

BOOTHEEL<sup>250</sup>

Celebrating Southeast Missouri,  
America250, and the Semiquincentennial.

Bootheel Youth Museum  
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# Southeast Story

By A. J. Hendershott

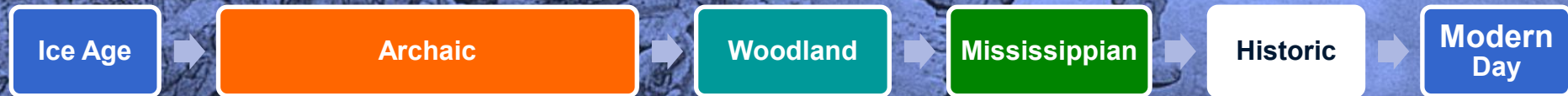




# Connecting With Time

Ice Age to today

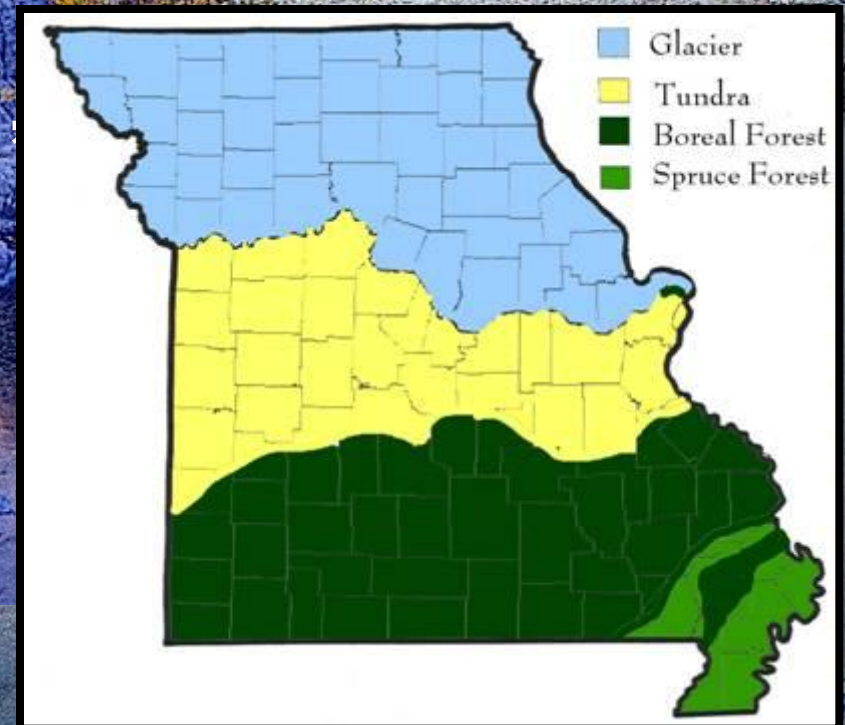
- Climate shaped vegetation patterns
- People shaped the land too





- Glacier melting
- Tundra & Boreal forest (spruce dominant)
- Lowlands, modified Boreal forest (aspen, alder, fir, pine, tamarack, oak, willow, buttonbush)

**Ice Age Climate:**  
15,000+ years ago

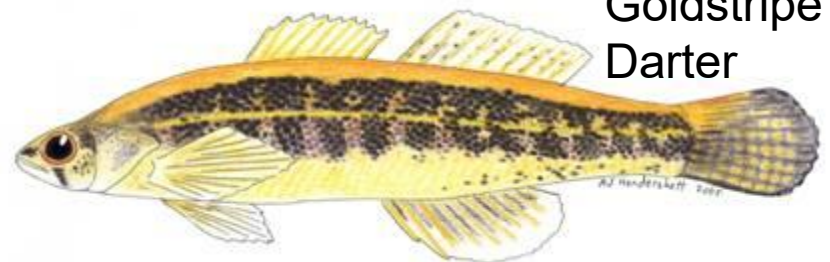




# Post Ice Age: 15,000 years ago

- Ozarks and glaciated area – patchwork of grassland, oak/hickory and declining boreal forest
- Poplar/beech forest in SE MO (goldstripe darter)
- Lowlands become oak/willow forest

