

## Oceanography 9-27

- Importance of oceanography to the people and economy of the PNW

### Map projections

- > Mercator (cylindrical)
- > Winkel-Tripel (≈ equal area)

- Pacific ocean = 46% of Earth's oceans
- Ocean covers 70% of Earth

### Antarctic circumpolar current

- = only current to circulate globe because Northern Hemisphere has too much land mass.

## - Location Systems

- Puget Sound = Sound, Fjord, Estuary

↓  
complex of inland waterways

↓  
system of flooded glacial valleys

↓  
semi-enclosed coastal

- > Millions of years ago (MYA)
  - mountain forms

- > Tens of 1000s of years ago
  - glacier advance and retreat

- > Five thousand years ago
  - beaches formed

- > Weather, waves, gravity, humans change beaches

- Cordilleran ice sheet 1500m high covered the area

Lines of Latitude lie flat (N, S)  
Longitude = vertical (E, W)

### • Impact of Ice Sheets

- > ice sheet advance carved out Puget Sound basin - sea level was lower (~120m)
- > deposited thick sediments which cover most of drainage basin

### • How do people use Puget Sound?

- > home to 4 million people  $\frac{2}{3}$  of WA
- > Recreation
- > commercial industries + shipping
- > sewage (it is treated)
- > commerce generates \$20b annually (tourism, fish...)

### \* health of Puget Sound is poor

#### • problem below the surface

- each day 140000 lbs of toxic chems enter Sound (pcbs, lead, zinc, copper, petroleum)
- 75% from stormwater
- 549 streams, rivers, lakes with poor quality
- mammals/fish have highest PCB concentration on planet