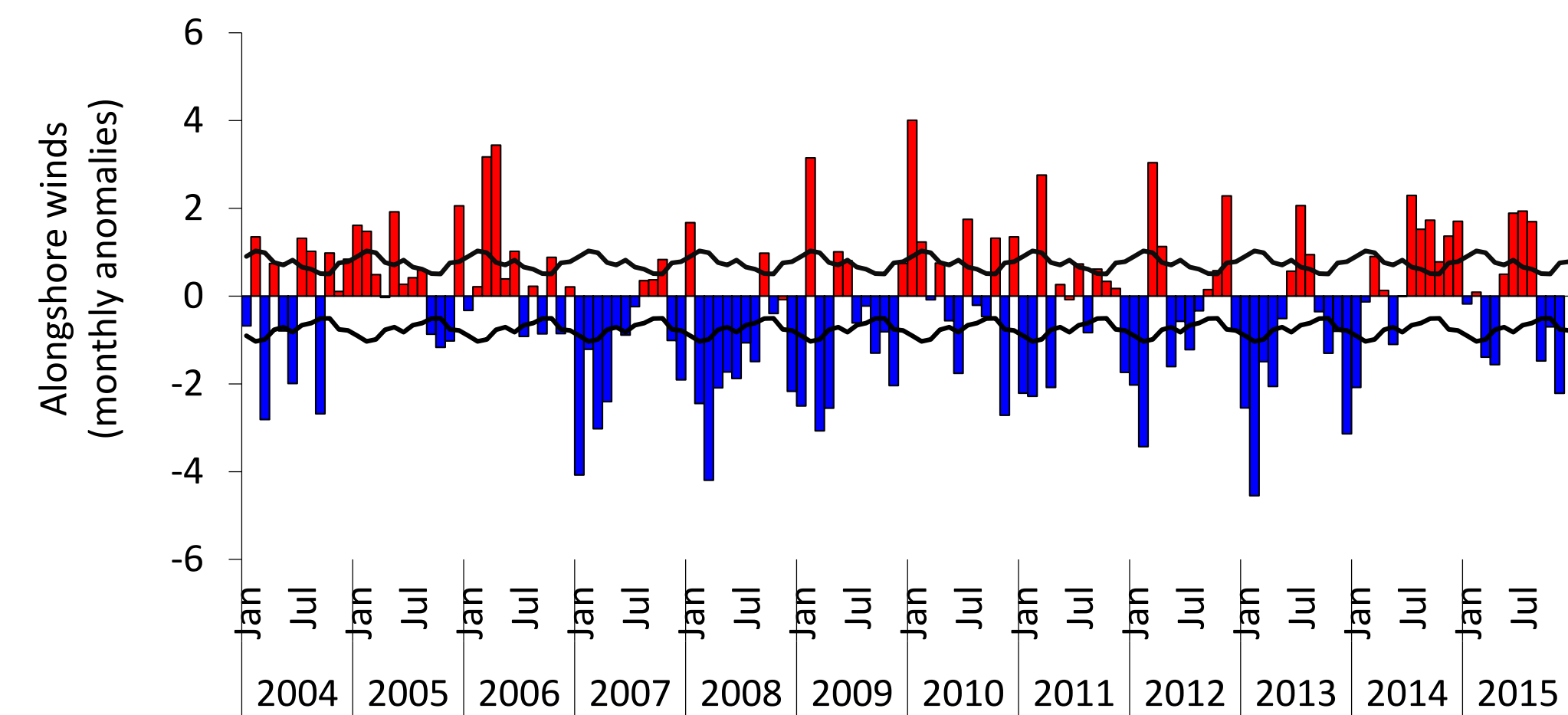
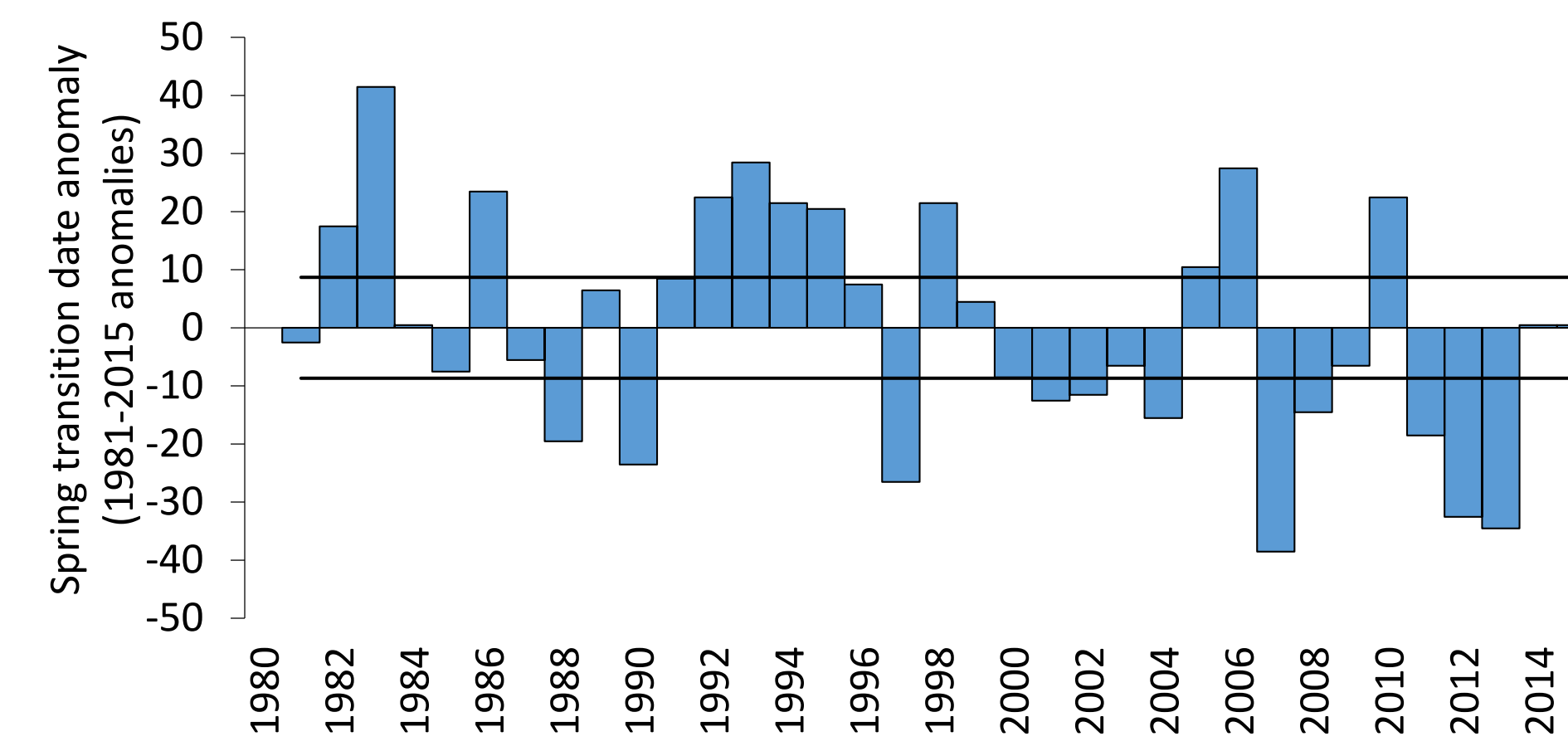


