

**PBIO109 – Americans and Their Forests; K.J. Brown, Instructor**

**Study Guide for Exam 3:**

<N.B.: The exam will cover part of the material that is provided here, and maybe some topics that are not in the study guide, but were discussed in class. This guide is meant to serve as an organizing framework for your study efforts.>

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**This SHORT exam will cover lecture dates = 16-25 OCT**

\*\*> Make a brief summary table outlining the forest types we have discussed –

>> Know, on a map of the continental US, where ALL the forest types are that we have covered so far: California Sierran conifers, Hawaiian forests, Rocky Mtn forests, beech-maple, northern hardwoods, southern mixed-pine/oak, Pacific Northwest Forests, Mixed Appalachian, Oak-Hickory.

>> GLOBAL spatial distribution of boreal forests. Low spp diversity there.

>> Why is climate change affecting boreal forests disproportionately? Be able to name and describe at least four ways in which climate change is affecting boreal forests.

>> **Concepts:** Treeline, Krumholz, rain shadow (review!), boreal vs tundra, permafrost, nitrogen-fixing trees (HI lecture); leaf heteroblasty

>> Seasonal patterns of precipitation in the Rockies, California forest types. How does this interact with the growing season, and when fires are common in these areas?

>> Native, plantation, and invasive forests of Hawaii ...  
(know an example of invasive tree in Hawaii)

>> *Metrosideros*, *Acacia* = native species; *Acacia* as nitrogen fixer

>> Figures to be familiar with and be ready to interpret them:

- mean annual PPT vs mean annual TEMP
    - how does this organize where we find what types of vegetation?
  - 450,000 years' worth of Atmospheric CO<sub>2</sub> record from ice core data.
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- What determines forest types in CA?
    - Mountains- rainshadow
    - water
  - Who owns/manages most CA forest?
  - What is the role of fire in CA forests?
    - it depends on where you are