

Unit 3 Pre-Test, Grades 7 – 9

Earth system responses to natural and human-induced changes

Name _____ Class _____

1. During a particularly warm spring, caterpillars emerge from their eggs earlier. This is an example of:
 - a. Coping
 - b. Migration
 - c. Adaptation
 - d. Extinction

2. The great elephant bird of Madagascar has not been seen since the late 17th century. This is an example of:
 - a. Coping
 - b. Migration
 - c. Adaptation
 - d. Extinction

3. Geese fly south for the winter. This is an example of:
 - a. Coping
 - b. Migration
 - c. Adaptation
 - d. Extinction

4. As water levels change, generations of plants develop longer root systems. This is an example of:
 - a. Coping
 - b. Migration
 - c. Adaptation
 - d. Extinction

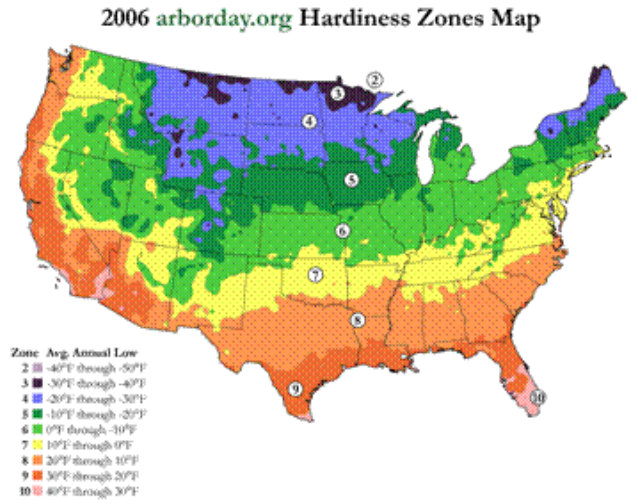
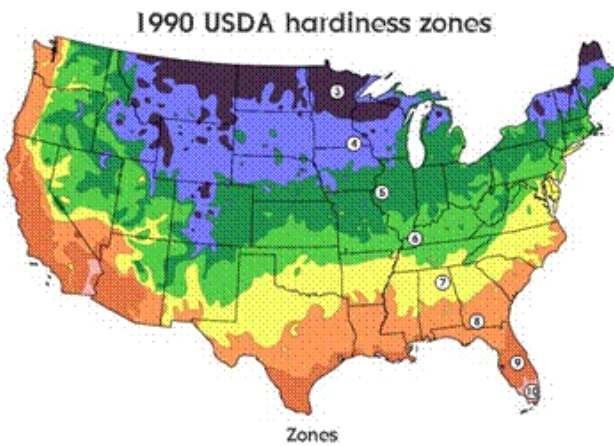
5. Name and describe two ways plants “know” when it is time to start growing. Would either of these ways be affected by climate change? Explain why or why not.

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6. Use the maps below to answer the question in the space provided. How do you describe the changes from 1990 to 2006?



Zone Avg. Annual Low
 2 ■ -40°F through -50°F
 3 ■ -30°F through -40°F
 4 ■ -20°F through -30°F
 5 ■ -10°F through -20°F
 6 ■ 0°F through -10°F
 7 ■ 10°F through 0°F
 8 ■ 20°F through 10°F
 9 ■ 30°F through 20°F
 10 ■ 40°F through 30°F

Zone Avg. Annual Low
 2 ■ -40°F through -50°F
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7. Phenology is
- a. The study of ecosystems
 - b. The study of the timing of life-cycle events
 - c. The study of plants
 - d. The study of oceans and tides
8. Identify the following as biological or environmental events. Write B for biological and E for environmental.

First flower _____

First snow _____

Birds flying south _____

Leaves fall _____

Rainy season _____

9. Diagram and label the life cycle of a plant, include as many life-cycle stages as you can:

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10. The seed shown below is most likely dispersed by:

- a. Animals
- b. Water
- c. Wind



(photo from sparkleberrysprings.com)

11. A seed is surrounded by a sweet, fleshy fruit. The seed is most likely dispersed by:

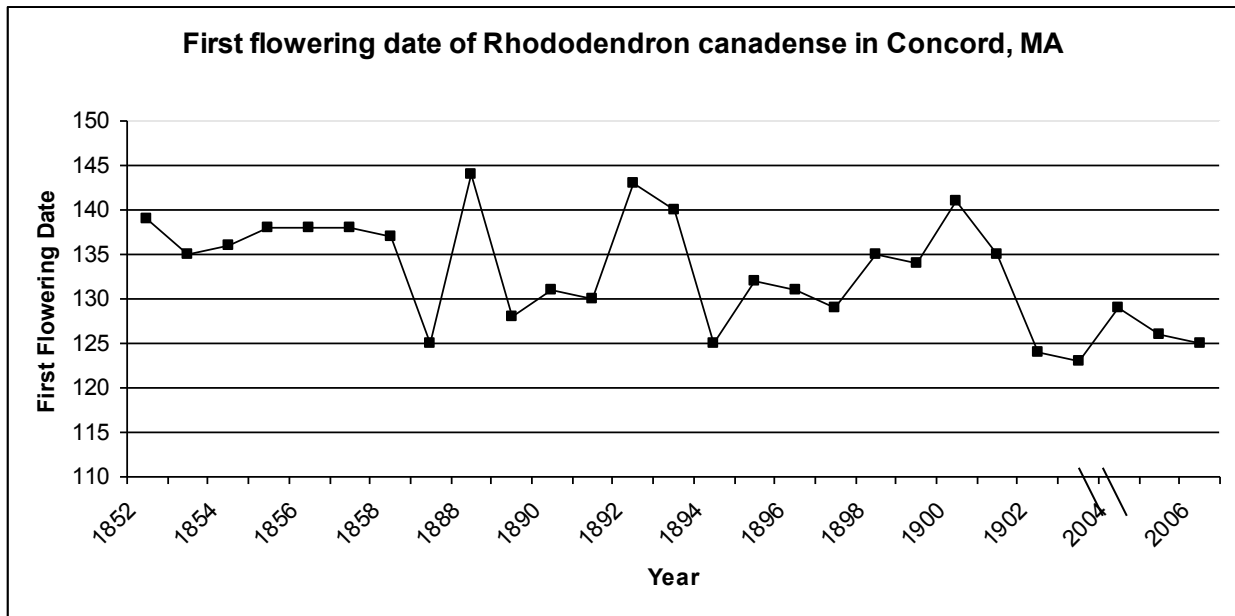
- a. Animals
- b. Water
- c. Wind

12. In the space below, describe the concept of “assisted migration.” Do you feel that assisted migration is a good idea? Why or why not?

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Answer questions 13 and 14 using the graph above:

13. Describe the pattern of first flowering date of *Rhododendron canadense* between the years of 1852 and 2006:
- a. Changing from year to year, but with a clear increase
 - b. Changing from year to year, but with a clear decrease
 - c. Stays the same each year
 - d. No pattern can be observed
14. *Rhododendron canadense* flowering date is probably based on:
- a. Day length
 - b. Presence of insect pollinators
 - c. Temperature
 - d. Wind speed