A marine heatwave known as The Blob and a subsequent El Niño impinged on the British Columbian coast from 2014 to 2016. From 2015 onwards, anomalously low levels of nutrients were recorded in Johnstone Strait, a 400m deep channel north of Vancouver Island. Low levels have persisted through 2018. Anomalously warm, low-density water from The Blob and El Niño years.

The 2015-2018 mean concentrations of all three nutrients declined by roughly two standard deviations from their 1975-2014 mean values. To confirm the decline in nutrient concentrations during 2015-2018 is a real signal, we must first rule out other causes:

- Seasonal bias due to differences in the months sampled.
- Discrepancies between Hakai and DFO data collection and processing.

Since 2015, most nutrient samples in Johnstone Strait have been collected by the Hakai Institute during the spring and summer.

Nutrients in Johnstone Strait are replenished each spring by upwelling of nutrient-rich waters passing over the sill from Queen Charlotte Strait into Johnstone Strait. Upwelled water on the shelf does not show a decline in nutrients during 2015-2018. Nutrient concentration increases with density, suggesting a reduction in dense, upwelled water passing over the sill from QCSt into JS.

During The Blob and El Niño years, and continuing into 2018, Johnstone Strait experienced an inflow of anomalously warm, fresh, low-density water during spring upwelling. Nutrient concentrations were anomalously low from 2015-2018; we hypothesize this is due to less upwelled water making it over the sill into the Strait as dense, nutrient-rich waters are pushed deeper in the water column.