Local ocean variables (NDBC buoy 4013)



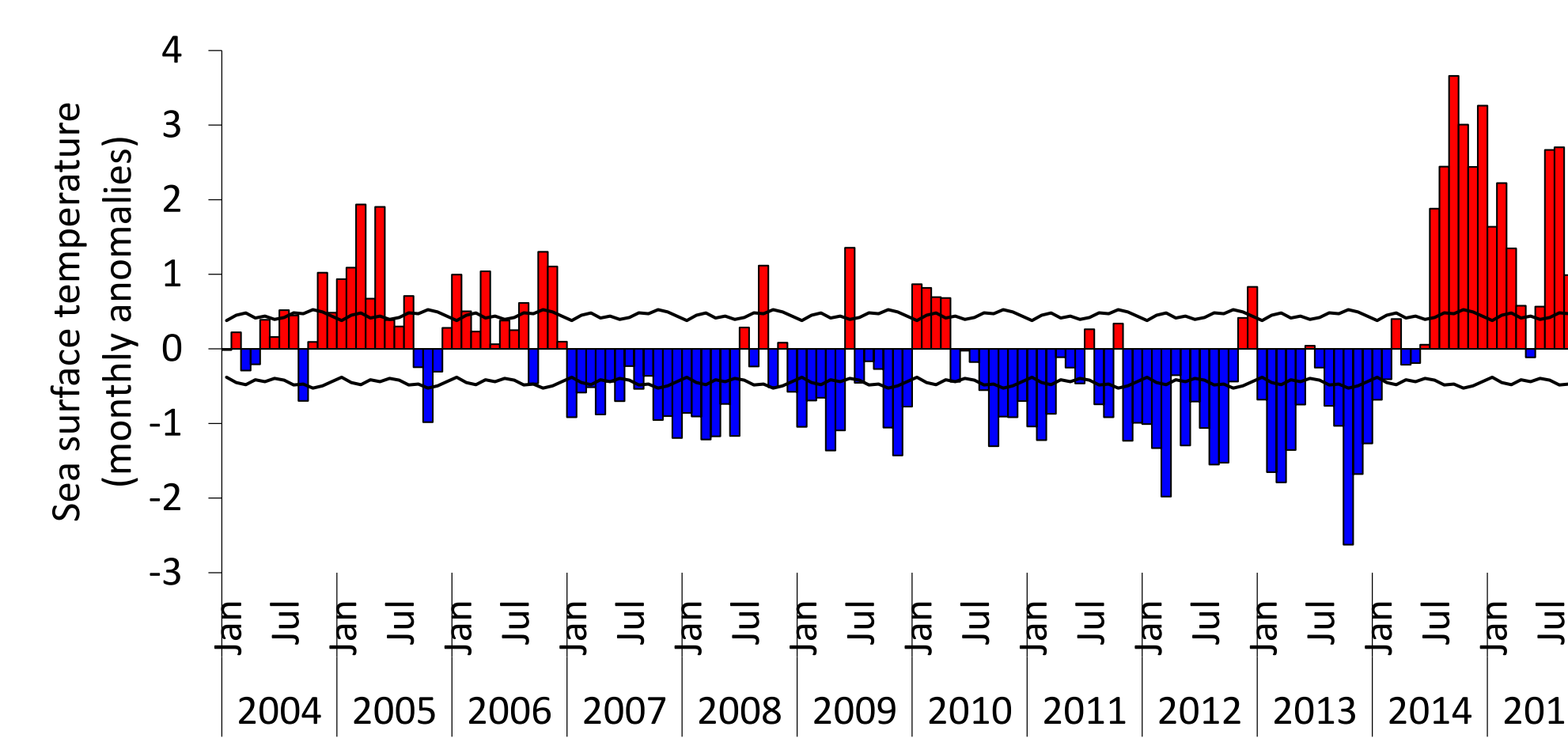
Alongshore winds (based on buoy data)

- Wind stress during spring months of 2014-15 was weak.
- Previous warm-water events (e.g. 2005-06, 2010) showed weaker springtime winds.



Spring transition (based on buoy data)

