Calvert synthesis notes (2024-10-30)

General goal – figure out who is working on this and what are we doing?

Wiley presentation:

* River dominated coastal margin (as opposed to RCD)
  + Cool figure Wiley showed.
* Winds are dominant
  + Winter surface flow going with winds (SE)
  + Summer westward surface flow (opposing winds)
  + Westward flow had strong correlation with decreasing salinity
  + Triangle island (Borstad et al. 2011).
    - Rhinoceros auklet production to April Chl bloom
      * Winter winds subside
      * Western flow
      * Chl and zoop blooms - needs to match sand lance (April)
      * Need to re-read paper.
* Deep water is largely unknown (Circulation)
  + Jen (2018) – temperature 2-month lag from ARGO site to River’s Inlet
  + Knowing water deep water flow is important nutrietns, carbon etc.
  + Oxygen trends at different isopycnals
    - Water 140m coming into FHS (background signal)
    - Sam’s paper
      * 26 kg m-3
        + Modification of water as moving into FHS
        + Seasonality at FZH08 seasonality not matching HAK1

Mixing through Hakai Pass?

* + Jen (2021) – Rivers
* Bog forest (Oliver et al., 2017)
  + Dilutes macronutrients, but gives organic nutrients and iron
  + When is this happening???
  + Pivot to rain dominated watersheds.
* Freshwater nutrient additions
  + Si:N enrichment observed surface water – Columbia? Whitney et al. (2005)
  + Discharge of different character and timing
* Wetter years
  + Wetter years = more outgassing at shelf.
  + 2020 was different (I saw this too)
  + Wider implications
    - On-offshore outgassing gradient over winter – more coast
    - Mixing?
    - But CDOM?
* Productivity
  + Ware and Thompson (2005) - should add to paper!
    - Highly productive that sustains high biomass.
      * Freshwater source of stability
      * Deep water source of nutrients
  + Large scale satellite characterizations – do they apply.
  + Sam – record from 2004-2024!
    - Need to be careful of clouds.
  + Johannessen (2019)
    - Winter bloom and zooplankton response.
  + Tomassi
    - Year-round omnivores.
    - Advection.
      * Does this link to outer-fjord blooms.

I like how Wiley highlighted high productivity.

* What is the source of this.
* Vertical component.

Zooplankton

* KC10 – Zooplankton Isotope Biomass.
* Very cool zooplankton slides