

PINEMAP School Presentation Outline

In order to meet both the State's education requirements and some of the PINEMAP objectives, I would like to give a presentation about plant adaptations to climates. Specifically, I will talk about forest composition in various regions and how trees are adapted to those climates, and then I will talk about possible climate change effects on forests (specifically in Oklahoma). I will also talk about some ways to address the issue of climate effects on trees.

Start:

1. Give a short presentation of tree growth/productivity. Talk about how different species are found in different areas based on temperature, precipitation, sunlight availability, and humidity. Explain how forests vary by region because those factors vary by region. Make the link to forests distribution, health, and survival to those climate factors. Explain that long term changes in their preferred regions can alter growth and severity of disturbances such as (drought, fire, severe storms (ice, wind)).
2. Briefly talk about each issue
 - a. Tree growth
 - i. Temp too high or too low cause stress or even eventual death
 - ii. Too much rain or severe droughts
 - iii. Could lead to movement of natural range or invite for other species (invasive species to take over)
 - b. Frequency and severity of disturbances
 - i. Wildfire
 - ii. Insects and disease
 - iii. Invasive species
 - iv. Storms
 1. Can lead to drought that increases fire risk and provide ideal conditions for insects and can also lead to invasive species outcompeting native species
3. Briefly talk about what can be done to help forests under these changes
 - a. Help them through management and
 - i. Reduce stresses
 1. Minimize pollution***not sure here
 2. Remove unwanted invasive species or competing trees and vegetation to allow more resources available to wanted trees
 3. Forest management techniques (afforestation, remove trees to minimize risk and allow remaining trees to grow stronger and bigger), prescribed fire to eliminate catastrophic fire, etc...

4. Activity

- a. Take them to arboretum and show them differences in species and, depending on the species, how climate change impacts may differ and management may need to be altered.

OR

- b. Have different stations set up with drawn out scenarios from above (fire, drought, invasive species, etc...) at each station as students rotate through have them show what might happen to their forests under climate change (range may shift north with increased temp, insects may attack trees, drought may lead to mortality or other species may take over out competing them). Then have them come up with a way to help the forests against these climate change issues (, remove invasive species) *needs more thought