

**CCGS SIR WILFRID LAURIER**  
**EVERY JULY 2008-2015**  
**VICTORIA, BC – BARROW ALASKA**



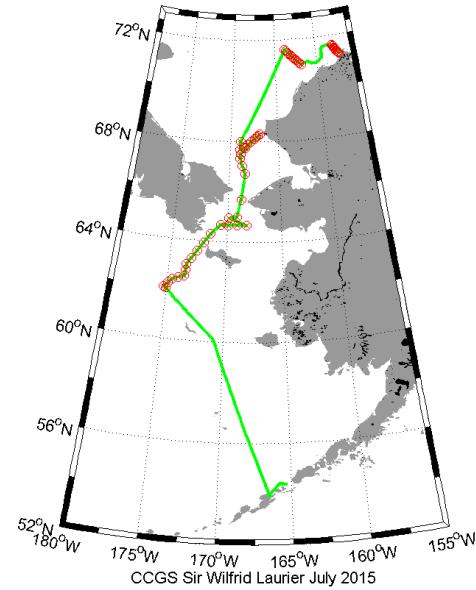
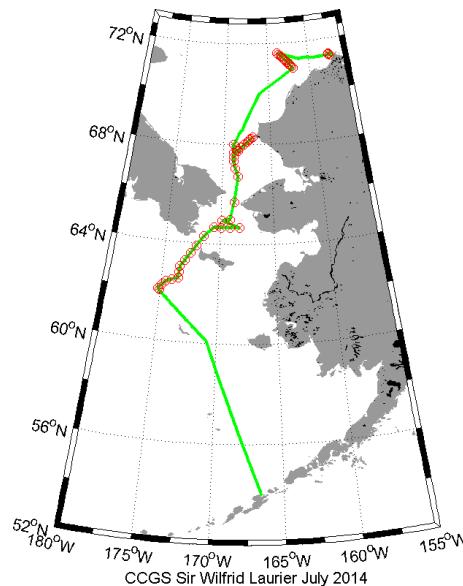
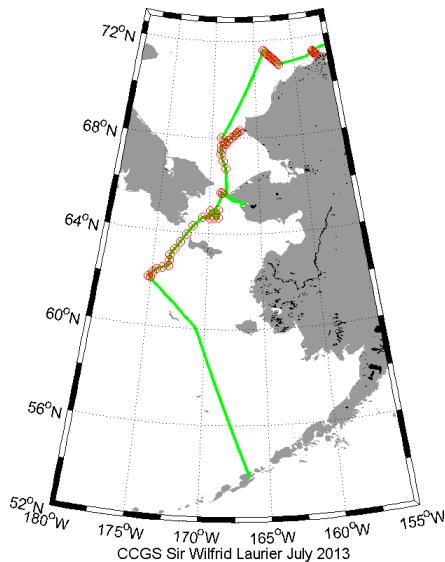
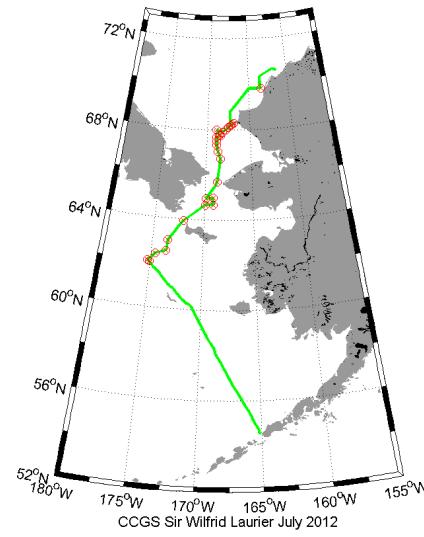
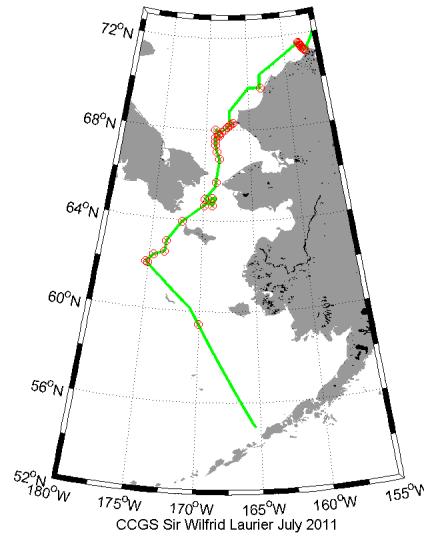
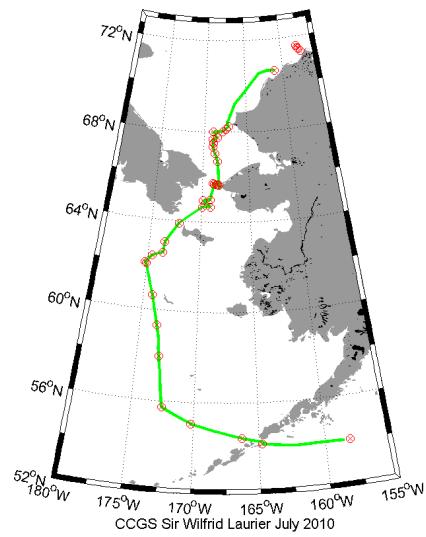
## SWL DBO Science: Dutch Harbor to Barrow