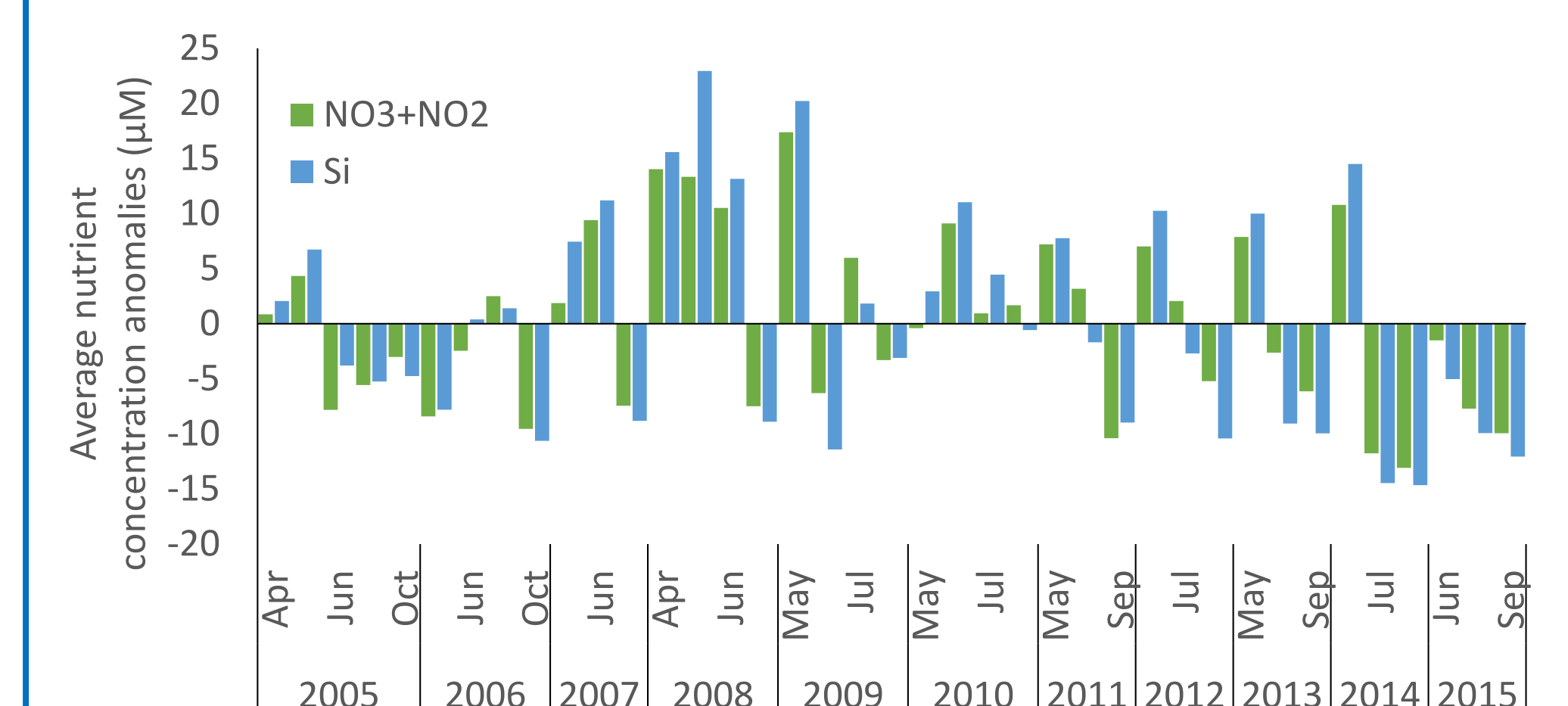
- Spring transition date was at the long-term average in 2014-15.
- Late transition dates characterized past warm water event years (e.g. 1983, 1998, 2006).



Sea surface temperature (from buoy data)

- Unusually high monthly SST values were observed from mid-2014 through the end of 2015.
- Previous warm water events (e.g. 2005-06, 2010) showed warm SSTs in spring/summer, but not consistently or as high as the 2014-15 event.

