Low Dissolved Oxygen off Washington and Oregon Coast Impacted by Upwelling in 2017
Andrea Selkow & Dr. Tom Connolly
Austin College, aselkow17@austincollege.edu & Moss Landing Marine Laboratories, San Jose State University

Focus Questions
- Are there similarities in the dissolved oxygen concentrations off the coast of Oregon and Washington during a known low oxygen event?
- Do the strong Oregon winds cause dissolved oxygen concentrations to be lower at the Oregon mooring compared to the Washington moorings?
- Are the oxygen data accurate or subject to biofouling?

Methods
- Datasets used: OR and WA Inshore Shelf Mooring timeseries, and WA Shelf Mooring timeseries from Endurance Array
- Focus was on seafloor because that is where the lowest oxygen concentrations were expected to be observed
- Cruise data was used for quality control
- Ocean Observatories Initiative: oceanobservatories.org

Oregon Oxygen Depletes More Quickly
- Dissolved oxygen depletes more quickly off the coast of Oregon than Washington during a low oxygen event.
- Dissolved oxygen is more quickly depleted at the shelf mooring than at the inshore shelf mooring, perhaps because deep water reaches shelf mooring first.
- Upwelling is causing the low oxygen events, therefore weaker southward winds hitting Washington might be why Washington decreases in oxygen levels at a slower rate.

Cruise Data for Quality Control
- Cruise data was analyzed in order to make sure no biofouling had occurred on the mooring instruments.

Salinity and Temperature Comparison Confirms Upwelling
- Temperature decreases and salinity increases as oxygen levels deplete, characteristic of cold deep water being pulled onto the shelf by upwelling.

Shelf Oxygen Depletes More Quickly
- Oxygen levels decrease more quickly off the shelf than the inshore shelf

Conclusions
- Dissolved oxygen is more quickly depleted off the coast of Oregon than Washington during a low oxygen event.
- Dissolved oxygen is more quickly depleted at the shelf mooring than at the inshore shelf mooring, perhaps because deep water reaches shelf mooring first.
- Upwelling is causing the low oxygen events, therefore weaker southward winds hitting Washington might be why Washington decreases in oxygen levels at a slower rate.

Future Directions
- One next step would be to compare dissolved oxygen data with wind velocities in order to confirm that a stronger wind correlates to less dissolved oxygen at the seafloor

References