July 12 to July 23, 2015

### Science:

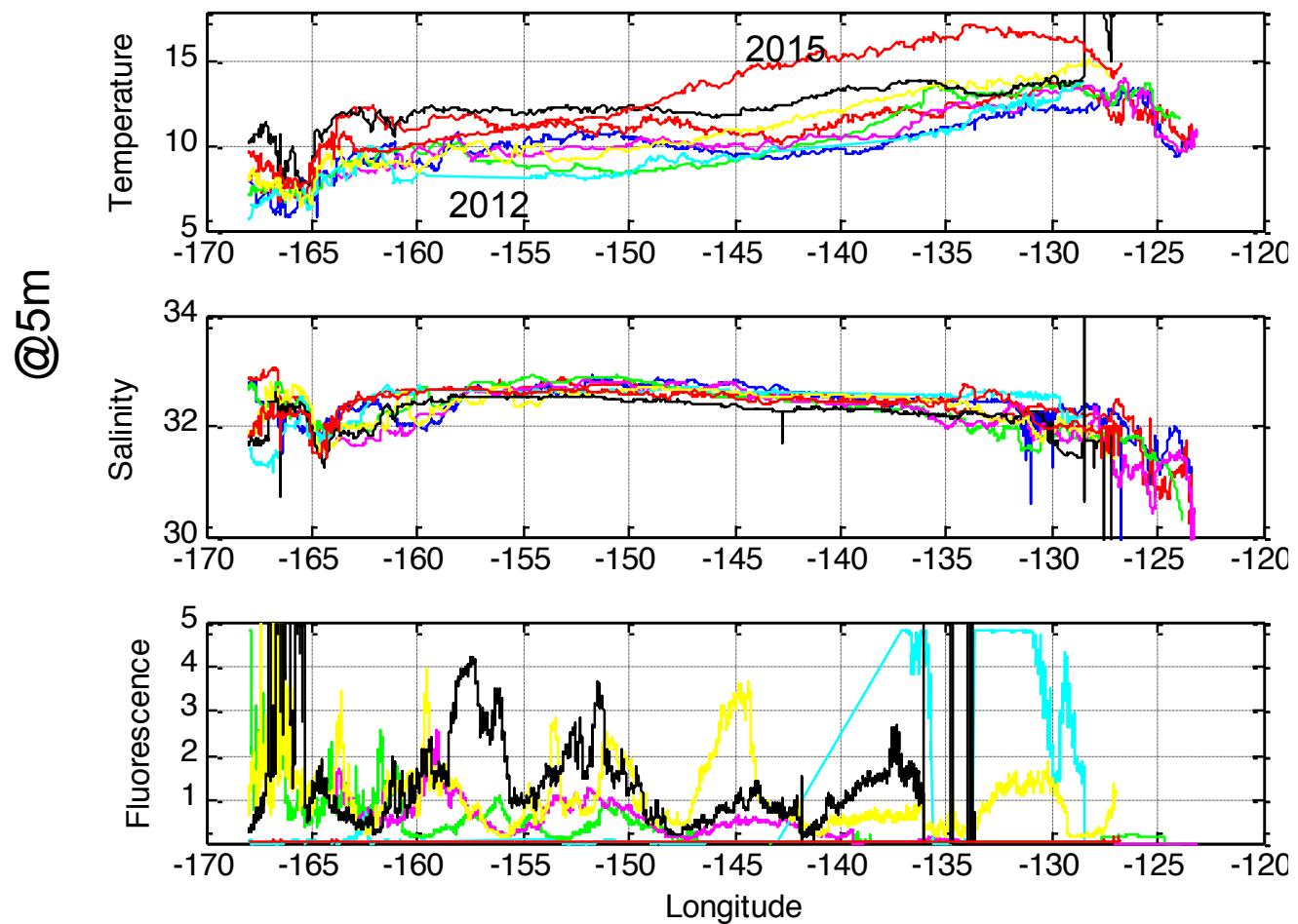
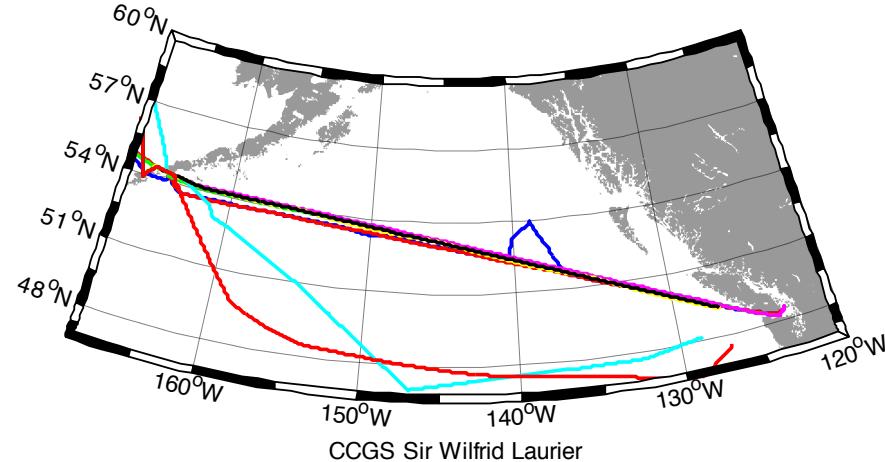
- Continuous sea surface water monitoring (T,S,F,O<sub>2</sub>,weather)
- Bird and mammal observations (Mammals from Victoria)
- 54 CTD science stations (All planned stations completed this year)
- 41 Rosette casts (Nutrients, Ba, O18, DIC/Alk, Chlorophyll)
- 41, 150 kHz ADCP over the side deployments (Backscatter and currents)
- 41 Bongo plankton net hauls to 100 m or 10 m above seafloor (Stantek)
- 40 Benthic sampling stations (U. of Maryland)
- 12 C-OPS stations (Clark University)
- 4 Phytoplankton incubation experiments (UVIC)
- 20 Stations where water was collected for Methane and C13 analysis.

# Ship tracks and sampling stations, Sir Wilfrid Laurier, July 4-24 2010-2015



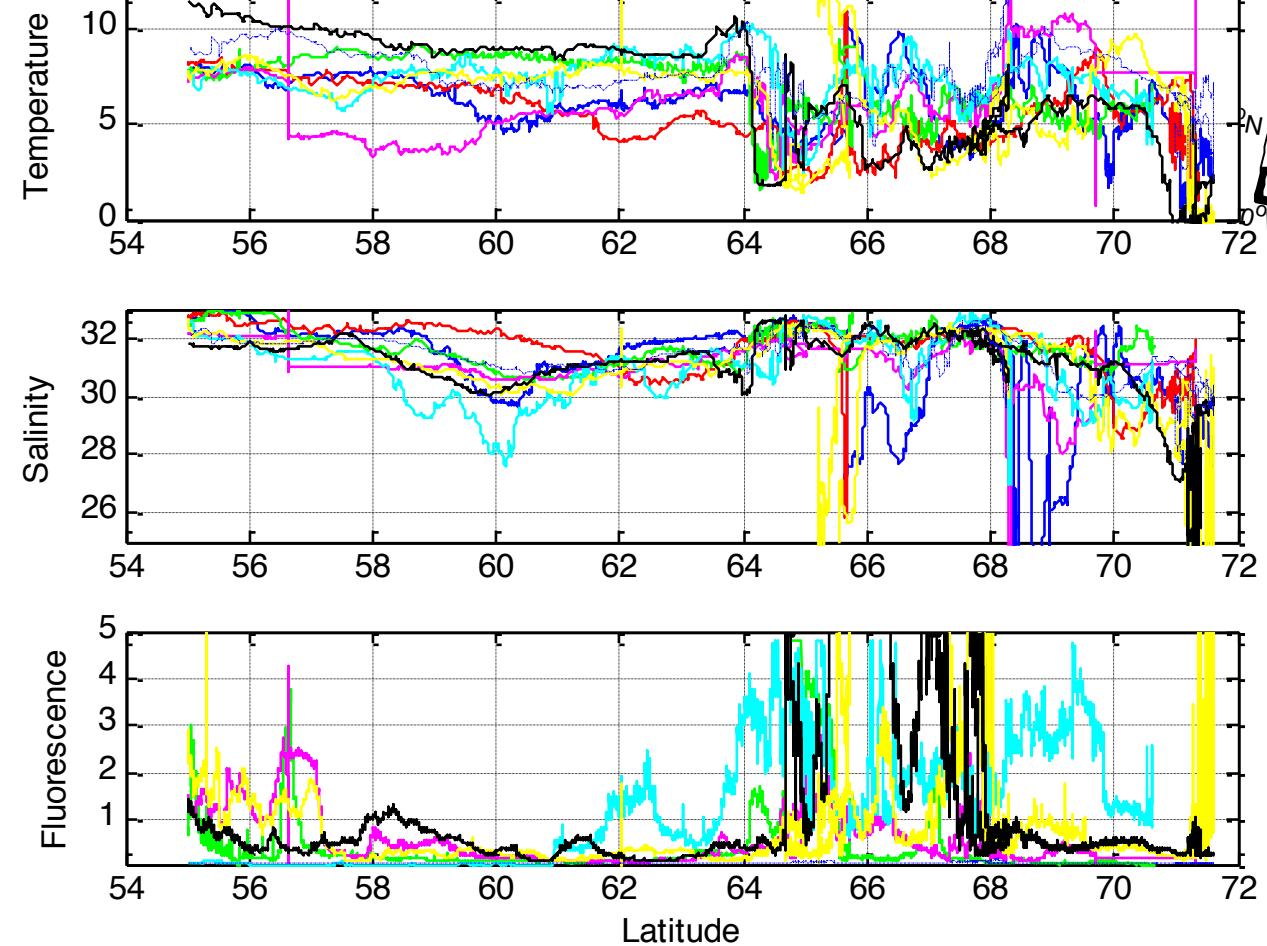
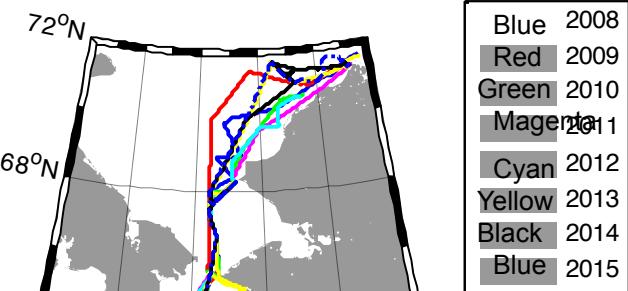
# Sir Wilfrid Laurier NE Pacific transects from Victoria BC to Dutch Harbor

