

We all know the story: Glaciers covered the area until the Wisconsin Glacial Episode ended 10,000 years ago



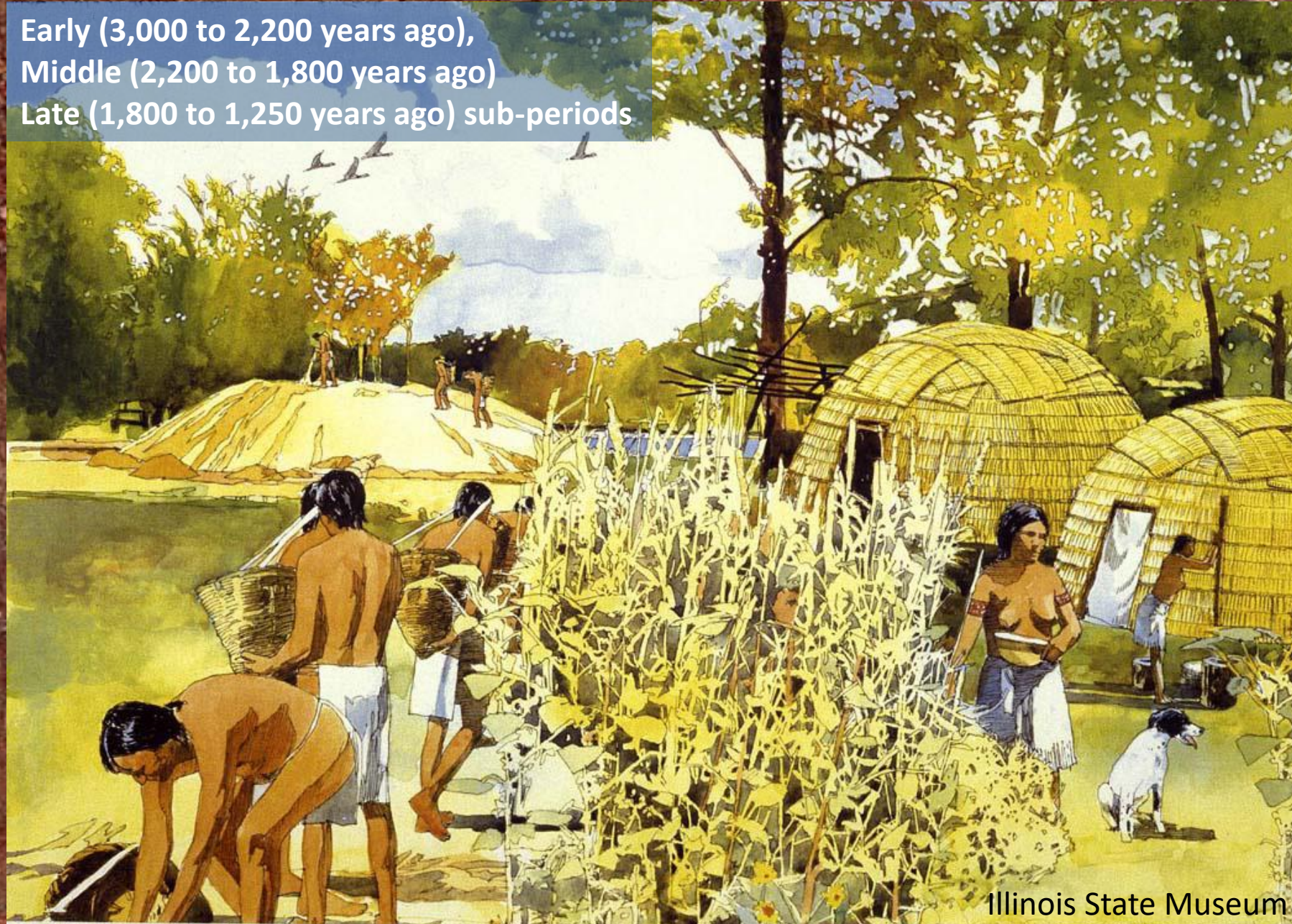
The bison and bird-filled tallgrass prairie appeared



Native Americans lived lightly on the land

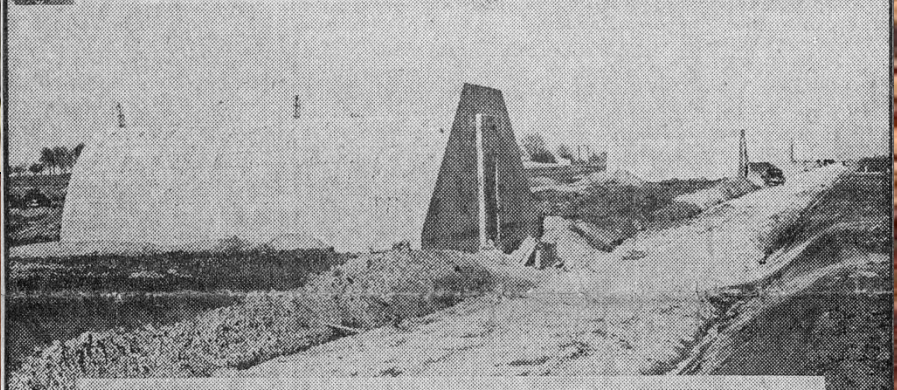
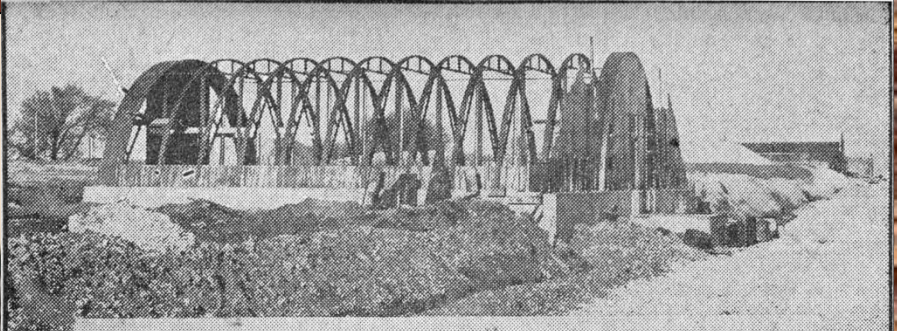
Woodland: 3,000-1,250 Years BP

