

June 10, 2003

Americans and Their Forests

Exam 2

Credit:

Definitions	10 @ 2 points =	20 points
Short answer questions	20 @ 3 points	60
Essay	20 points	20
Total		100
Extra credit		5

Please be sure to answer all parts of a question!

I. Definitions (2 points apiece)

Please define the following terms **with reference to forest history**.

1. Slash _____
2. Smokey _____
3. Naval stores _____
4. Pacific Yew _____
5. Rain shadow _____
6. Tree sitting _____
7. Crown fire _____
8. Clear cut _____
9. Narrow gauge _____
10. Red cockaded woodpecker _____
11. Adirondack Preserve _____

II. Short answer (3 points apiece)

1. Suggest two ecological factors making the northern halves of Wisconsin, Michigan, and Minnesota different from the southern halves.

a. _____

b. _____

2. How did new technology drive the industry to largeness in the Lake States?

3. Because of the rapid increase in land prices during a 19th century lumber boom, early and widespread ownership of timber land was the key to making a profit. Mention two ways of acquiring land described in lecture.

a. _____

b. _____

4. Suggest 2 ways forest fragmentation affects plants and animals living in the surviving forest.

a. _____

b. _____

5. What critical idea did Gifford Pinchot and Bernard Fernow learn in Germany?

6. What are these guys doing?



7. Steam technology was an option in the Lake States, but a necessity in the South. Why?

a. _____

b. _____

8. In the South (and elsewhere) early European visitors often commented that the forest was “so open one could drive a horse and carriage through it”. What can we infer about those forests?

9. Please mention two requirements laid out in the Endangered Species Act.

a. _____

b. _____

10. What did lumber companies do with profits from the Lake States?

11. Why did lumber operations quickly shift from railroads to trucks in the Pacific Northwest?

12. Does the definition of “old growth” forest necessarily include big trees? Why not?

13. Name

- a. an endangered species _____
- b. a recovered (previously) endangered species _____

14. Which forms of political expression would Earth First likely engage in?

- _____ lawsuit against a timber company
- _____ firebomb a paper company office
- _____ chain themselves to a skidder
- _____ collaboration with the USFS in an education campaign
- _____ letter writing to congressmen

15. This is a cross-section of a tree ca. 300 years old (not all annual rings are shown). Describe the history of fire around the tree. Label the specific details which support your history.

16. Indicate on the map where you would start a back fire. Explain what this back fire would accomplish for you.

17. Name two tree species you are likely to encounter in the Coastal Plain South.

a. _____

b. _____

18. Why (according to William Greeley, chief forester 1920-1932) should fires be stopped before they reach 10 acres (“Aggressive Initial Attack”)?

a. _____

b. _____

19. USFS fire suppression in the early and mid 20th century was how effective stopping fires (check one)?

_____ No effect at all – how could a major ecosystem process such as fire be stopped by man?

_____ Marginally effective, cutting fires around campsites and villages.

_____ Marginally effective, but especially in Kansas and Nebraska.

_____ Phenomenally effective, reducing the natural occurrence of fire ca. 90%.

20. How can we begin to reduce the threat of severe wildfire in the American West?

a. _____

b. _____

c. _____

III. Essay (20 points)

Please write a 1-2 page essay on **one** of the following topics. Be sure to address all parts of the question.

1. "Available technology affects the pattern of forest exploitation and the ecology of the post-exploitation forest". Discuss this proposition with reference to the Lake States, the Coastal South, and the Pacific Northwest lumber booms.

2. Describe the different ways "old growth" or "virgin" forest can be defined. Which is most appropriate to the Pacific Northwest? Why?

Extra credit (1/2 point apiece)

Please identify the following **in the context of forest history**.