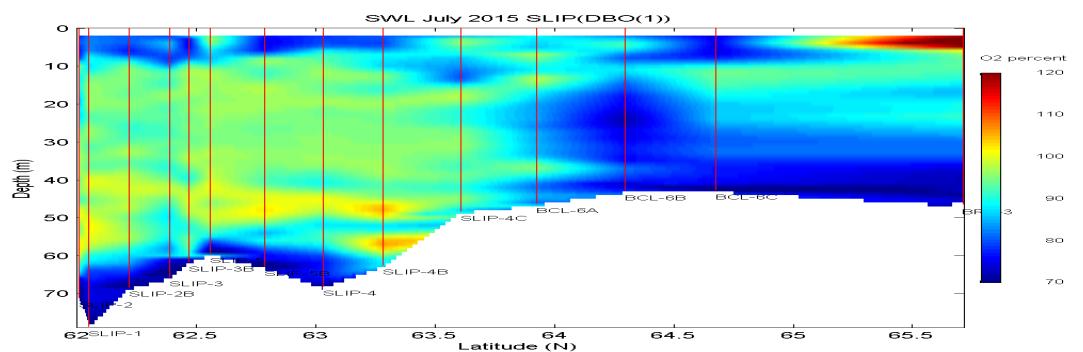
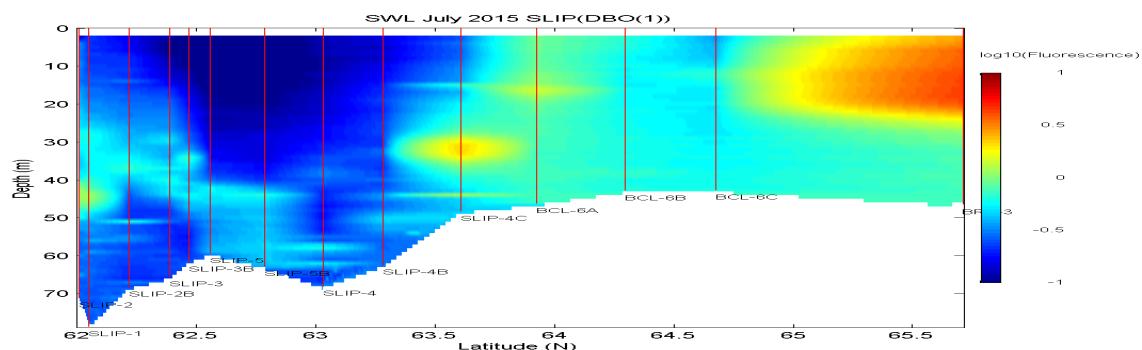
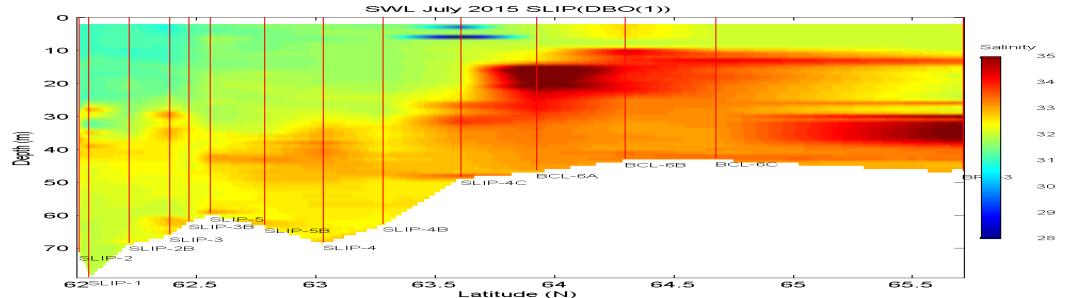
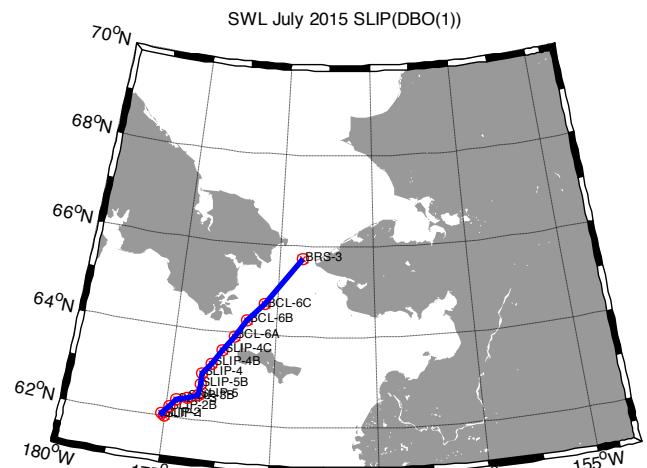
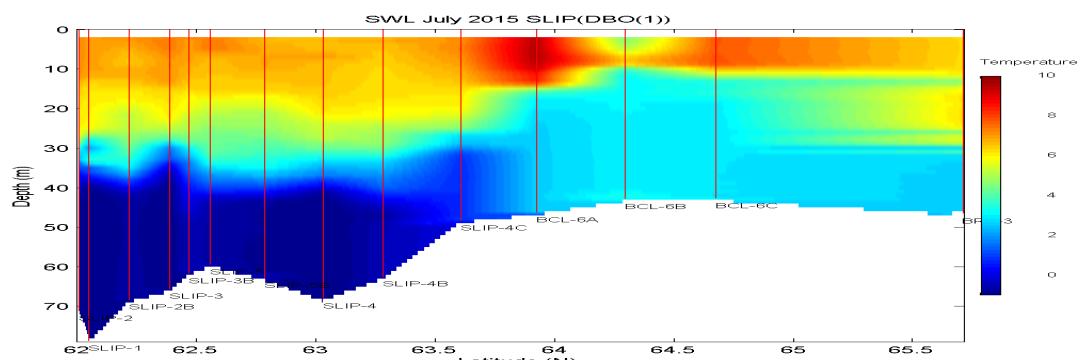
July 2008-2015

