**DLMs - Developing the Next Generation of Female Environmentalists**

**Presentation Title:** Soil Carbon and Climate Change

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**Description:** This presentation explores how soil carbon impacts climate change, including the role of soils in the global carbon cycle and how carbon is stored in soils.

**Reflection Questions:**

1. True of false: At the global scale, more carbon is stored in soils and permafrost than in aboveground vegetation.
   1. True.
2. Roughly what percentage of carbon in a forest ecosystem is stored in the soil?
   1. Roughly half.
3. What is the percentage of organic matter in typical soils?
   1. 1 – 5%.
4. When looking at soil, what color indicates an accumulation of organic matter?
   1. Dark brown/black.
5. What is a positive feedback loop?
   1. A small disturbance causes increased change in a system.
6. What is a negative feedback loop?
   1. A small disturbance does not cause change in a system.
7. Under what environmental conditions does carbon best accumulate in soil?
   1. Wet, cold conditions and in topographic low points.
8. Based on the example data from Yoo et al. (2011), do forest or agricultural soils store more carbon?
   1. Forest soils.
9. Why do concentrations of atmospheric carbon dioxide vary annually?
   1. Photosynthesis causes atmospheric carbon dioxide to decrease, so peak vegetation growth coincides with atmosphere decreases; in the northern hemisphere, photosynthesis peaks in July/August, for the southern hemisphere this happens in December/January. This pattern is more pronounced in the northern hemisphere because there is more land supporting vegetation compared to the southern hemisphere.
10. Why is soil important to managing climate change?
    1. Soil can store carbon in the subsurface and keep it from building up in the atmosphere.