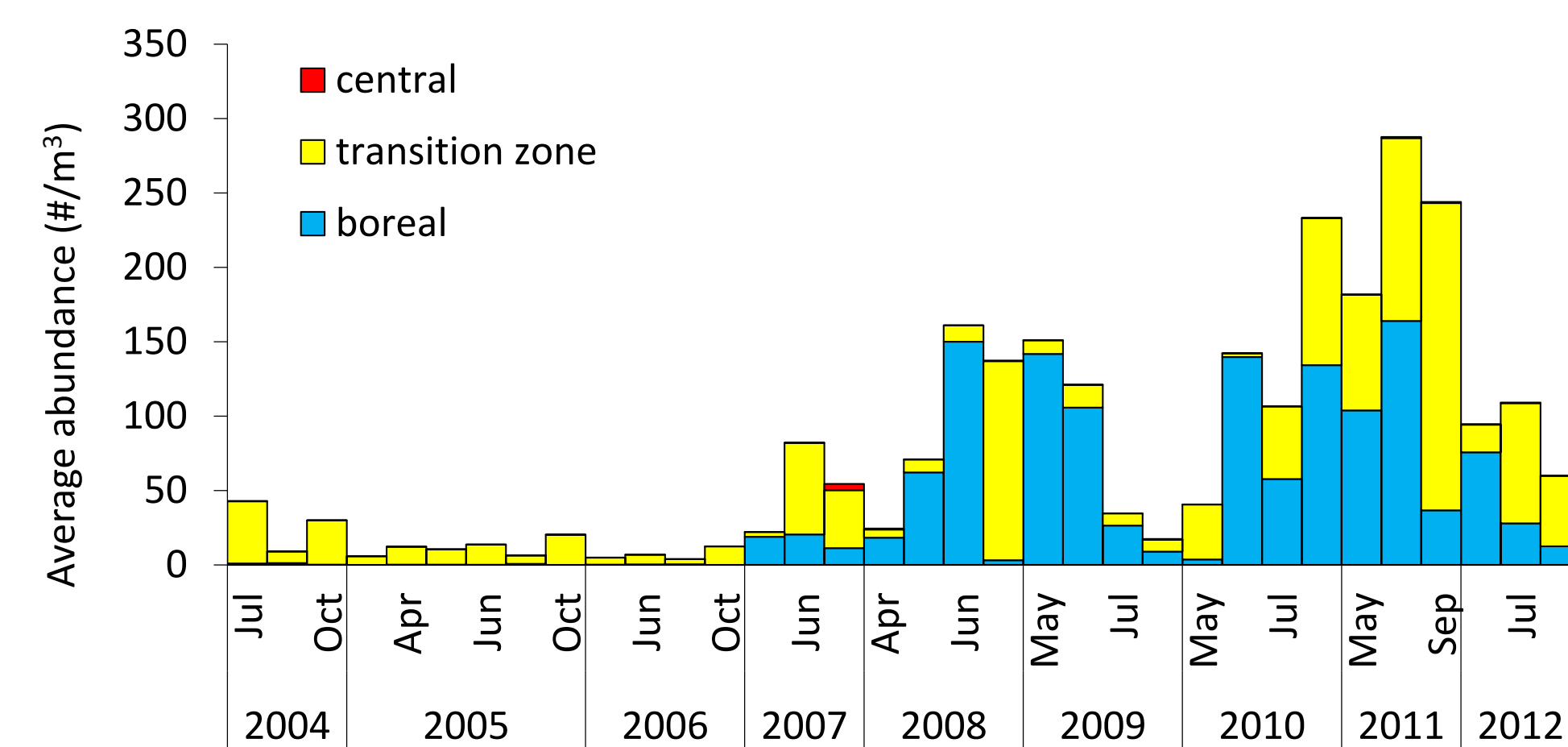
Nutrients



NO₃+NO₂ and Si

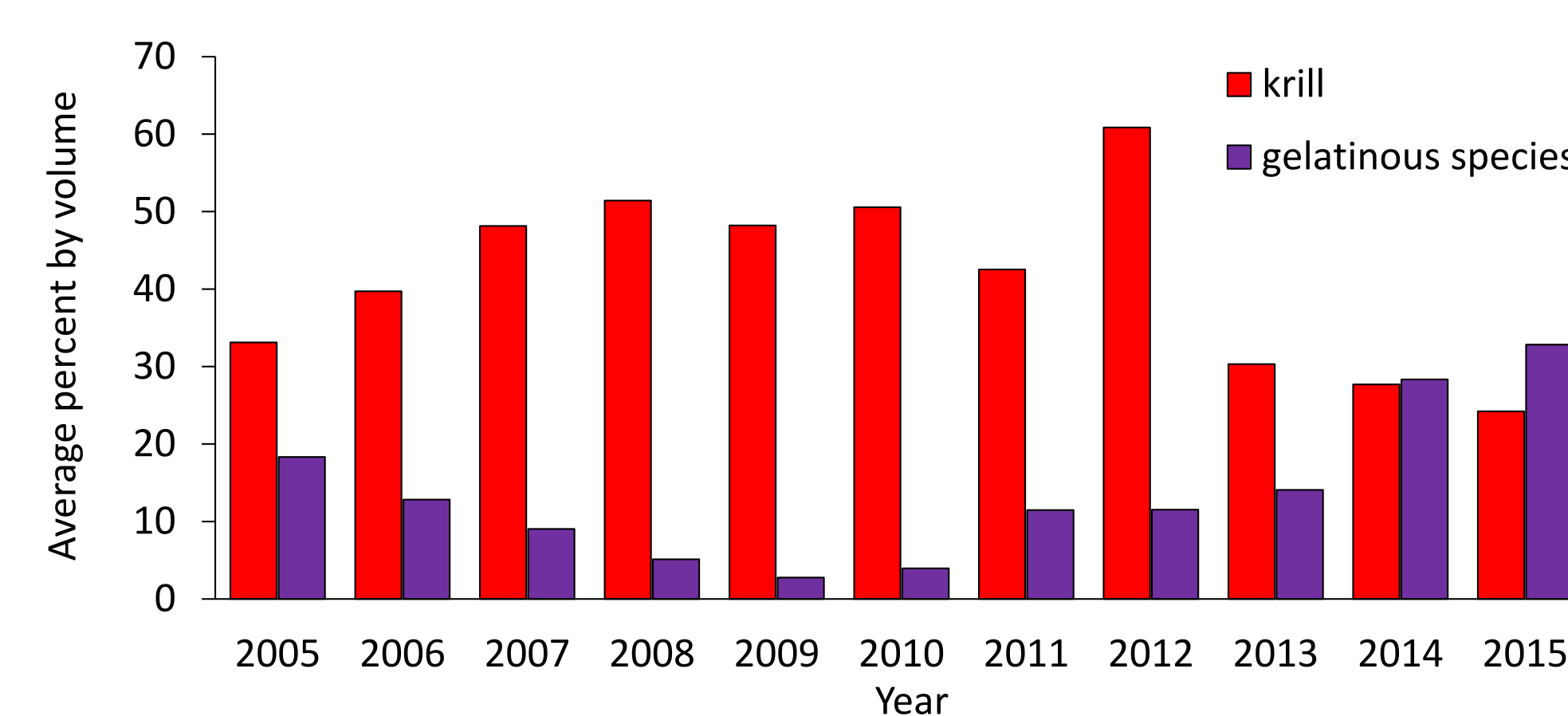
- A sharp decline in nutrients began in mid-2014, and concentrations continued to be low through 2015.
- Nutrient declines and lower concentrations were observed during other warm water events (e.g. 2005-06).