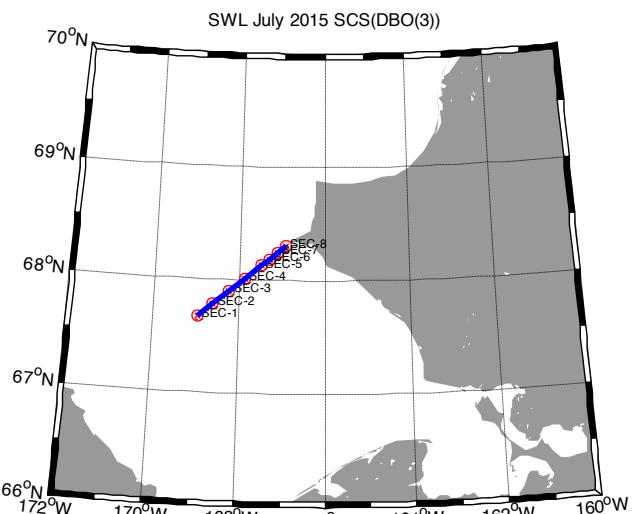
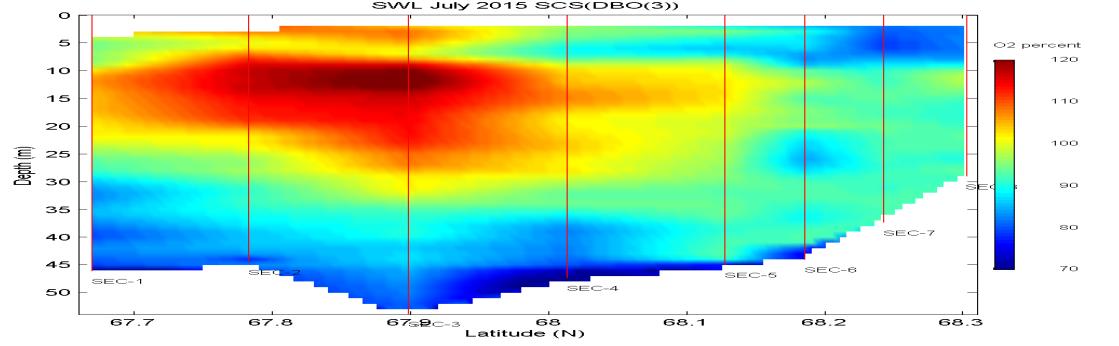
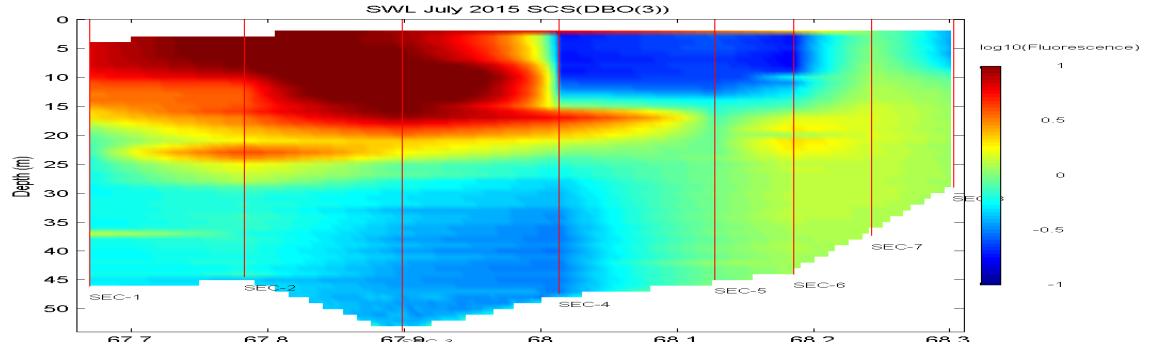
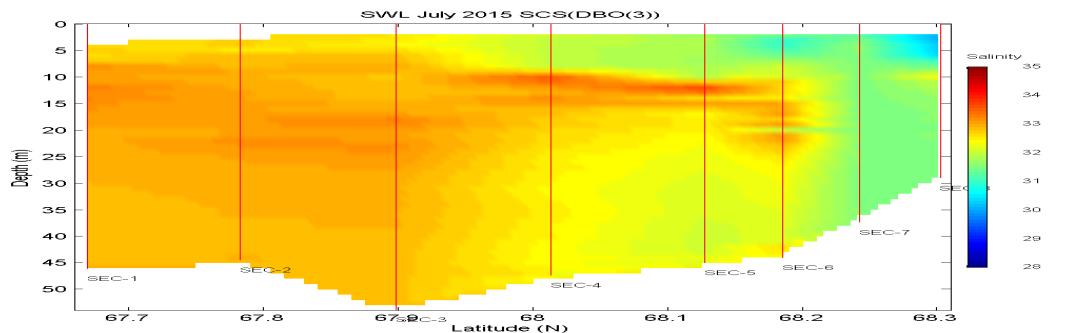
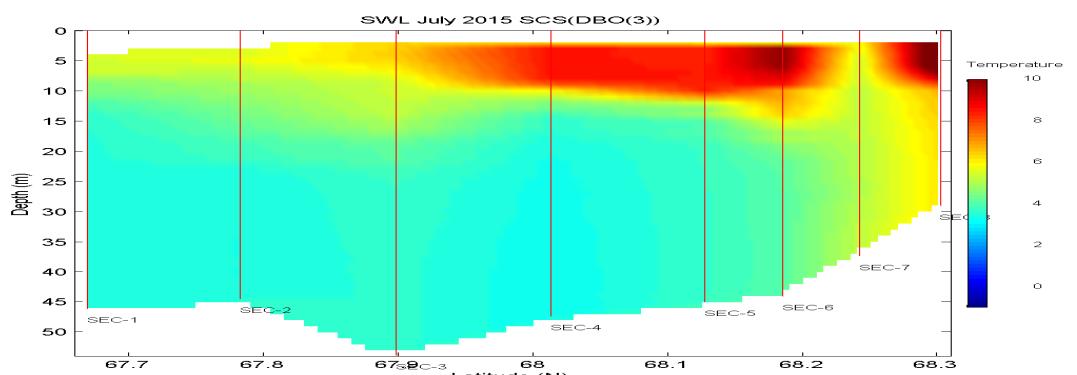