Kerf _____

Balloon stack _____

Slash _____

Pine Box _____

Dog hole _____

Peshtigo _____

Photofinder _____

Caterpillar _____

Wallace _____

ELF _____

Answers

I. Definitions

1. Dead limbs and tops left over after cutting. Dries and burns easily.
2. Bear trademark of US Forest Service
3. Chemical products derived from pine pitch in the South. An important military resource.
4. Insignificant little tree that produces an anti-cancer drug known as taxol. Biological diversity is important.
5. Area downwind of a mountain range which receives little rain. Has little or no forest.
6. Protesting cutting of old growth forest by sitting up in a tree, preventing it from being cut. Attracts the media.
7. Fire which runs through the tops of trees, as well as along the ground. Kills some trees.
8. Cut all woody plants. Used to recoup the cost of very expensive rail lines.
9. Small rail road built to haul timber. Easily built and easily moved as the forest is cut.
10. Endangered bird species requiring old growth longleaf pine. An indicator of the loss of longleaf savanna habitat.
11. A large park in upstate New York created by early conservationists for recreational and aesthetic values.

II. Short answer

1. a. contrasting soil texture and fertility
b. contrasting day length and growing season length
2. Large pieces of equipment (e.g. railroads, steam-driven saws, band saws) had high productivity, but cost a lot of money. To use the investment efficiently, they required high volume, so the complementary technologies (e.g. log handling) had to be on a large scale to match them.
3. Checkerboard purchasing, acquiring homestead land under false pretenses, education land grants, land grants to railroad companies.

4. a. edge effects
b. reduced forest size cannot accommodate large home ranges
c. many negative effects in forest streams (silt, variation in flow, dissolved O₂)
5. Forestry: the sustainable cultivation of trees as a form of agriculture.
6. Rafting logs down a river to the saw mill.
7. In the South there is a) no snow to slide logs on, and b) no freezing to solidify mud. Also, there were very few rivers large enough to drive logs.
8. Fire must have been frequent in natural vegetation, removing understory vegetation.
9. a. Protect the animal/plant
b. Protect its habitat
c. Actively manage for its recovery (recovery plan)
10. Invest them in timber land in the PNW.
11. Steep slopes made railroads very difficult to construct and run. Also, trucks could run on roads constructed at public expense.
12. No. Big trees do not necessarily indicate old trees, and old forest doesn't necessarily include a great variety of forest species. Trees arrive early in ecological succession; other species may come to a site much more slowly. Soils develop very slowly indeed.
13. a. Northern Spotted Owl, Red Cockaded Woodpecker
b. Bison, brown pelican, alligator, eagle, whooping crane
14. Chain themselves to a skidder
15. Fire scars indicate fires at two dates. Growth slowed following the fires.
16. The backfire would be started downwind of the major fire. It would clear away fuel, thereby creating a large firebreak.
17. loblolly pine, longleaf pine, magnolia, tupelo, sweet gum, bald cypress
18. Small fires are cheaper and easier to put out than large ones.
19. Phenomenally effective
20. a. reduce fuel by prescribed burning
b. let natural fires burn
c. prevent building in fire-prone areas.

III. Essay

1. Available technology

Lake states: Oxen, water-powered mills → cutting strongly oriented to rivers
Selective cutting
Exception: splash dams on small streams

South: Steam yarding, narrow gauge rail → cut away from rivers, mill away from rivers, clear cut

PNW: Tractor skidding → cut on steep slopes, log selectively

2. Old growth

1. big trees
2. no human intervention
3. uneven age distribution
4. complex canopy structure and much woody debris (PNW, with its big trees)

Extra

Groove made by a saw

Big stack on a locomotive to control sparks

Branches and tops left in a clearcut. Burn easily

Cuts on the pine bark made to get resin for naval stores.

Deep water near the Oregon coast that allowed loading logs.

Site of disastrous slash fire.

The USGS software for locating aerial photos.

Tracked vehicle used for skidding logs in the PNW.

Town threatened in the 1910 fire.

Earth Liberation Front – militant environmental group