Lower trophic levels



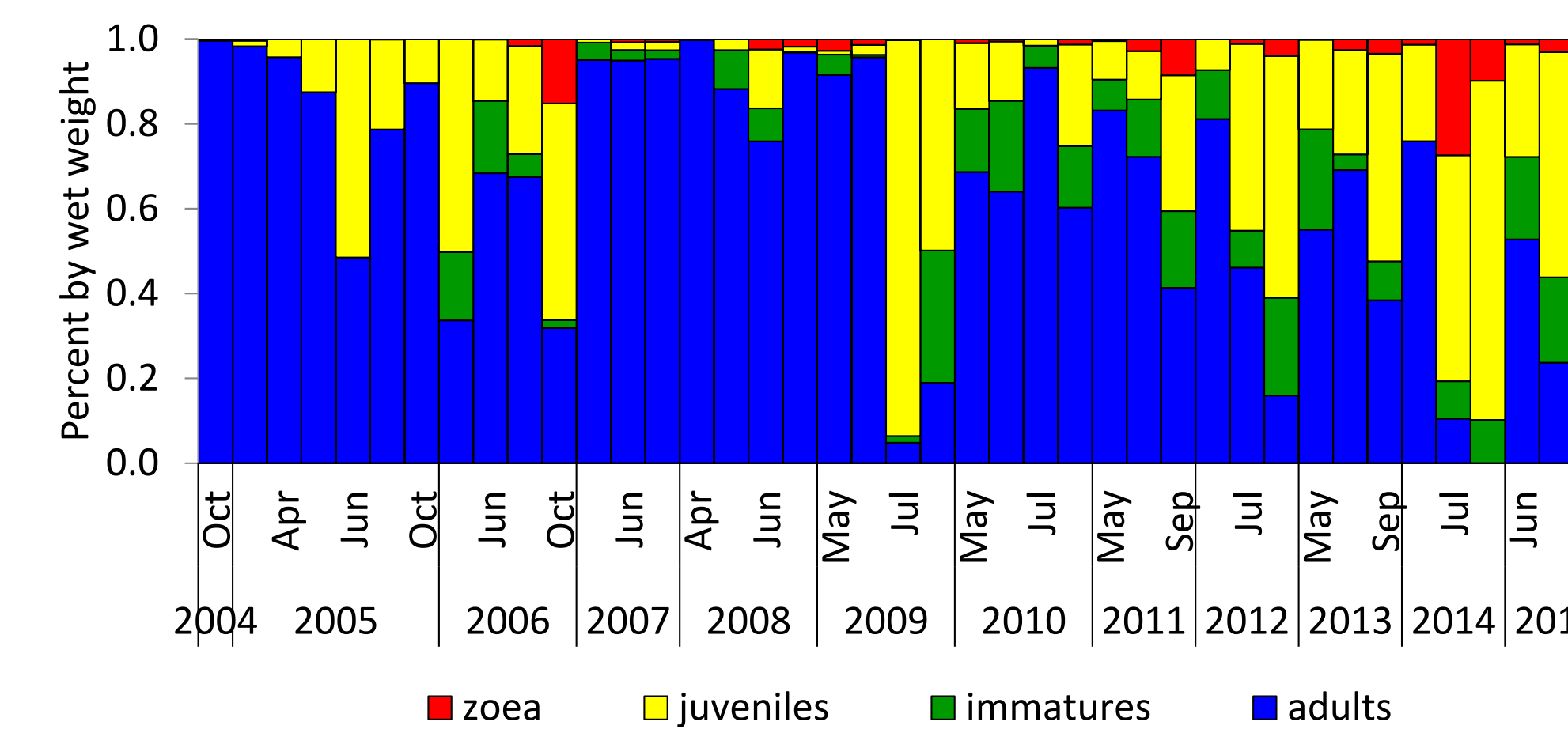
Copepod community composition

- Samples have not yet been processed for 2013-15.
- Warm water years (e.g. 2005-06) are characterized by low boreal copepod abundance, and this changed dramatically in the cold water year of 2007.