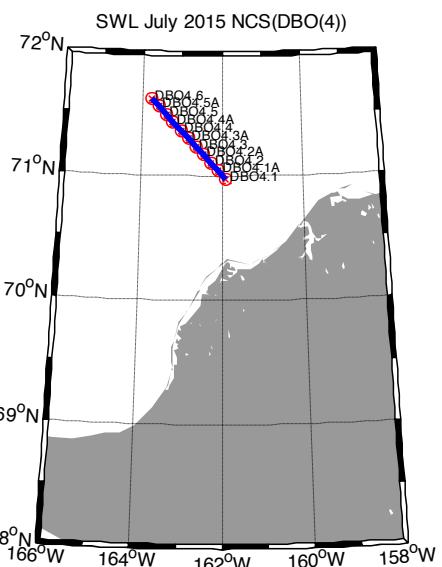
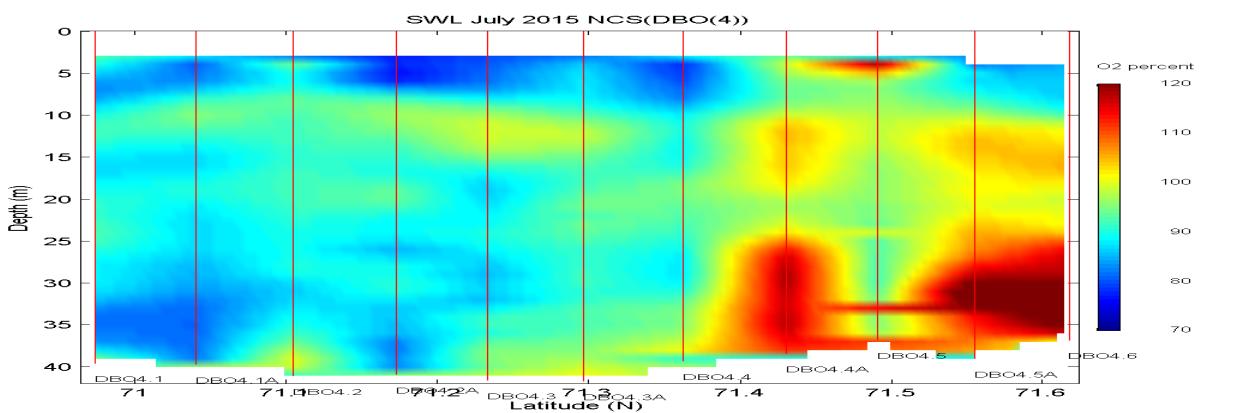
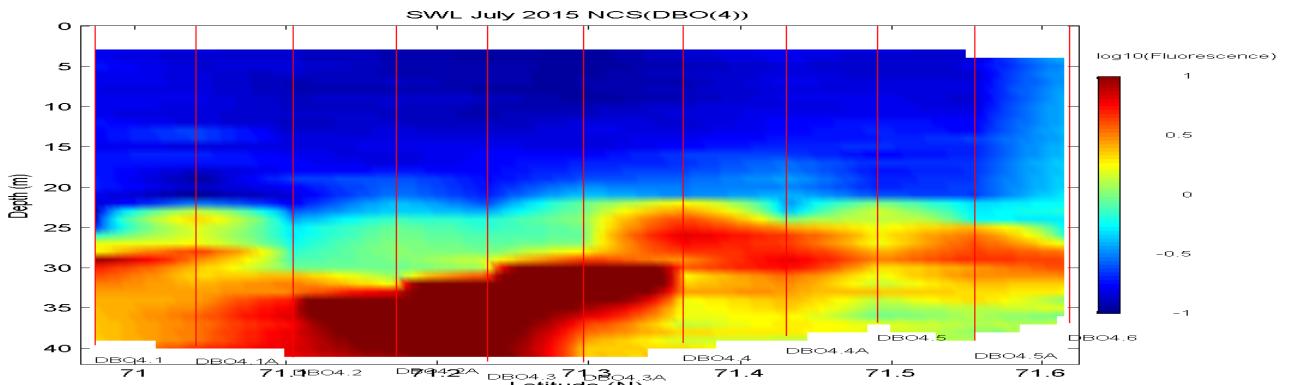
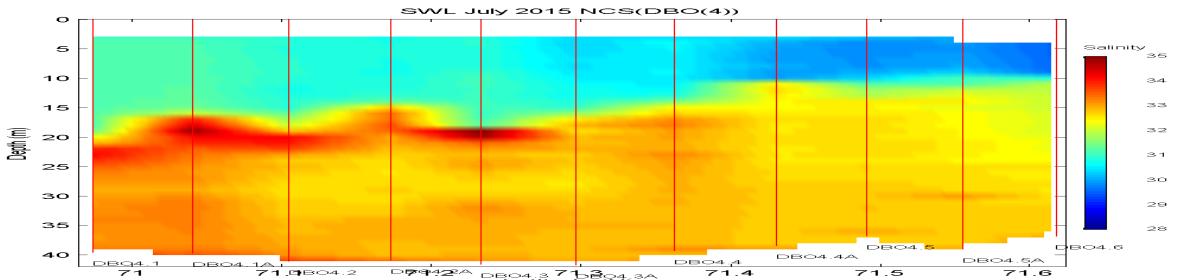
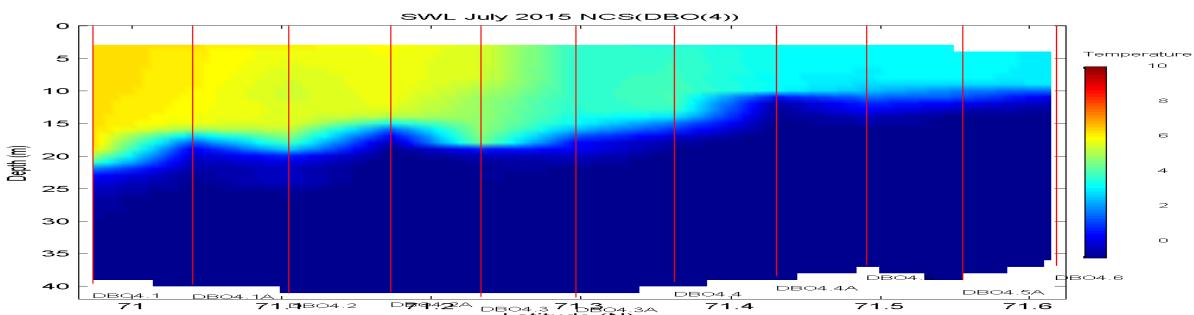
# Sir Wilfrid Laurier DBO transects from Dutch Harbor to Barrow