Early (3,000 to 2,200 years ago),
Middle (2,200 to 1,800 years ago)
Late (1,800 to 1,250 years ago) sub-periods



Illinois State Museum

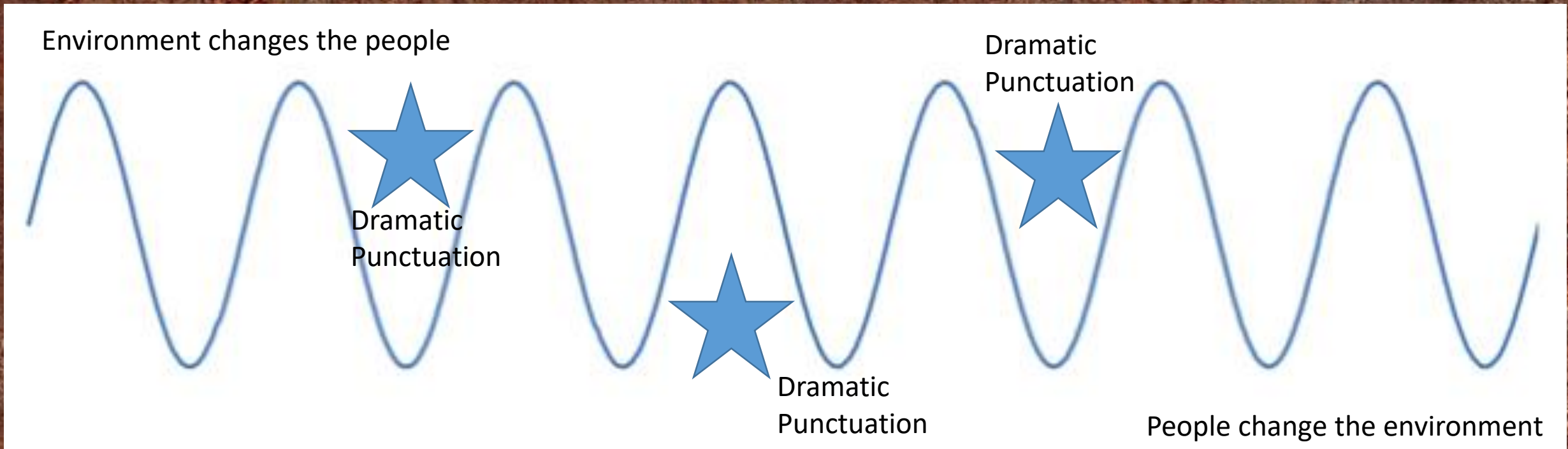
Then, in 1673, The Euro-Americans arrived and started tearing things up



Forest Service and partners to the rescue to return it to prairie and bison and birds as it always had been!



Midewin Has always been a place where dramatic change has been the norm, and people and environment have changed each other

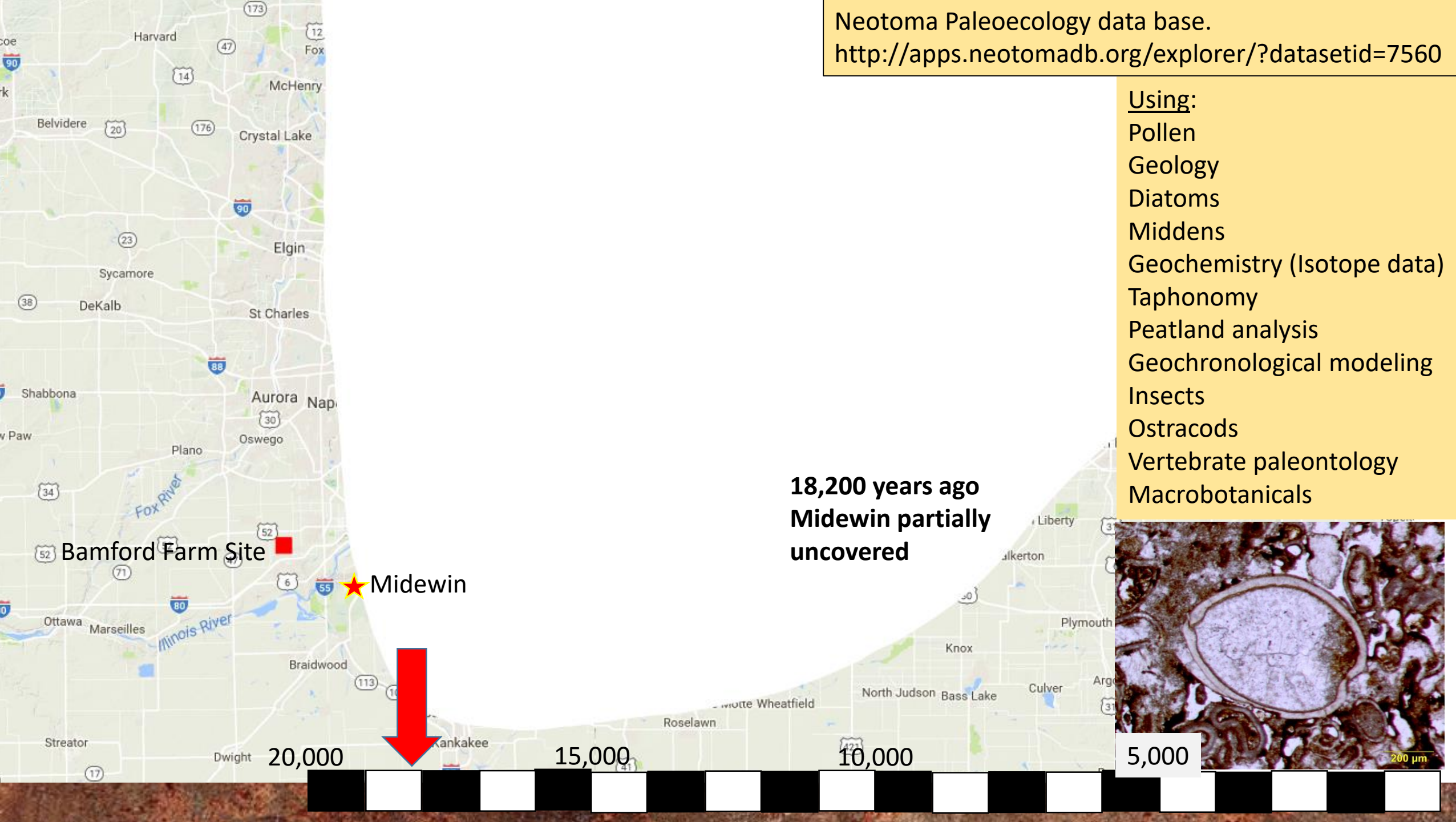
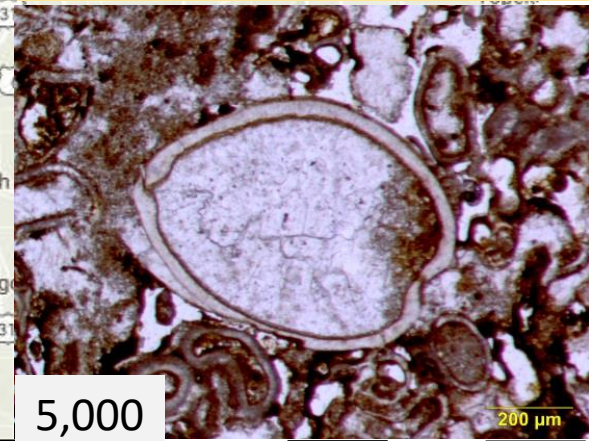


