Puget Sound Plankton Cycles

- Provide minimal info:
    - Chl a is ~phytoplankton abundance
- Think-Pair-Share - describe the pattern
- Patterns to be sure they see:
    - Chl a goes up in the spring
    - Decling in the early summer
    - Second Chl a increas in the mid-late summer

- Provide more info:
    - Tidal currents and sills in Puget Sound
    - Sills+currents result in upwelling, resulting in plentiful nutrients at the surface
    - Light in the spring + available nutr. cause first bloom of phytoplankton
    - Herbivores (copepods) respond to phytoplankton and cause decline in Chl A
    - Predators (fish, jellies) respond to herbivores, releasing phytoplankton

Top-down control

- The World is Green
    - We've heard of one hypothesis for why this is - Bottom-Up
    - [What is the opposite of bottom-up?] Top-down
- The world is green because herbivore populations are kept in check by predators

Classic examples

Otters, urchins, kelp forests

- Otters-urchins
    - Otters LOVE to eat urchins
    - So in locations with lots of otters, how many urchins do you predict you would see?
- Urchins-kelp
    - What do urchins feed on?
    - So in locations with lots of urchins, how much kelp do you predict you would see?
- Otters-urchins-kelp
    - In locations with lots of otters, how much kelp do you predict you would see?
- This is a food chain. What other kinds of links might be involved in this system?
- Kelp provides:
    - Habitat (fishes)
    - Food - large chunks and particulate matter (other grazers, filter feeders
    - Current interference (increases sedimentation - why could that be an issue?)