

April 21, 2008

# Americans and Their Forests

## Exam I

Credit:	Short answer questions	25 @ 3 points = 75 points	
	Essay	25 points	25
	Total		100
	Extra credit		5

Please answer all parts of a question.

Please make sure you have answered the question I am asking.

Please explain your answer (“yes”, “no”, “ships”, “firewood”, etc. isn’t adequate).

### I. Short answer (3 points apiece)

1. Name two tree species (or genera) you would find in forests of northern New England, Ontario, and around the Great Lakes (but which are absent or uncommon in Ohio).

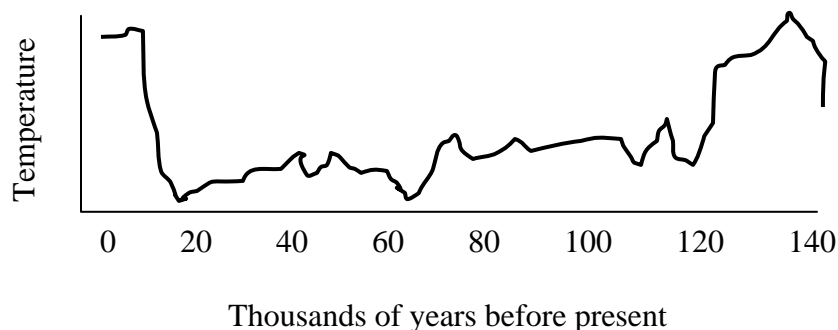
a. **\_\_Pine, Hemlock, Red Maple, Birch, Spruce, Fir\_\_**

b. \_\_\_\_\_

2. Where would you find forests that are a) flat, b) very sandy soil, c) dominated by pitch or loblolly pine, d) characterized by low-nutrient soils, and e) burn often?

**On the coastal plain, e.g. Virginia, southern New Jersey, the Carolinas, Florida**

3. Draw a graph showing the earth’s temperature over the last 140 thousand years.



4. What took refuge in a “glacial refugium”? **Deciduous forest species.**

What was it taking refuge from? \_\_\_**Ice age climate, temperature, etc.**

5. How can pollen be used to tell us about the history of American forests?

- **pollen has distinctive patterns that allow species to be identified**
- **pollen accumulates in ponds/bogs and lasts a long time**
- **extracting cores of sediment from ponds and aging the layers**
- **pollen in each layer tells what was growing at the time the layer was laid down**

6. Suggest four important ways American Indians used the forest. Put a star (\*) next to the use that probably impacted the forest most strongly.

a. **\_firewood \*** \_\_\_\_\_

b. **\_agriculture** \_\_\_\_\_

c. **\_hunting** \_\_\_\_\_

d. **\_construction** \_\_\_\_\_

7. We think American Indians used **fire** to clear undergrowth, drive game, etc. Mention two forms of evidence which inform us about Indian burning.

a. **\_\_accounts of early European travelers who observed burning**

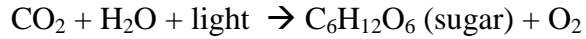
b. **\_\_open forests (“open enough to drive a carriage through”)**

8. Describe the attitude toward forest of a **Virginian** colonist ca. 1620. In terms of his experience and motivation, why does he have this attitude?

- **Virginian doesn't care about forest**
- **No experience with forests or woodworking in England**
- **Treasure hunter – doesn't perceive value in forests**
- **Aristocratic attitude – let someone else deal with practical issues**
- **Not religious – no fear of biblical wilderness**

9. What would you call this process?

photosynthesis

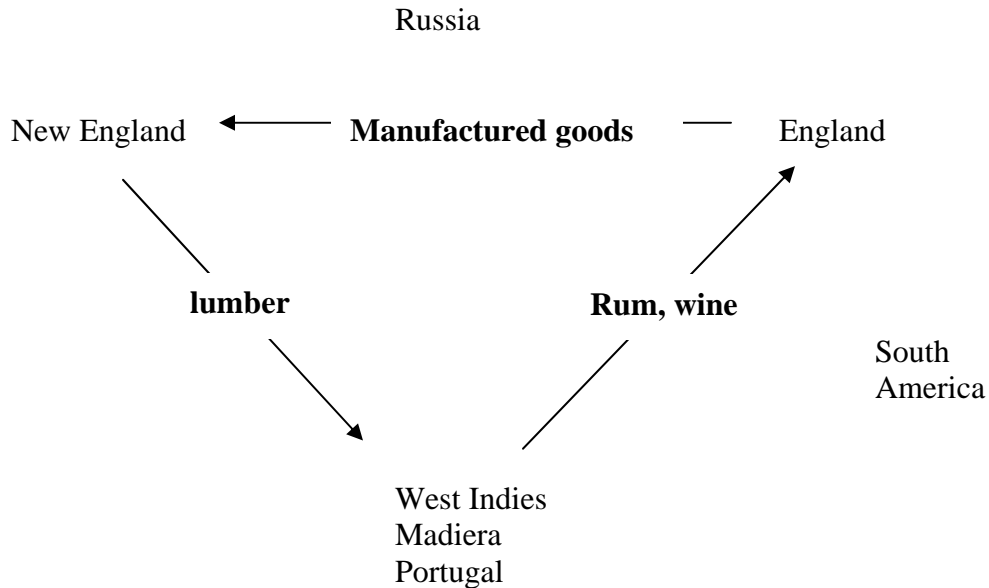


Where does it occur?

leaves

Why was it important to the colonists? makes food, lumber, and firewood

10. Complete this diagram so that the enterprising Yankee trader ends up with cash in his pocket. Show **trade links** and **trade goods**.