....and that process continues to this day.

Neotoma Paleoecology data base.
<http://apps.neotomadb.org/explorer/?datasetid=7560>

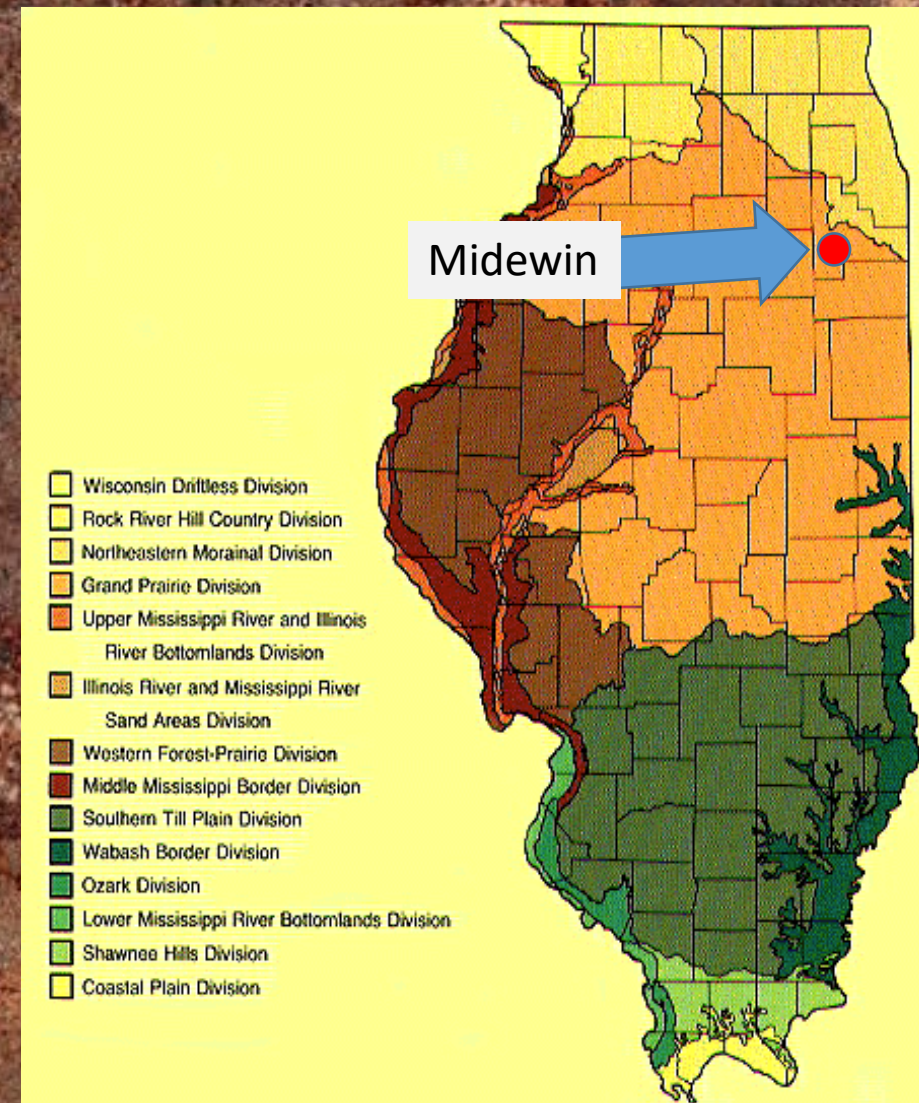
- Using:
 - Pollen
 - Geology
 - Diatoms
 - Middens
 - Geochemistry (Isotope data)
 - Taphonomy
 - Peatland analysis
 - Geochronological modeling
 - Insects
 - Ostracods
 - Vertebrate paleontology
 - Macrobotanicals

18,200 years ago Midewin partially uncovered

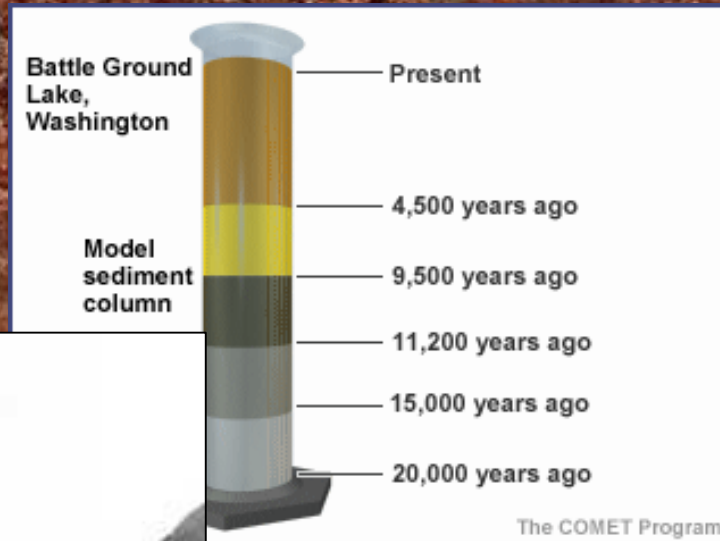




And after the glaciers receded,
It opened up a second line of evidence:

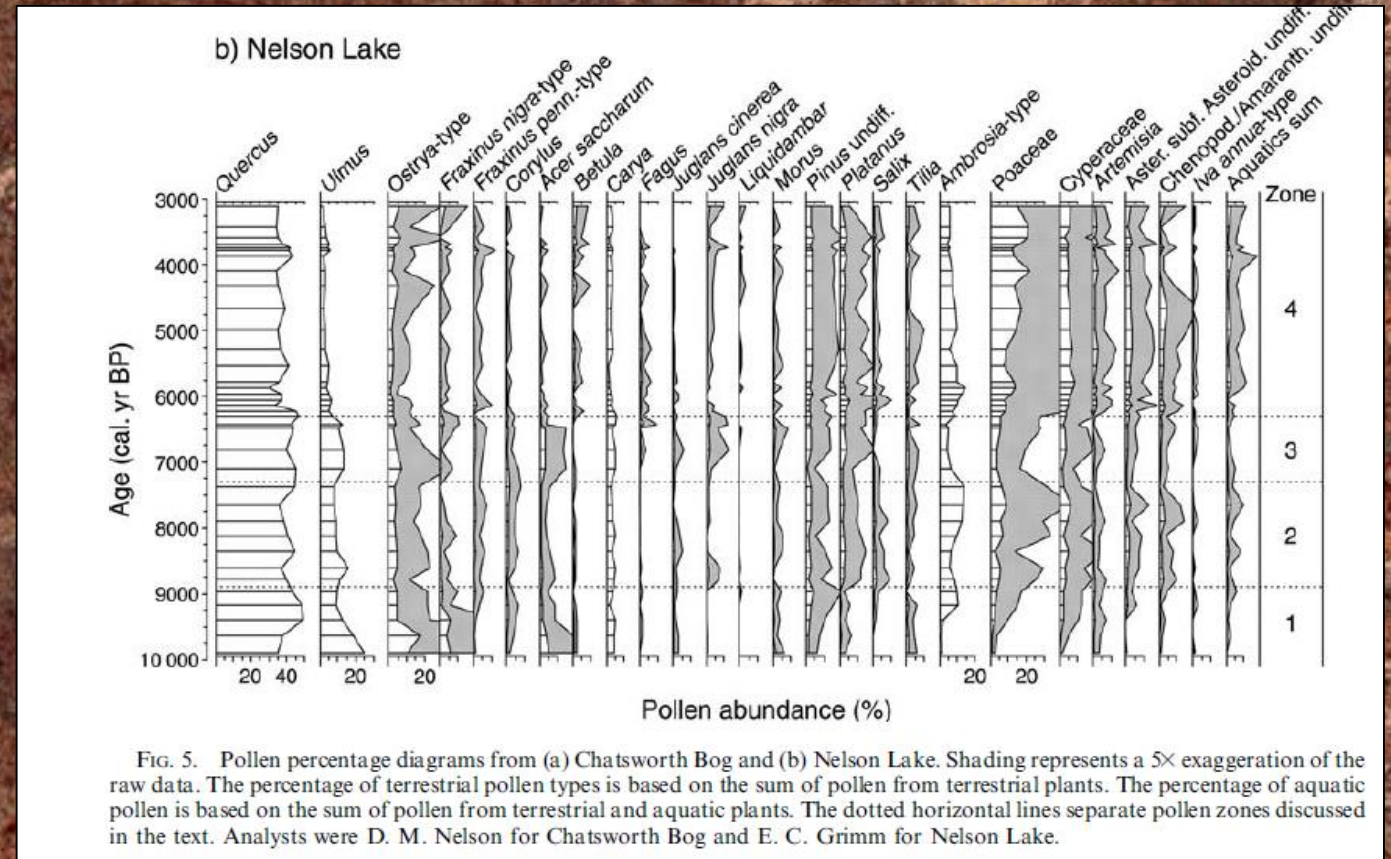


**Palynological Studies
of Chatsworth Bogs,
and Nelson Lake, IL**



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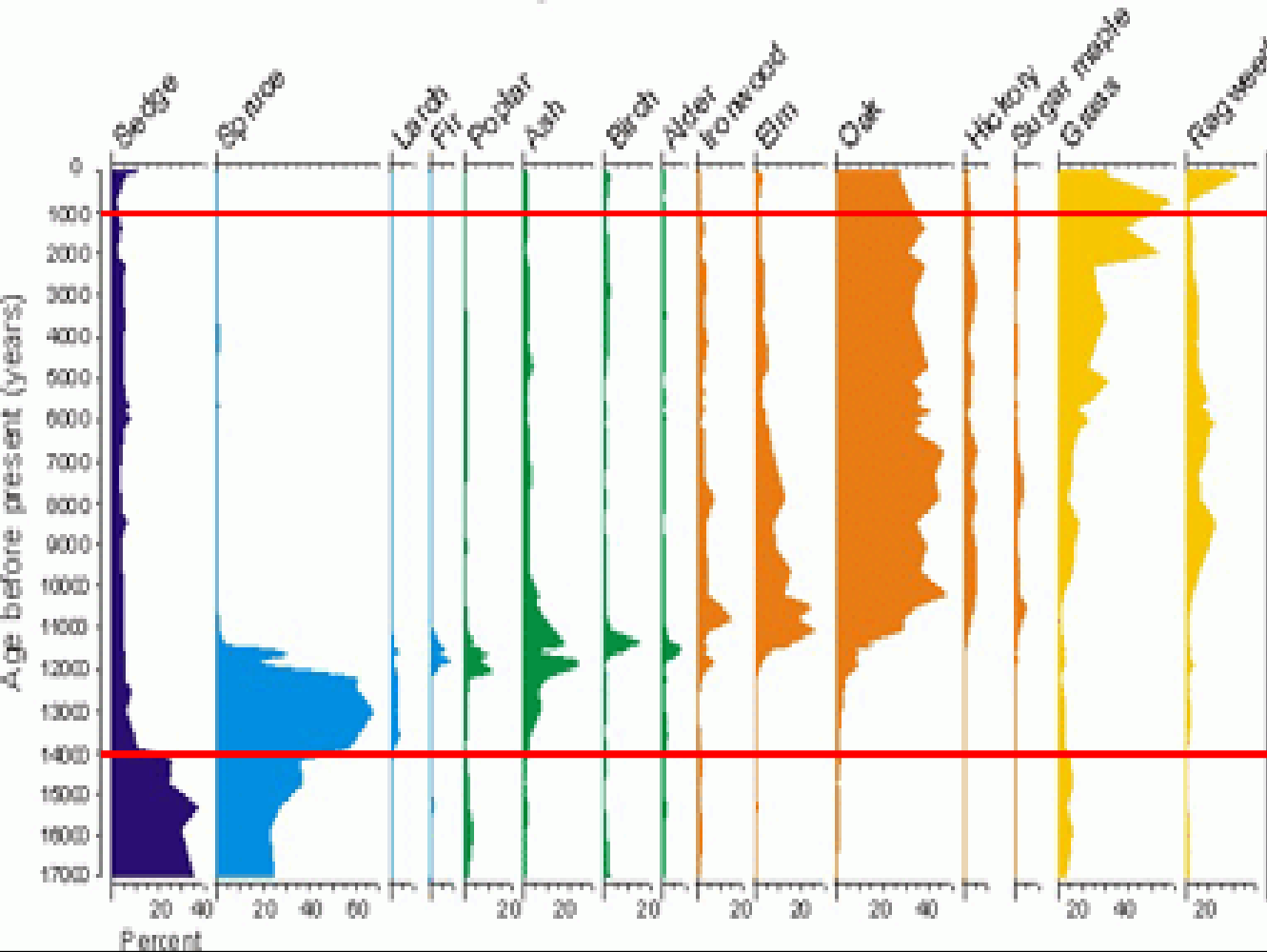
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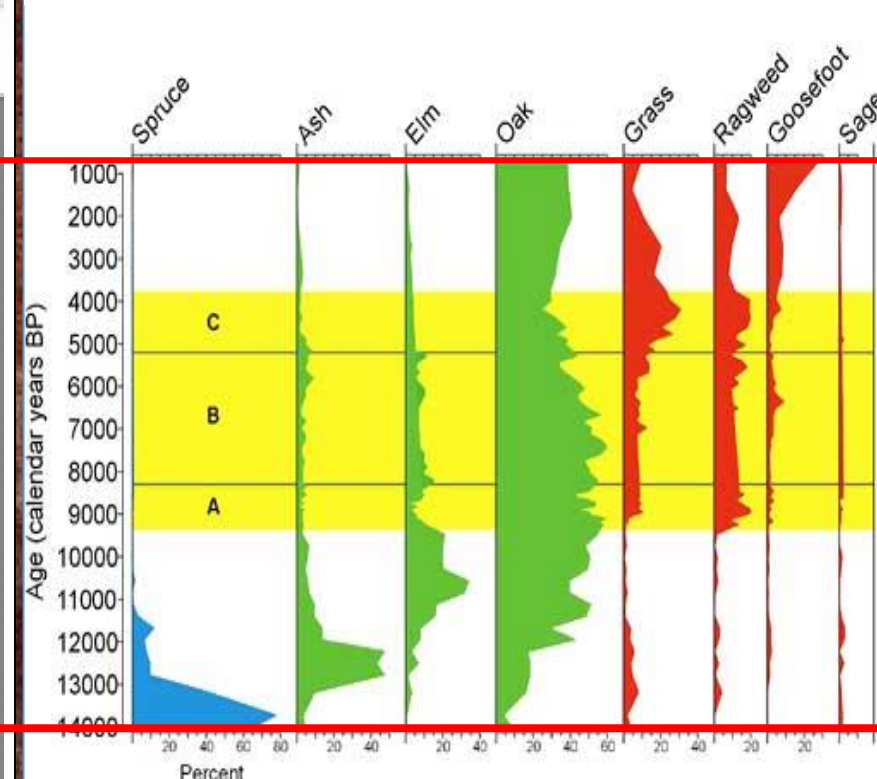
2006 Nelson et al. "The Influence of Aridity and Fire on Holocene Prairie Communities in the Eastern Prairie Peninsula." *Ecology* 87(10), pp 2523-2536.

Taking core samples
At Nelson Lake

Nelson Lake, Kane County, Illinois



Chatsworth Bog, Livingston County, Illinois



Adjusted for
differing
time scales

* Sage = Artemisia

Tundra post 18,000 years B.P. supplanted by black ash and spruce swamps, then
Spruce (boreal forest) 14,000-13,000 B.P.



**Elm-Ash Forest (temperate deciduous forest):
13,000-8,500 YBP**



Dalton fluted projectile point base



20,000

15,000

10,000

5,000





A cooler wetter period causes the deciduous forest to again assert.
Decrease in grasses 7,500-6,200 YBP

20,000

15,000

10,000

5,000

6,200 YBP: Drier, warmer climate and prairie grassland becomes dominant ecosystem

Note:
Lack of
good
Phytolith
data sets

Bison arrive
~4,450 years
before present

20,000

15,000

10,000

5,000



Glacier Recedes

Local environment over the past 18,000 (18K) years
(Dates approximate due to transitional periods)