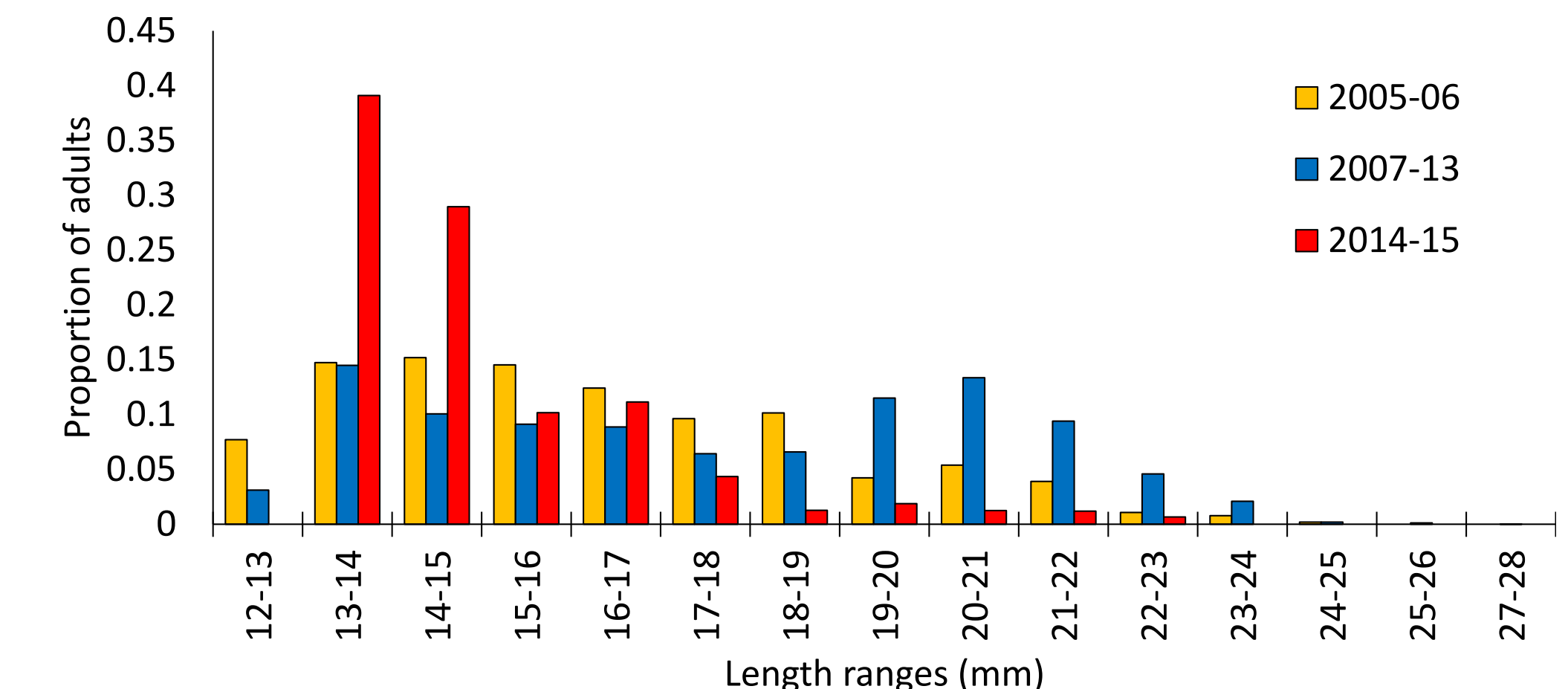
Gelatinous zooplankton species

- The volume of gelatinous zooplankton has been increasing in Tucker samples since 2010, with 2015 marking the highest value in our time series.
- Conversely, the volume of krill in Tucker samples has declined to its lowest point in 2015.



