

$$I = \frac{I_{high} - I_{low}}{C_{high} - C_{low}} (C - C_{low}) + I_{low}$$

I = the resulting index value.

C = the pollutant concentration.

C_{low} = the concentration breakpoint below C .

C_{high} = the concentration breakpoint above C .

I_{low} = the index breakpoint corresponding to C_{low} .

I_{high} = the index breakpoint corresponding to C_{high} .

- ALWAYS round AQI up to the nearest whole number
- AQI is in PPB
- Publish higher AQI

Ocean Influence

- Surface currents: ocean currents affecting top 400m of water – start from air blowing across surface
 - Distribute heat around planet – moderates global climate by transporting warm water from equator to poles + cold water from poles to equator
- Gyres: large circular ocean currents
- Coriolis effect: force driven by Earth's rotation that deflects objects, winds, and currents on surface of Earth + in ocean or atmosphere

Ocean Currents

- Deep currents: flow of water below surface caused by variations
- in density, temperature, and salinity.
- Salinity: concentration of salt in water (ppt)
- Both contribute to thermohaline conveyor: large-scale ocean circulation driven by ocean currents + changes in water temperature and salinity (density)
 - Halocline - zone of large salinity change
 - Thermocline - zone of large temp change

Countercurrents + El Nino

- Countercurrents: changes in normal ocean currents + cause weather change
- El Nino (ENSO): Countercurrent that weakens/shifts direction of trade winds + ocean currents → upwelling currents (cold water rises)

What's Happening With Our Climate Now?

- Indicators of global warming:
 - ↓ snow cover, ↓ arctic sea ice, ↓ glacier mass, ↑ air temp over land, ↑ humidity, ↑ temp of lower atmosphere, ↑ ocean heat, ↑ sea surface temp
- Earth's climate is currently in a period of global warming
 - Warming attributed to ↑ atmospheric GHG

Concentration of Atmospheric Carbon Dioxide (GHG) Is Increasing:

- Natural processes like photosynthesis and cellular respiration maintain balance by cycling CO₂ between living organisms and the atmosphere
- CO₂ absorbed + released from oceans
- Natural atmospheric life of CO₂ ranges from 50–200 years
- Volcanoes increase CO₂ in atmosphere faster than other processes remove it