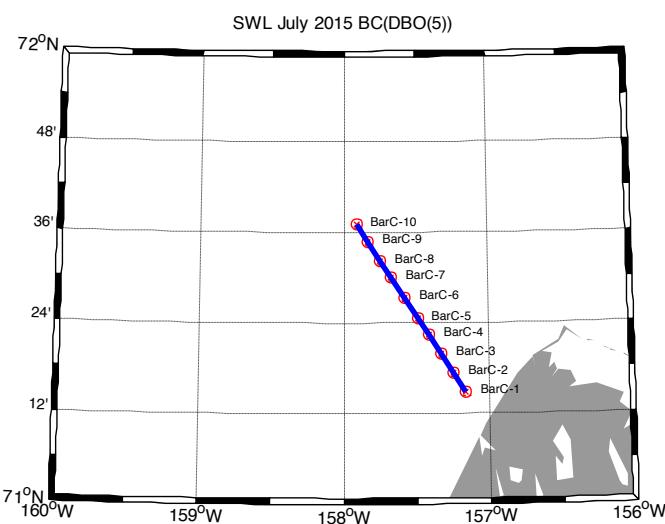
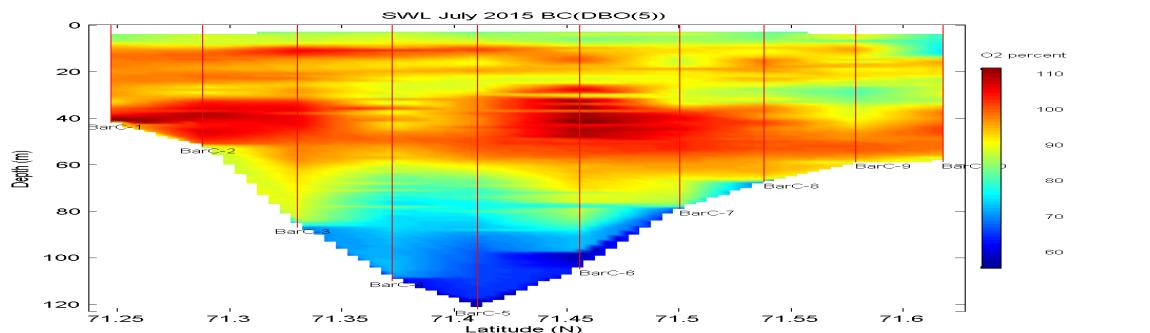
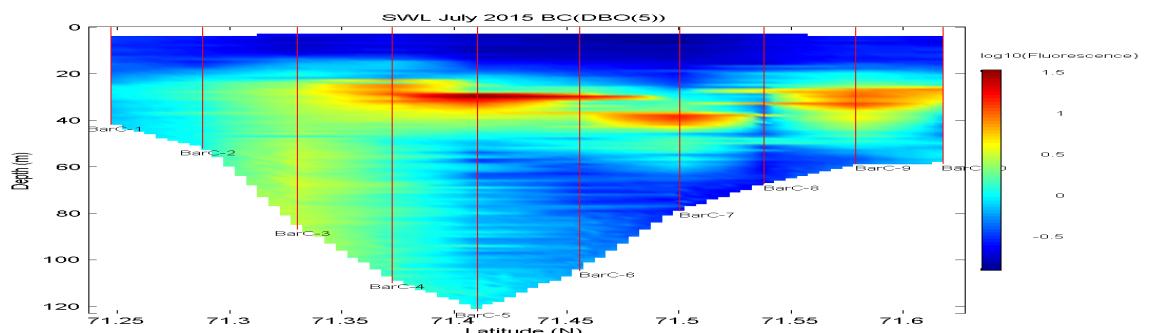
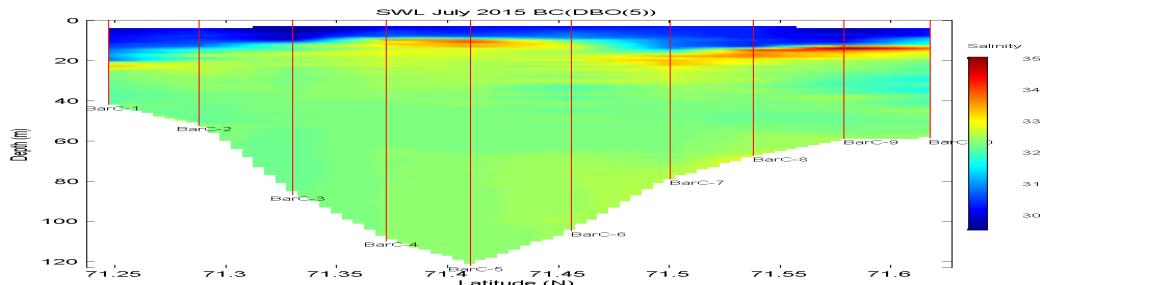
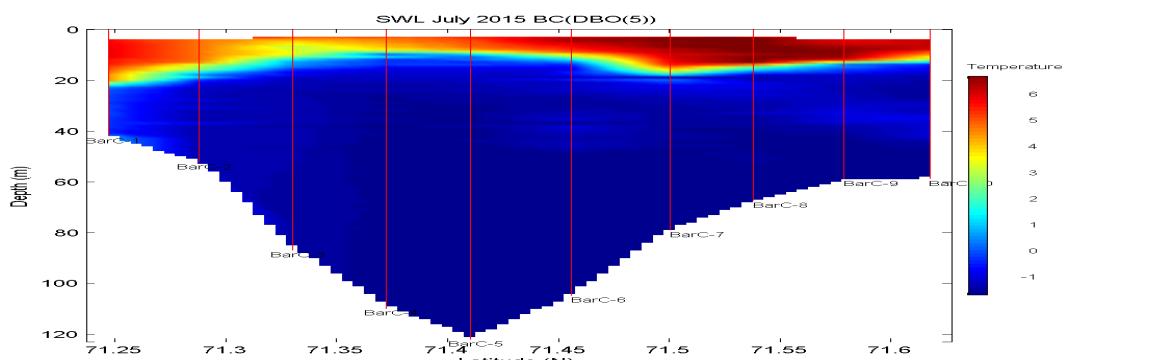
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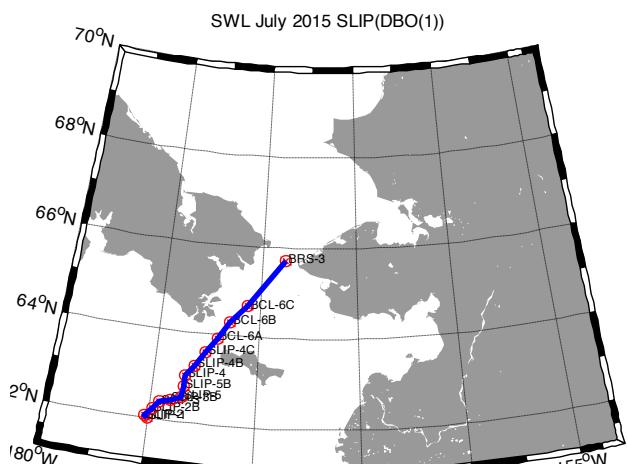
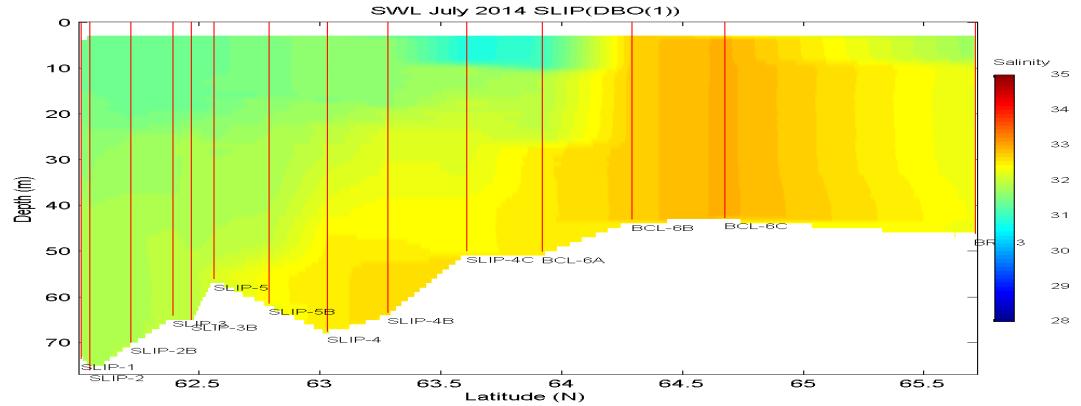
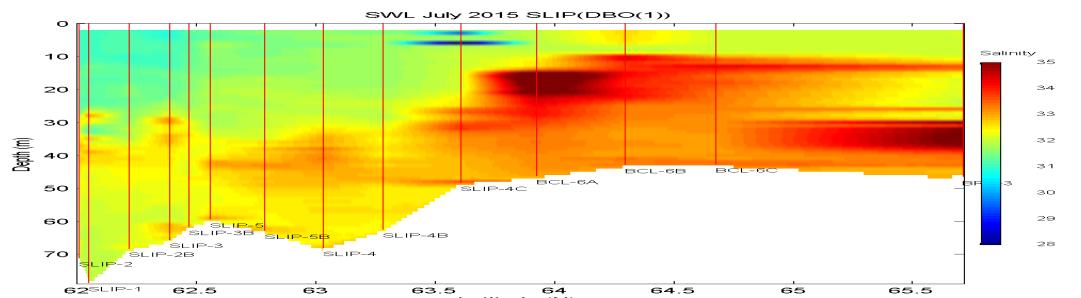
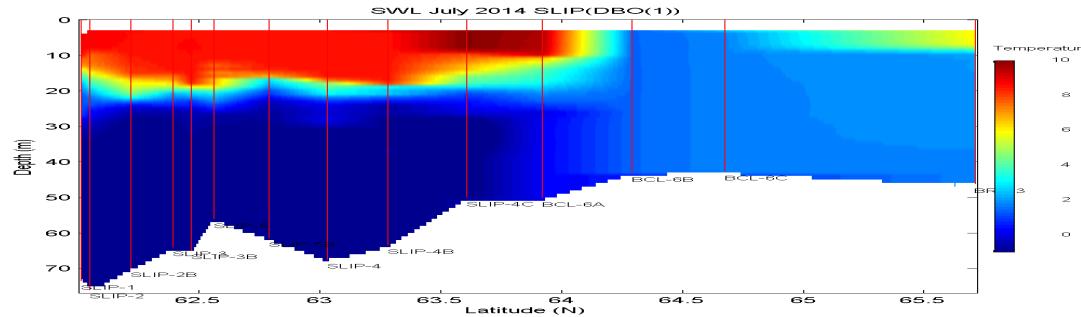
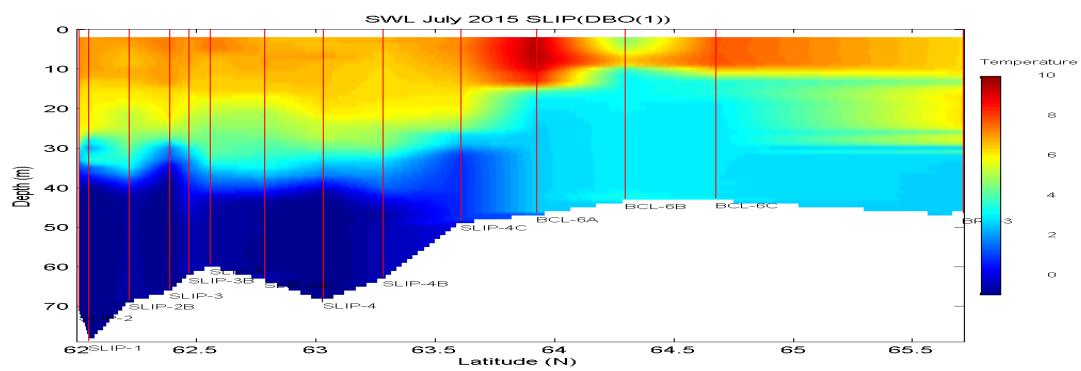


