

Soil moisture:

- Looking at the water that stuck to the soil (not dripping)
- Soil water content: how much water is in soil at any given time (this changes with weather)
- Soil water holding capacity: the most amount of water soil can hold before it starts dripping. Always the same...

Last week...

- Mass of petri dish
- Mass of petri dish filled with wet soil

Today:

- Mass of petri dish filled with dry soil

$$\text{Water content of our soil} = \frac{\text{mass of water that was in the soil}}{\text{mass of dry soil}} \times 100$$

(this tells us the # of grams of water that were in every 100 grams of dry soil)

$$\text{ex. } \frac{18\text{g water}}{100\text{g dry soil}} = 18\%$$

$$\frac{139\text{g water}}{100\text{g dry soil}} = 139\%$$

$$\frac{\text{mass of water}}{\text{mass of dry soil}} = \frac{\text{mass petri dish with wet soil} - \text{mass petri dish with dry soil}}{\text{mass petri dish with dry soil} - \text{mass petri dish}} \times 100\%$$

Why do we care? (ECOLOGY!)

- Soil water content {
- Soil moisture matters to plants
 - This is how they get water!
 - Too much or too little can be bad for plants
 - Soil moisture matters to other soil organisms
 - Soil organisms need the right amount of water (they can move if necessary)

- Soil water holding capacity {
- Soil moisture matters for flooding & wetlands
 - To a large degree, the location of wetlands is determined by soil water holding capacity (higher → wetland)
 - Soil water holding capacity can influence flooding (higher → more local flooding but less flooding in other areas)

Soil Water holding capacity

$$\frac{\text{mass of water in saturated soil}}{\text{mass dry soil}} \times 100$$

$$\frac{(\text{mass of petri dish} + \text{saturated soil}) - (\text{mass of petri dish} + \text{dry soil})}{(\text{mass of petri dish} + \text{dry soil}) - (\text{mass of petri dish})} \times 100\%$$

Individually: Write down

- Your name
- The mass of the petri dish
- The mass of the petri dish + wet soil
- The mass of the petri dish + dry soil
- ★ Your calculations $\frac{1}{2}$ soil water content %
- The mass of the petri dish + saturated soil
- ★ Your calculations $\frac{1}{2}$ soil water holding capacity %