18K

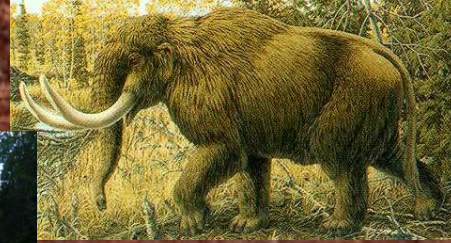
16K



Subarctic Tundra
~18,000-14,000 YBP



14K



Spruce Forest
~14,000-13,000 YBP

People Arrive
~10,000-9,500 YBP



12K



Ash-Elm Forest
~13,000-8,500 YBP

10K



Prairie patches
amongst
hardwood forest
~8,500-7,500 YBP

8K

Prairie contracts
Elm Forest Dominant
~7,500-6,200 YBP



6K

Bison Arrive ~ 4,450 YBP

4K



~6,200 YBP
Tallgrass Prairie

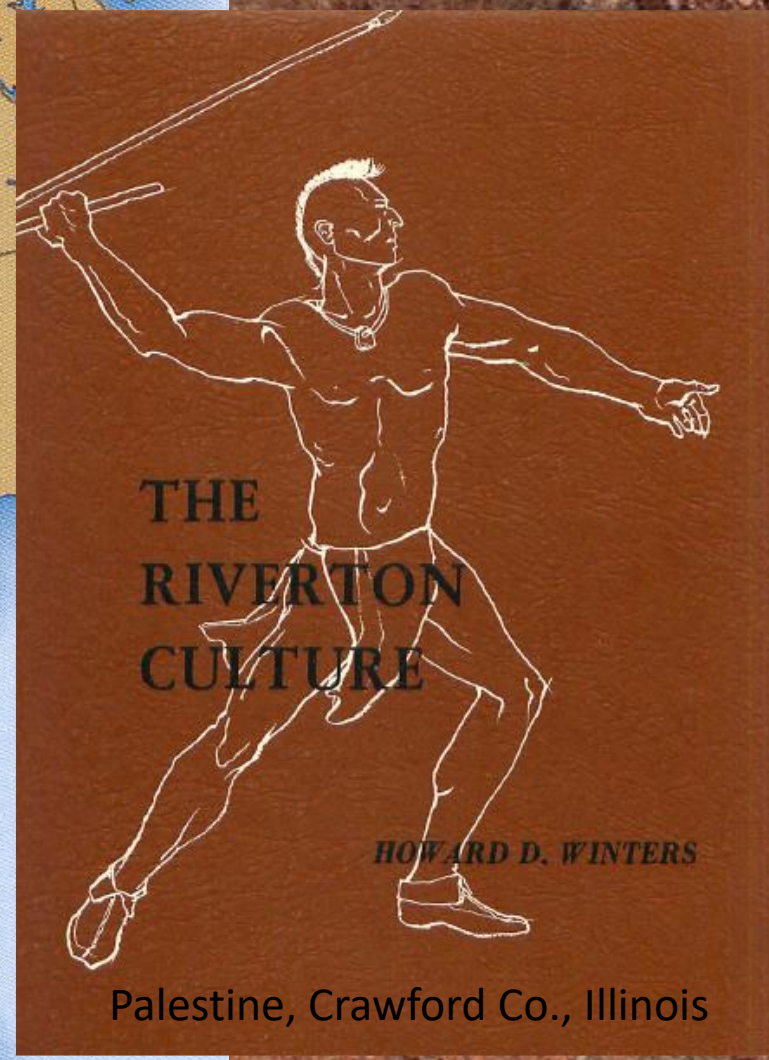
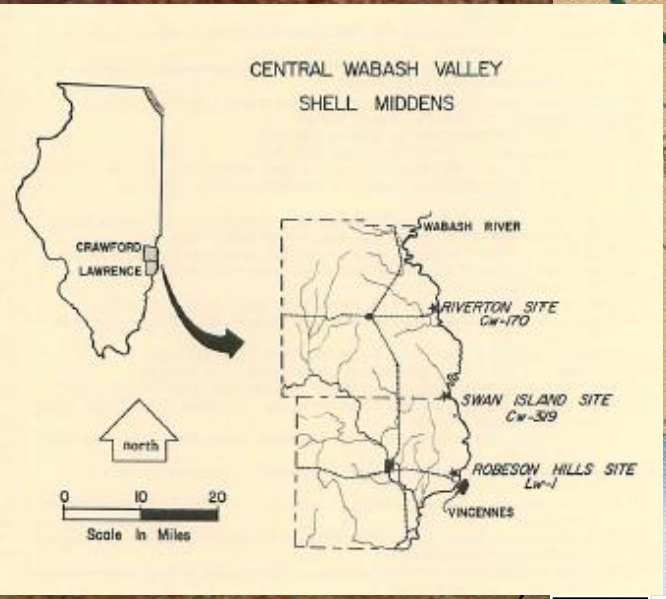
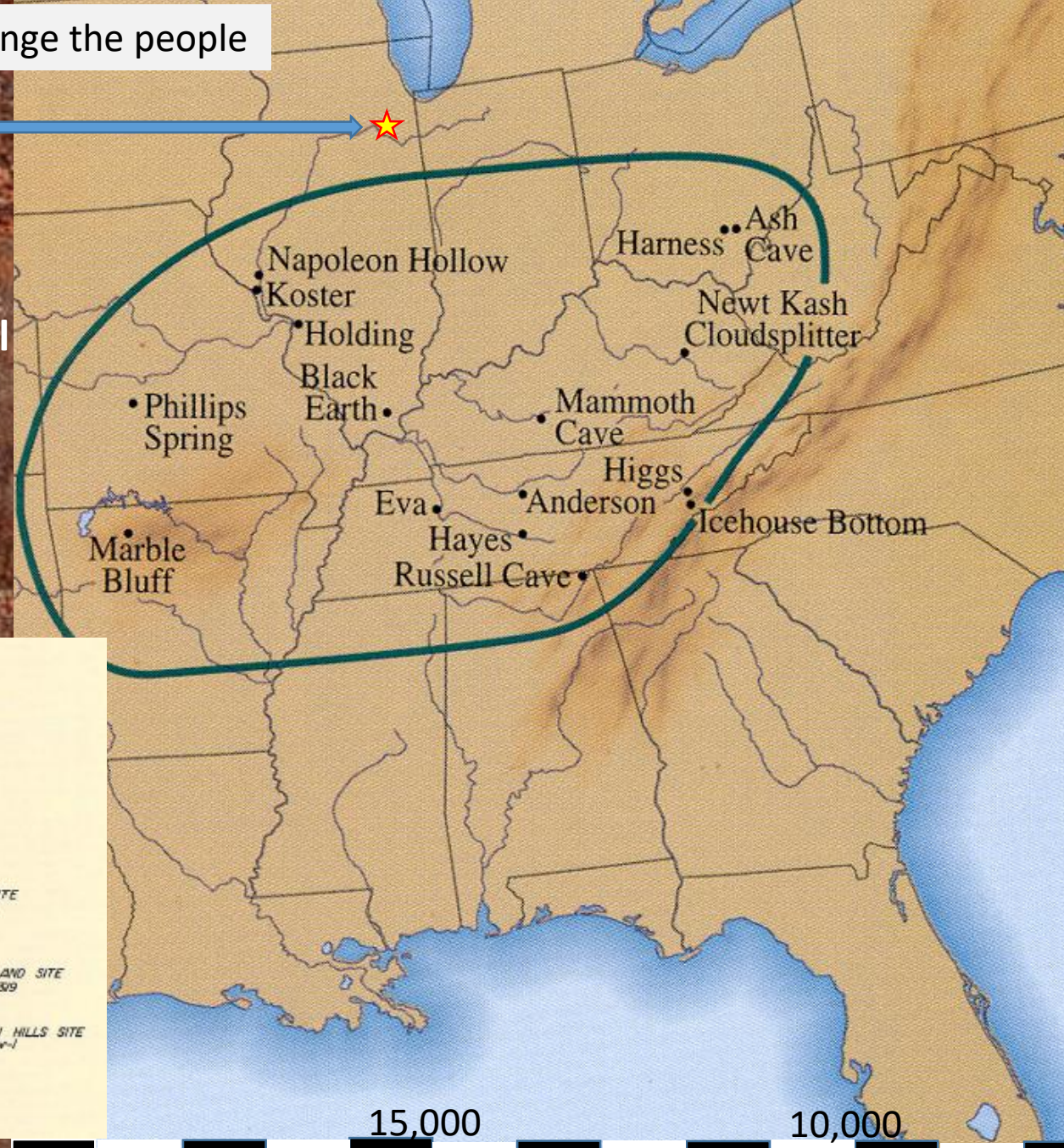
Bison Depart
~ AD 1808

