

Illinois State Museum – Ice Ages
Late Pleistocene Mammal Distribution:
Ice Age Remains and the Faunmap Database

Objective: Students will 1) learn to use the ISM Faunmap database and 2) analyze animal distribution and climate change using guided questions and the Faunmaps.

Grades: Middle and High School

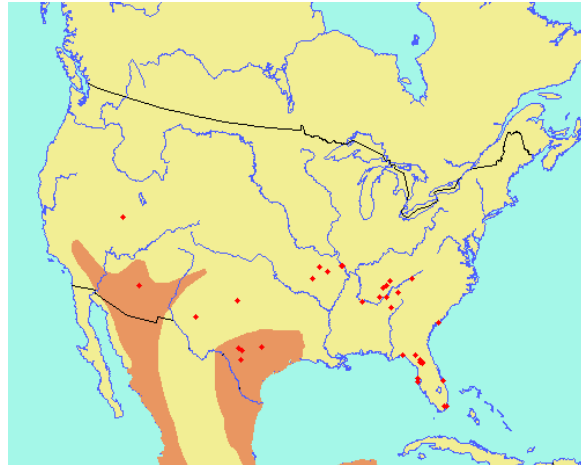
Time Required: one class period

Materials:

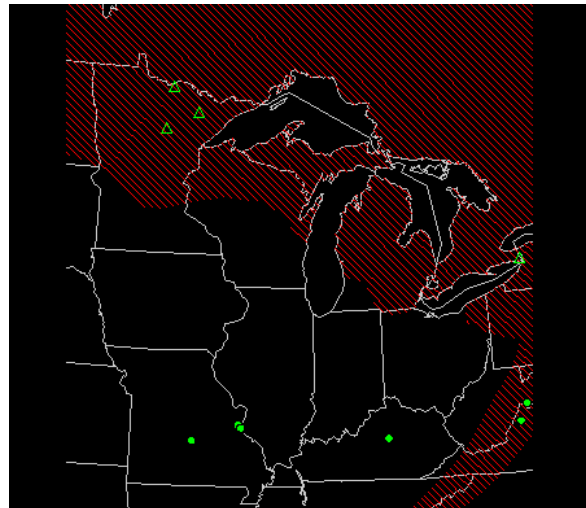
Computer with Internet access

Guided questions sheet printout

Motivation: By studying the remains of Late Pleistocene mammals, we can learn how the climate and environment of the world has changed over thousands of years. This may have implications for our own society. By mapping the archaeological finds in the Midwestern United States, scientists have been able to compare and contrast the animal's remains and the sites in which they were found to contemporary animals and the climate of our environment. Information is continuing to come to light.



jaguar remains



Map: *snowshoe hare remains*

Procedure:

- Read the content about the late Pleistocene Mammals in the ISM Web Exhibit *The Midwestern US 16,000 Years Ago*
<http://www.museum.state.il.us/exhibits/larson/>
- Look at the Faunmaps for each animal to find the places where remains have been found, and, if the animal survived the Ice Age, where its modern habitat lies.
<http://www.museum.state.il.us/research/faunmap/> This is the Faun Map database with instructions on use. Search by the name of the animal. You can also find individual faunmaps for animals in the *Midwest 16,000 Years Ago* web presentation.
- Use the guided questions with the maps to focus on the climate change and mammal distribution in Late Pleistocene and today.

- Deduce the climate changes that caused the change in distribution of mammals or the extinction of mammals.

Questions

Use the text about the animals and maps to answer these questions.

1. To which Midwest state would you travel if you wanted to see large numbers of mastodon remains?
2. In which Midwest state have the most mammoth remains been found so far?
3. The remains of which late Pleistocene mammals have been found in Illinois?
4. To which Midwest state would you travel if you wanted to find the remains of the largest variety of Ice Age mammals? Which mammals would you be able to find?
5. Which five of the eighteen mammals survived the mass extinction of 11,000 years ago?
6. Of these five mammals that survive, which ones still live in the same ranges? Which ones inhabit different locations? Why may the animal species have moved?

Assessment:

Participation in oral discussion of the answers to the guided questions

Teacher-made quiz using one faunmap and guided questions that students answer.

Illinois State Board of Education Goals Addressed:

Science:

Middle School:

12.B.3a: Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid.

12.B.3b: Compare and assess features of organisms for their adaptive, competitive and survival potential (e.g., appendages, reproductive rates, camouflage, defensive structures).

Early High School:

12.B.4a: Compare physical, ecological and behavioral factors that influence interactions and interdependence of organisms.

12.B.4b: Simulate and analyze factors that influence the size and stability of populations within ecosystems (e.g., birth rate, death rate, predation, migration patterns).

Guided Questions for Faunmap Mammals:

Use the text about the animals in Midwestern US 16,000 Years Ago and the images of the Faunmaps to answer the following questions thoroughly.

1. To which Midwest state would you go if you wanted to see large numbers of mastodon archaeological remains?
2. In which Midwest state were found the most mammoth remains so far?
3. The remains of which Late Pleistocene mammals have been found in Illinois?

4. To which Midwest state would you travel if you wanted to find the remains of the largest variety of Ice Age Mammals? Which mammal remains would you be able to find?
5. Which five of the eighteen mammals survived the mass extinction of 11,000 years ago?
6. Of these five mammals that survive, which ones still live in the same region they did 16,000 years ago? Which ones inhabit very different locations? Why may the animals have moved? Does the current habitat have a climate similar to the ancient climate where Ice Age remains were found?
7. Choose one Faunmap that shows remains of an ice age mammal. Print it out. Analyze it using the knowledge you gained from the Web site. Write your description of what the map shows you (extinction of a mammal, climate change and subsequent habitat change). Verify your conclusions with the Web exhibit or other text for that animal.