Background
The yearly summer research expeditions to the west coast of Vancouver Island, BC have collected data to examine the changing conditions in the water and to determine how these changing conditions effect the potential for harmful algal blooms to develop in the region. This research is important because there are commercial fisheries and small local populations that are dependent on shellfish and fish for their livelihood and survival.

Introduction
• The hypothesis of this study was that warming temperatures in the water from "the Blob" (a warm-water anomaly) would increase the chance and duration of harmful algal blooms.
• These expeditions measured water temperature, salinity, water density, oxygen content, fluorescence, transmissivity, nutrient content, phytoplankton, sediments and microplastics (starting in 2000).
• This study is unique because there has not been this extent of data collected in the region to identify changes in the ocean in relation to the occurrence of harmful algal blooms.
• This poster focuses on the data collected from Tofino Inlet in 2019 and is compared to the Tofino Inlet data from 2014.

Methodology
• 14 sampling locations were studied for oceanographic water properties and nutrient content aboard the R/V Rock Hopper
• A Seabird 19 CTD collected a data profile for temperature, pressure, conductivity, transmissivity, fluorescence and dissolved oxygen
• Discrete water samples for surface and bottom nutrients and phytoplankton were collected using closing bottles
• Data was analyzed using Excel analyses and graphs, ArcGIS maps, and Surfer contoured profile plots
• 2019 data was then compared with 2014 data

Results

Figure 1. 2019 nutrient maps
Figure 2. 2019 contoured profile plots

Nutrients (fig. 1)
• 2019 nitrate concentrations were higher in the bottom of Tofino Inlet at stations 55, 48, and 54 than in 2014.
• 2014 overall concentration of silicates were higher.
• Phosphate concentrations had more variability from surface to bottom in 2019.

Water Properties (fig. 2)
• 2019 had slightly higher temperatures than 2014.
• Similar salinity data for most of the inlet seen in both years.
• 2019 had greater water density at station 58 and 57.
• 2014 had almost uniform distribution of fluorescence where 2019 data shows mostly no fluorescence in the inlet.
• Similar transmissivity in both years, with ~90% in the deepest regions of the inlet (120 meters down).

Conclusion
Both 2014 and 2019 data indicate temperature conditions that were favorable for harmful algal bloom development. Studies of phytoplankton collected is suggested for further investigation.

Acknowledgements
Thank you to Julie Masura for her support and for helping me with my research project. Thank you to the 2019 research team that collected the samples in Clayoquot Sound.