

Fire Behavior and Ecology (R&WM 530)

5/1/80

Final Exam Temperatures

- (10) 1 A grass field that was burned in southern Alberta, Canada produced less grass than a similar unburned pasture following a year with normal precipitation. What are some of the reasons that you could give as probable causes for the lower grass yield on the burned site?
- (5) 2. Which nutrient elements are most easily volatilized by fire?
- (5) 3 What are hydrophobic substances? How are they formed, and how do they affect water infiltration?

- 3) 4. What kind of temperatures would you expect to find at various heights above and below the soil in 5 tons/acre of rough where flames are 12 ft. high?

	<u>Temperatures</u>
4 ft	=
1 ft	=
Soil surface	=
1 cm	=

- (4) 5. What kind of soil temperatures can most grass seeds tolerate for 5 minutes?

- (8) 6. Why are pine trees more resistant (less topkill) to ground fires than standing aspen trees?

(9) 7 How would you manage a mesquite-tobosa grassland for optimum bobwhite quail production?

(10) 8 How would you manage a Southeast forest community for optimum bobwhite quail production?

0) 9. How does the role of fire differ between Coastal Redwoods and Giant Sequoia plant communities?

(10) 10. Why is clearcut and burning a desirable management practice for Sitka spruce, but not for red spruce?

11. Discuss the historical role of fire in the maintenance of longleaf and slash pine in the lowlands ("flatwoods") in the Southeast.

(10) 12. In the Douglas-fir zone of the northern and central Rocky Mountains, we frequently speak of western larch, lodgepole pine, white pine, aspen, and Douglas-fir as the principal tree species. How are each of these species tied to succession after fire in relation to elevation, soil sites, and fire frequency?