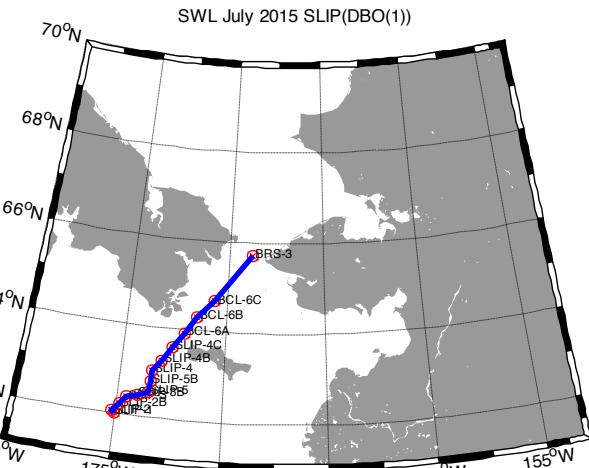
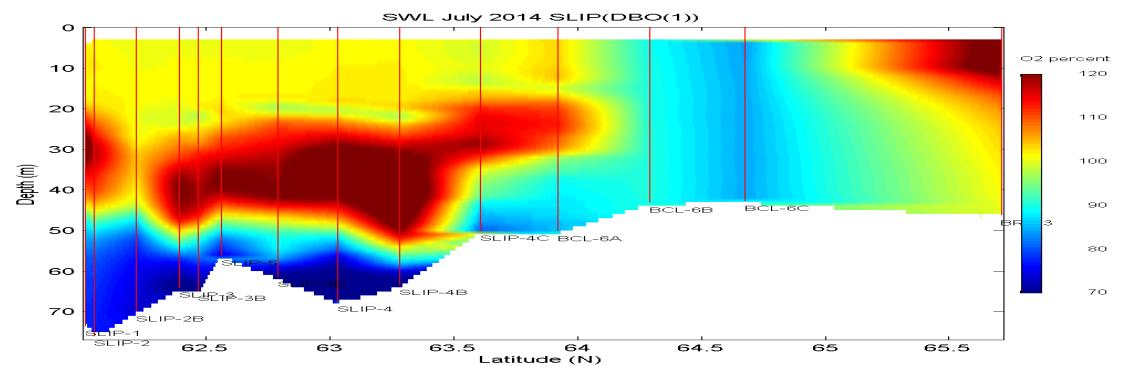
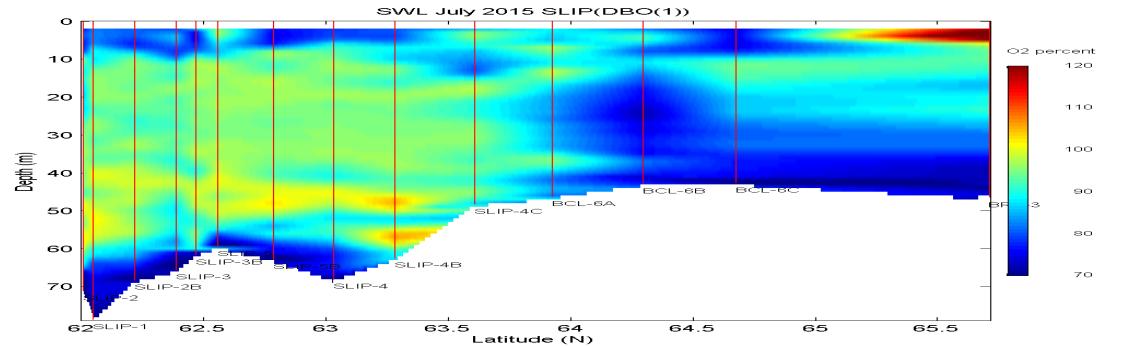
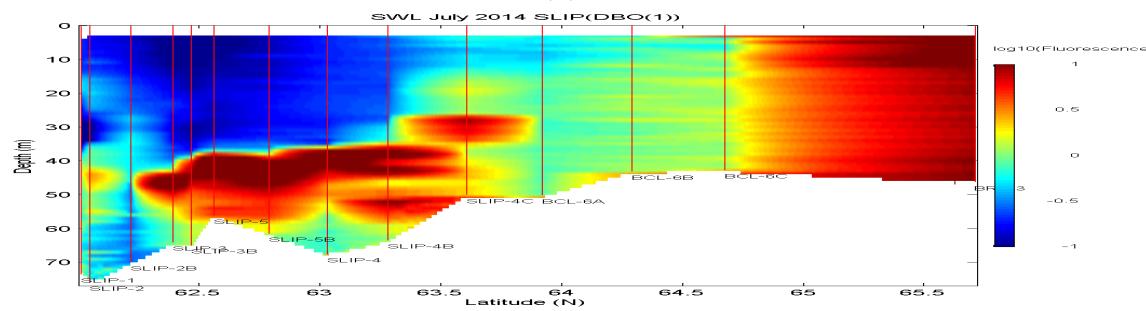
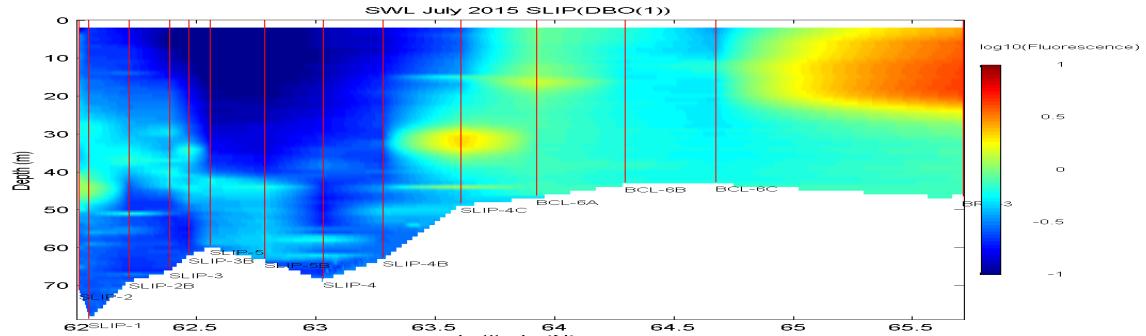