2K

Environment seems to change the people

Midewin →

The Eastern Agricultural Complex



Palestine, Crawford Co., Illinois



Pre-contact Food Crops

Cultivated 5,000-3,800 years before present

Favoring Disturbed Earth
(fire?)



Chenopodium berlandieri (goosefoot or lambs quarters)



Iva Annua
(Marsh elder)
*not found on
Midewin



Cucuribata
Pepo
Ovifera
(bottle
gourd)



Helianthus Annus (Sunflower)

Pre-contact Foods

Cultivated before 2,000 years before present



Polygonum Erectum
(Erect Knotweed)



20,000



*Phalaris Caroliniana**
May Grass (grains top, plant btm)



15,000



Hordeum Pusillum
(Little Barley)

*not found on Midewin

10,000

5,000



Feral

Domesticate

Pre-Columbian population estimates in modern U.S.
range on the low side between 2 and 3.8 million
By 1800 the population was below 1 million.

Marsh Elder



Sunflower



Squash



*But Northern Illinois was still comparatively a wilderness. But it was a beautiful wilderness, consisting largely of meadow-like, flower-decked prairies, with heavy forests skirting the streams, and forming here and there island groves, breaking in upon the ocean-like monotony of the sea of verdure[.] **The country looked as if it had been cultivated in some far past, so far, that the people and their dwellings, and all vestiges of their occupation had perished.***

George Woodruff, 1883.

Fifty Years Ago

Joliet Republic and Sun Print, Joliet. P.17

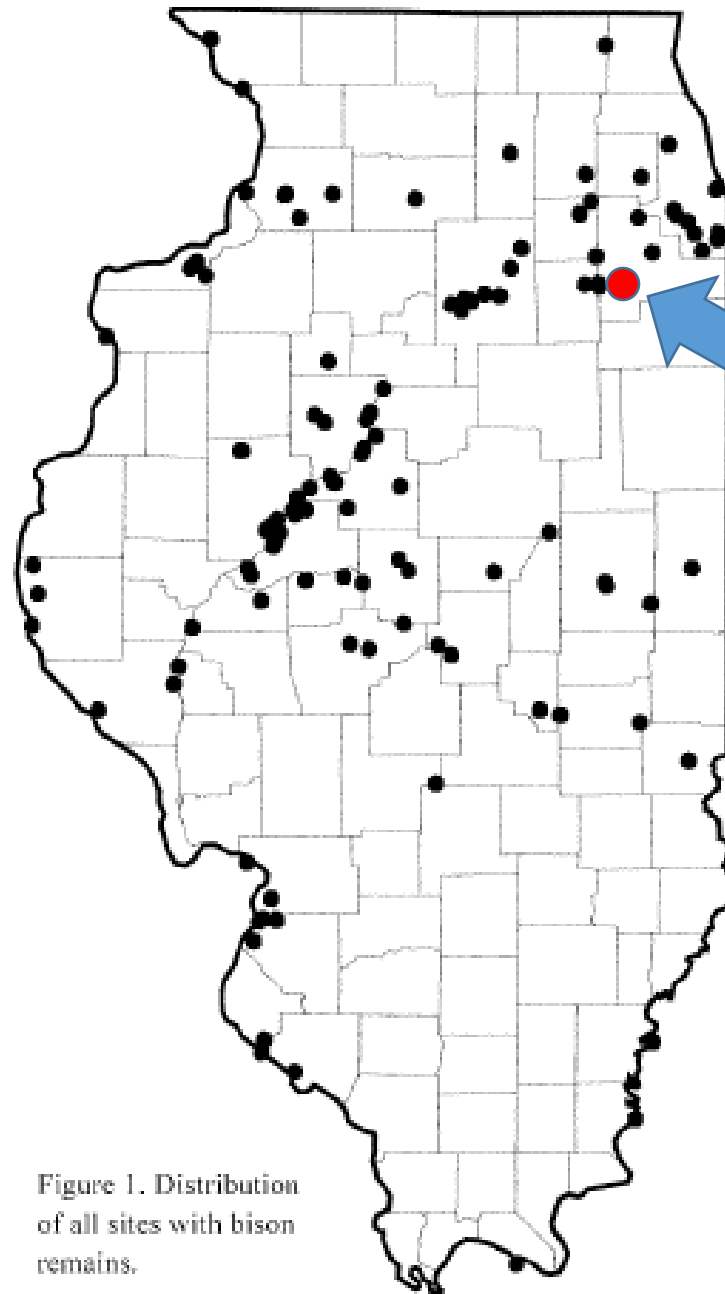
Enter the bison...