12. Royal Surveyors (ca. 1700) were responsible for surveying the King's

Forests. Their job was made difficult by

- large "towns", corrupt officials, enormous potential profits
- uncooperative locals

13. List the most important **export** items of each colony.

New England lumber

Middle Atlantic wheat (flour)

Virginia tobacco

14. How were livestock important to colonial forests (for example, domestic pigs on the inner coastal plain of Delaware)?

**\_\_\_roaming livestock damaged crops, requiring lumber for fences\_\_\_**

15. Good soil is critical to a successful farm. The soil is much better in central and western Ohio than here in southeastern Ohio, so southeastern Ohio was not heavily homesteaded. What makes the critical difference between soil of SE Ohio and the rest of the state?

- **SE Ohio was never glaciated**
- **Soil in glaciated areas is young and not heavily leached**
- **Young soil is nutrient rich; old (leached) soil is nutrient poor**
- **People preferentially settled where the soil was good for farming**

16. In 1810 there were 7.2 million people in the United States. In 1860 there were ca. how many people? **\_\_\_31 million\_\_\_** (note, if you are within 50% of the right answer, I will give you 2/3 credit; within 25% - full credit).

17. List three important factors that favored Albany as the center of the timber trade in 1820.

- a. **\_\_\_Hudson River; cheap transport; large watershed\_\_\_**
- b. **\_\_\_Shipping; head of navigation; enormous demand from NY City**
- c. **\_\_\_Junction with the Erie Canal\_\_\_**

18. Your mill is getting logs from 37 companies upstream. How can you keep them all organized according to owner?

- a. **\_\_\_"Booms"across the river, allowing penning of logs\_\_\_**
- b. **\_\_\_Owners' marks on the logs\_\_\_**

19. List two innovations that increased productivity of lumber mills between 1800 – 1850.

- a. **Muley saw, iron parts, overshot water wheel, mill size, powered cart drive**
- b. **\_\_\_\_\_**

20. American Indians probably had a greater impact on pre-settlement forest than historical records suggest because **ca. 95% died early of diseases arriving from Europe, therefore there were larger populations than previously thought, and more impact** \_\_\_\_\_.

21. In terms of the natural environment, how was east-coast North America in 1800 like England ca. 1600?

**All the trees were cut; soil was exhausted; over-population**

23. The scale on our aerial photos is ca. 1 inch (on the photo) = **80,000** \_\_\_\_\_ inches (on the ground).

24. Which of the following were probably produced and eaten by pre-settlement Indians in Ohio?

rye	barley	<b>corn</b>
<b>squash</b>	wheat	bamboo
white pine	rum	sugar cane

25. I have said many times “wood is heavy and bulky relative to its value”. How has this property shaped communities? Describe an example.

**e.g. Boston – all wood within land-transportable distance was cut (20-30 miles away); farther wood was too expensive because transport was difficult and expensive. Therefore firewood was cut up the coast into Maine and delivered by ship.**

**e.g. Philadelphia – same problem, but colonists burned coal from Europe**

## II. Essay (25 points)

Please write a short (but comprehensive) essay on one of the following two topics.

1. I have said many times “wood is heavy and bulky relative to its value” (See? Now I’m saying it again). How can you organize your timber operation to maximize profits in light of this fact? Please be specific.

2. The American dream of improving oneself through hard work was a reality in the colonies. How did the natural environment allow some colonists to get rich in New

England or the Middle Atlantic (choose one)? What factors turned this prosperity to ecological disaster by the end of the colonial period?

**1. Mention these points**

- **along a river (free transport)**
- **mill near the stumps (carry lumber, not logs)**
- **shift to ships (logs are poor boats)**
- **cut in winter (ground is hard and slick with snow)**

**2. Mention these points**

**New England - lumber**

- **lumber in the Atlantic market (England, Barbados)**
- **cheap ships**
- **rivers**
- **disaster: all the trees were cut; loss of English market**

**Middle Atlantic - wheat**

- **good soil**
- **navigable estuary allows easy shipping**
- **fall line – easy power for milling**
- **disaster: soil exhaustion; over-population; erosion; loss of European markets; deforestation**

**Extra credit** (1/2 point apiece)

Identify the following **in the context of forest history**.

Measles **\_killed Indians, giving appearance of little human impact before Europeans**

Girdling **easy way of killing trees by cutting sap flow; speeds clearance**

Cellulose **\_carbon polymer making up wood; strong and energy-rich\_\_**

Peter Kalm **\_ Swedish observer in 1740s – describes slash-and burn \_\_\_\_**

William Matlack **colonist who created a wheat farm in New Jersey by clearing forest**

Fall line **\_easy water energy for milling wheat, encouraging clearance of forest\_\_**

Worm fence **\_ primitive fence which required a lot of wood \_\_\_\_\_**

Ordering of towns \_ **New England** essay describing ideal of centralized towns;  
**illustrates fear of the forest** \_\_\_\_\_

Madiera \_\_\_ **Portugese** colony providing a market for **New England** lumber

Savanna \_\_\_ **open grassland** with a few isolated trees; created by frequent fire