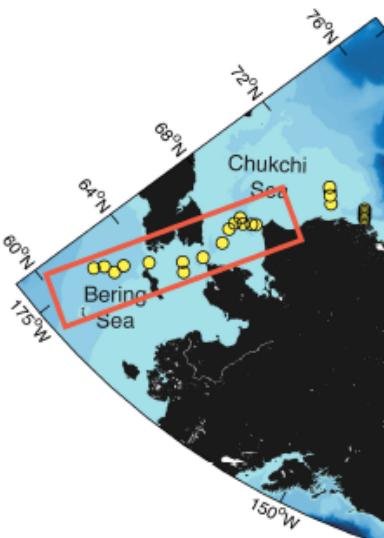




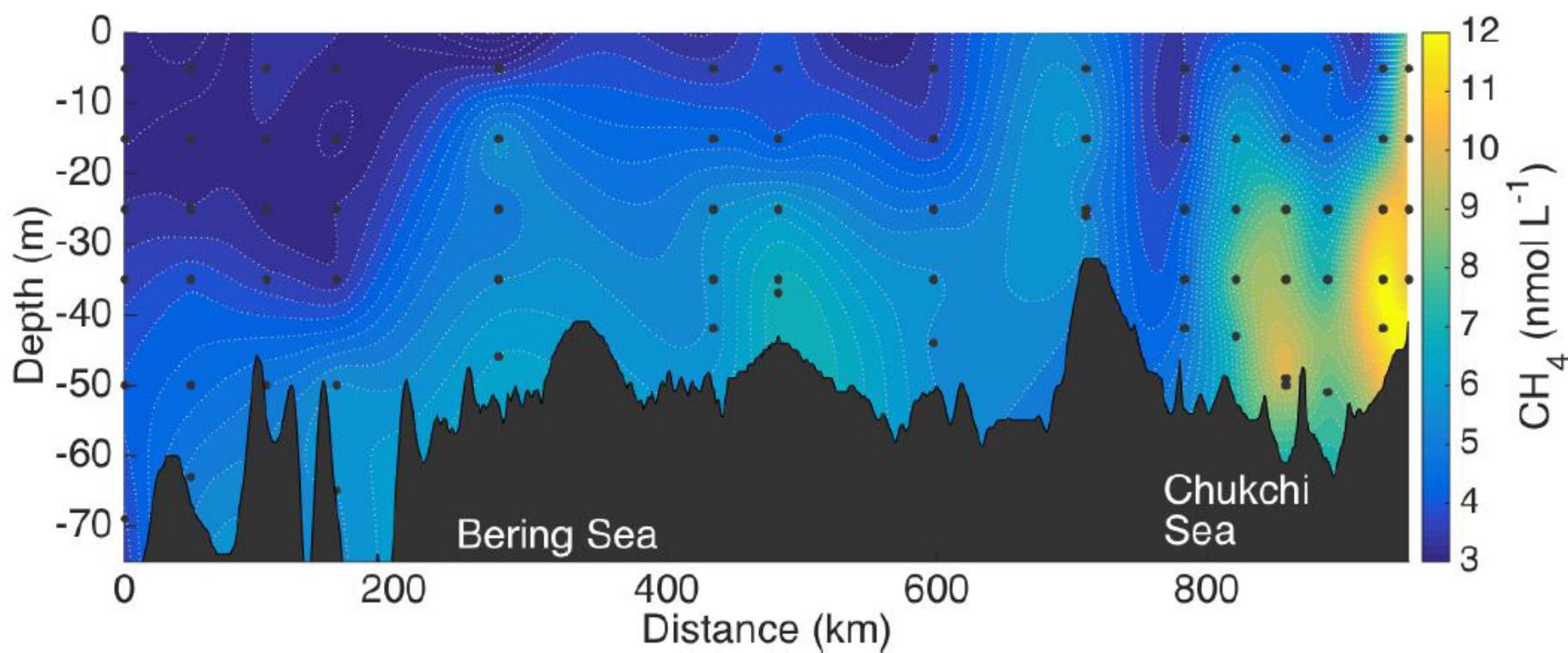
# Survey of Arctic methane and nitrous oxide distributions w/ Lindsay Fenwick and Philippe Tortell (UBC)

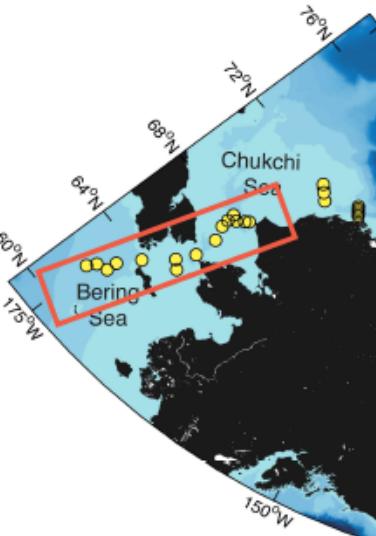
$\text{CH}_4$  is produced by methanogenesis in anaerobic sediments and consumed by oxidation.

$\text{N}_2\text{O}$  is produced by nitrification (aerobic) and denitrification (suboxic) and consumed by denitrification



Methane is present in high concentrations in the Chukchi Sea





Nitrous oxide is present in high concentrations near the sediments of the Bering and Chukchi Seas