Earliest bison remains in Illinois are ^{14}C dated samples from Whiteside County (on the Mississippi). The oldest date to $8,020 \pm 40$ Years Before Present (YBP). Next oldest dated samples approx 4,450 YBP, nearly 2,000 years after tallgrass prairie became the dominant ecosystem, and 5,500 years after the first evidence of people resident on the land of Midewin.

McMillan 2006



133 Sites with bison*
In Illinois:
66 Paleontological
67 Archaeological*
*not counting Midewin



Midewin

Figure 1. Distribution
of all sites with bison
remains.

McMillan 2006

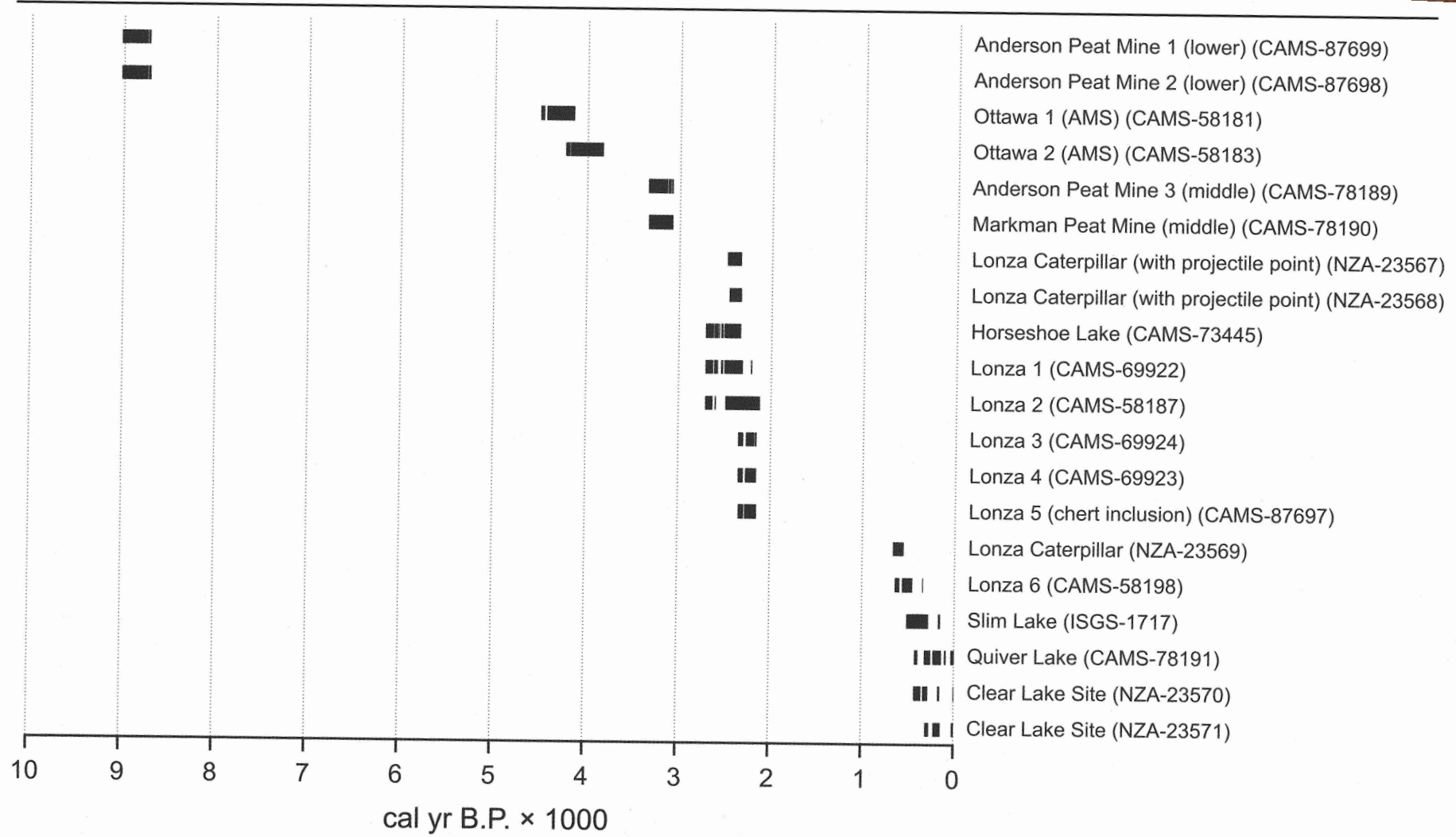


Figure 11. Graphic presentation of radiocarbon dates.

Evidence suggests a episodic small population present on the Grand Prairie since at least 4,450 Years Before Present (YBP) and expanding greatly after the early 1600s.

Compared with the great herds of west of the Mississippi, the buffalo to the east were hardly more than stragglers. Ironically By the late 1500s, man created the niche that permitted the buffalo to enter the East. By the 1820s man destroyed them.

Belue 1996

Increase in bison population corresponds to Little Ice Age (with lag time) and steep decrease in human predator population

Native Americans selectively burned the prairie, practicing horticulture and agriculture, and probably flushing game.



"Prairie Meadows Burning"

By George Catlin, 1861-69

National Gallery of Art,
Washington, DC

Fire as a technology

Deliette and LaSalle in the 17th Century, commenting on pre-horse Native Americans, and Nicholas Perrot in the Mid-Nineteenth Century note similar trapping strategies:

They assemble in great numbers and set fire to grass all round, with the exception of a few passages which they leave open, and at which they station themselves with their bow and arrows. In attempting to escape from the fire, the cattle [bison] are thus compelled to pass by these Savages, who sometimes kill as many as 200 in a single day.

Quoted in Markman 1991