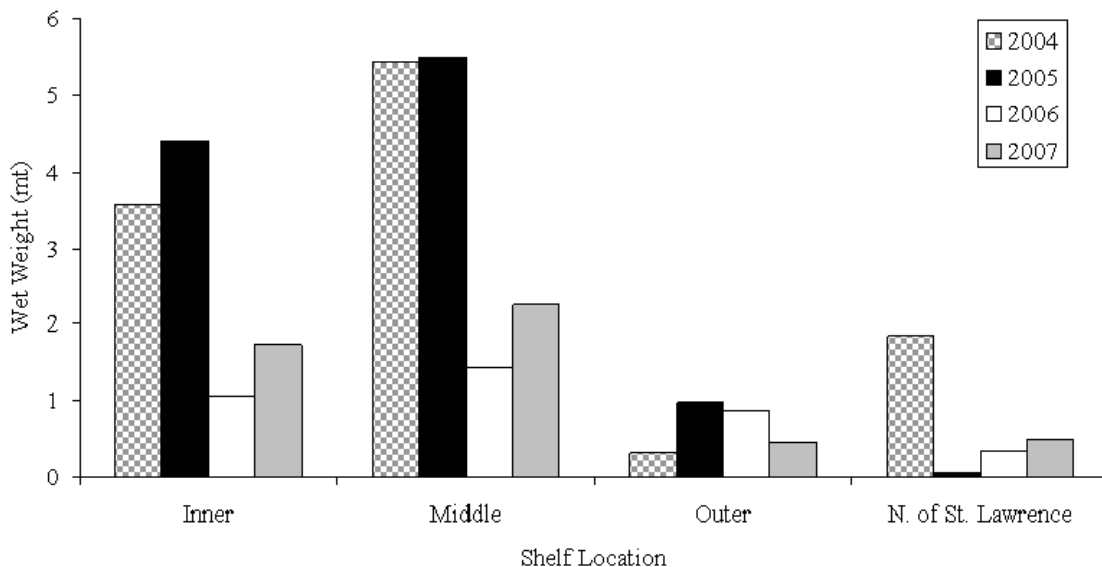


Figure 63. Catch by year for each shelf location in the Eastern Bering Sea. Wet weight is defined as the total weight of all large jellyfish species caught in a 30 minute trawl. Shelf locations (domains) are by depth, Inner 0-50m, Middle 50-100m, and Outer >100m. North of St. Lawrence includes all stations sampled above 64° N latitude.

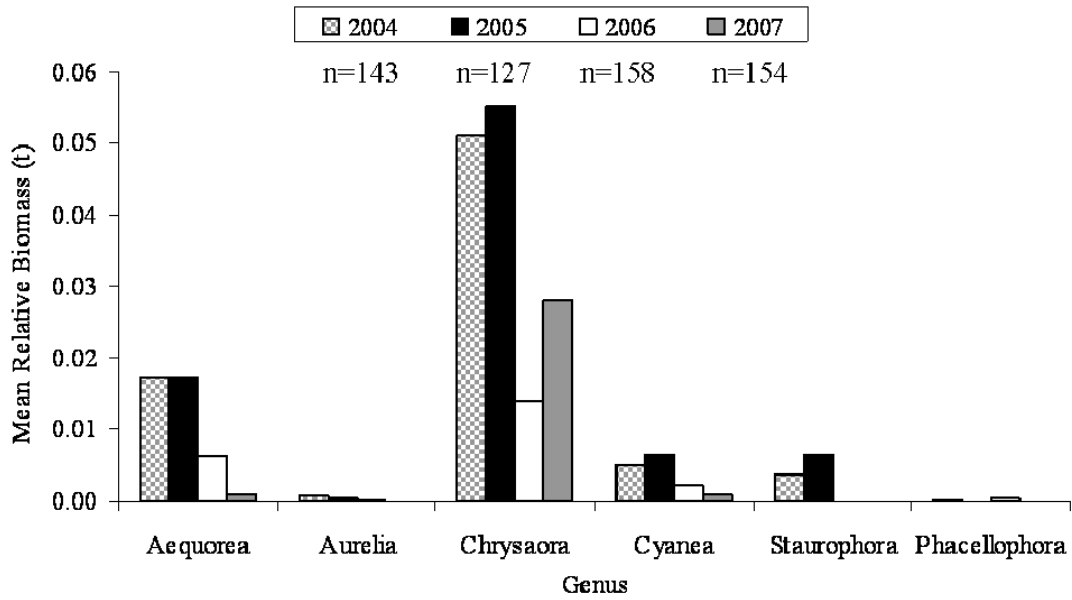


Figure 64. Mean relative biomass (mt) by genus for 2004-2007 in the Eastern Bering Sea. Relative biomass is defined as the total weight of a particular species in a 30 minute trawl. Sample size (n) is indicated below figure key.