Euphausiid age classes

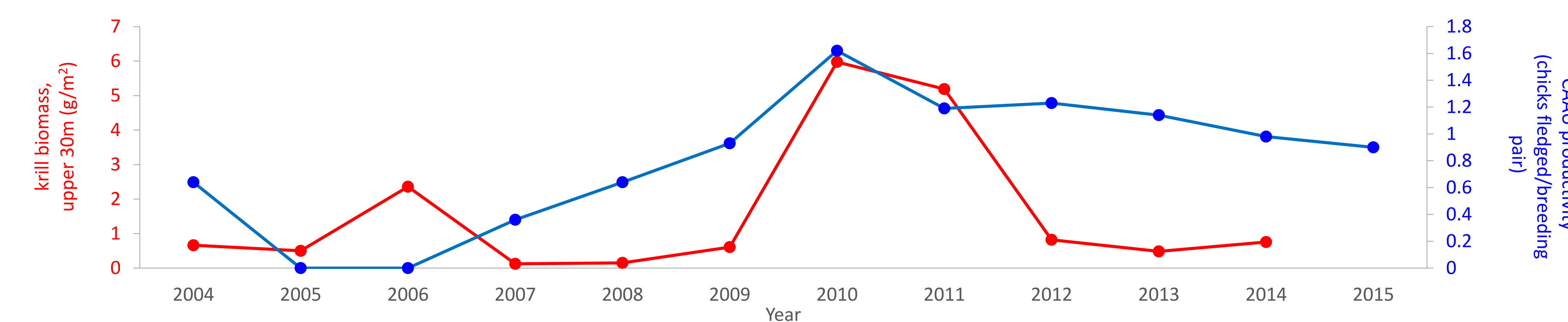
- Younger, smaller age classes of euphausiids (krill) comprised most of the krill found in Tucker samples in 2014-15.
- The larger, more nutritious adults dominate samples in cold years (e.g. 2007-08).



Adult euphausiid size classes

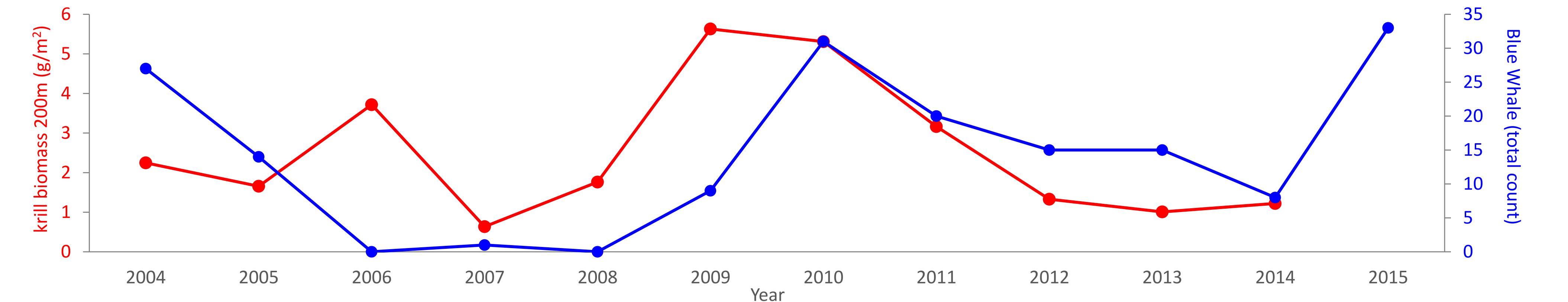
- Adult krill caught in 2014-15 were smaller than other years, with ~70% being <15 mm in length.
- Larger krill are observed in colder years (e.g. 2007-13), with evidence of two cohorts present.

Upper trophic levels



Cassin's auklet productivity and euphausiid biomass

- While the krill acoustic data have not yet been processed for 2015, krill abundance in the upper 30m (where Cassin's auklets forage) was low in 2014.
- Cassin's auklet's productivity and krill biomass showed strong correlations in 2010-11.
- Will 2015 look similar to 2009 (i.e. low krill biomass at the surface, high krill biomass to 200m)?



Blue whale and euphausiid biomass

- While the krill acoustic data have not yet been processed for 2015, krill abundance down to 200m below the ocean surface was low in 2014, as were blue whale counts.
- Blue whales and krill biomass show similar trends with the exception of 2006 (krill results may be confounded by salps). Will 2015 look similar to 2009 (i.e. low krill biomass at the surface, high krill biomass to 200m)?