Beech tree

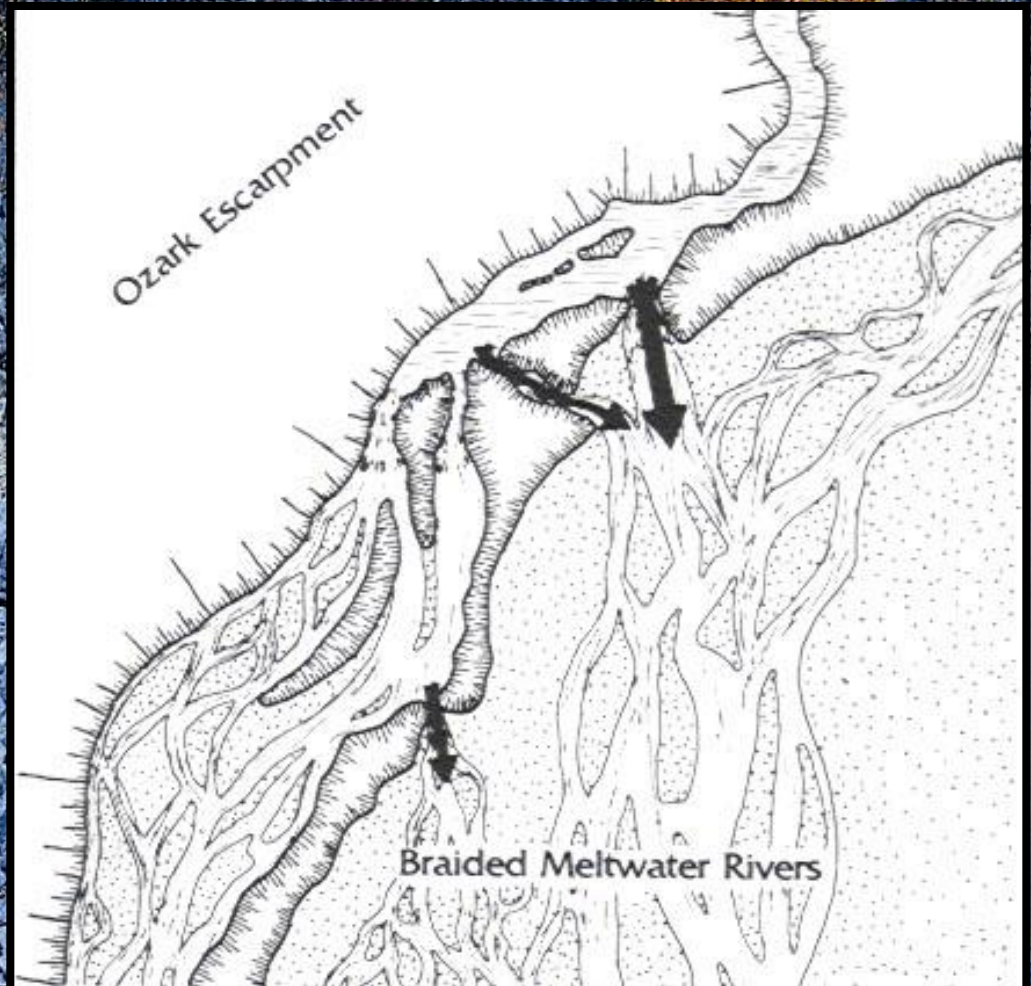


Goldstripe  
Darter



# Post Ice Age: 15,000 years ago

- Mississippi River jumps the Advance gap due to ice age mega floods





# Post Ice Age: Paleo Indian

9,500 years ago

- **Mississippi River jumps Thebes gap**
- **Spring cavefish cut off**



Spring Cavefish





# Post Ice Age Leftovers:

9,500 years ago

- Ice age remnants still exist around MO



Four-toed Salamander



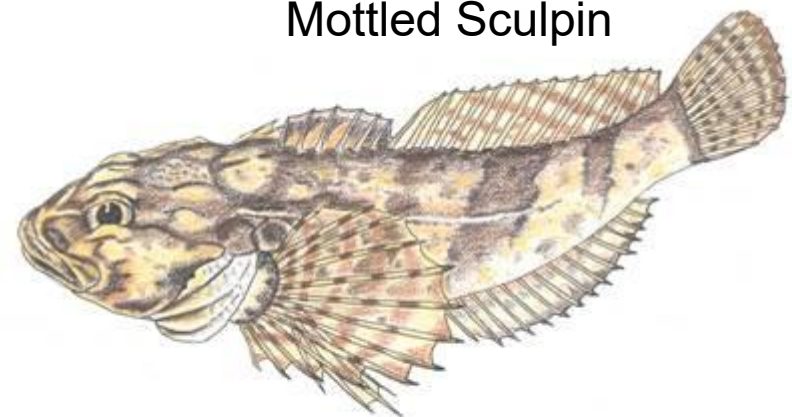
Soapweed



Wild Sasparilla



Ground pine (clubmoss)



Mottled Sculpin



# Post Ice Age: Man Moves In

- 10,000 B. C.  
(12,000 years ago)
- Big game hunters
- Nomadic
- No farming
- Wild food gathering

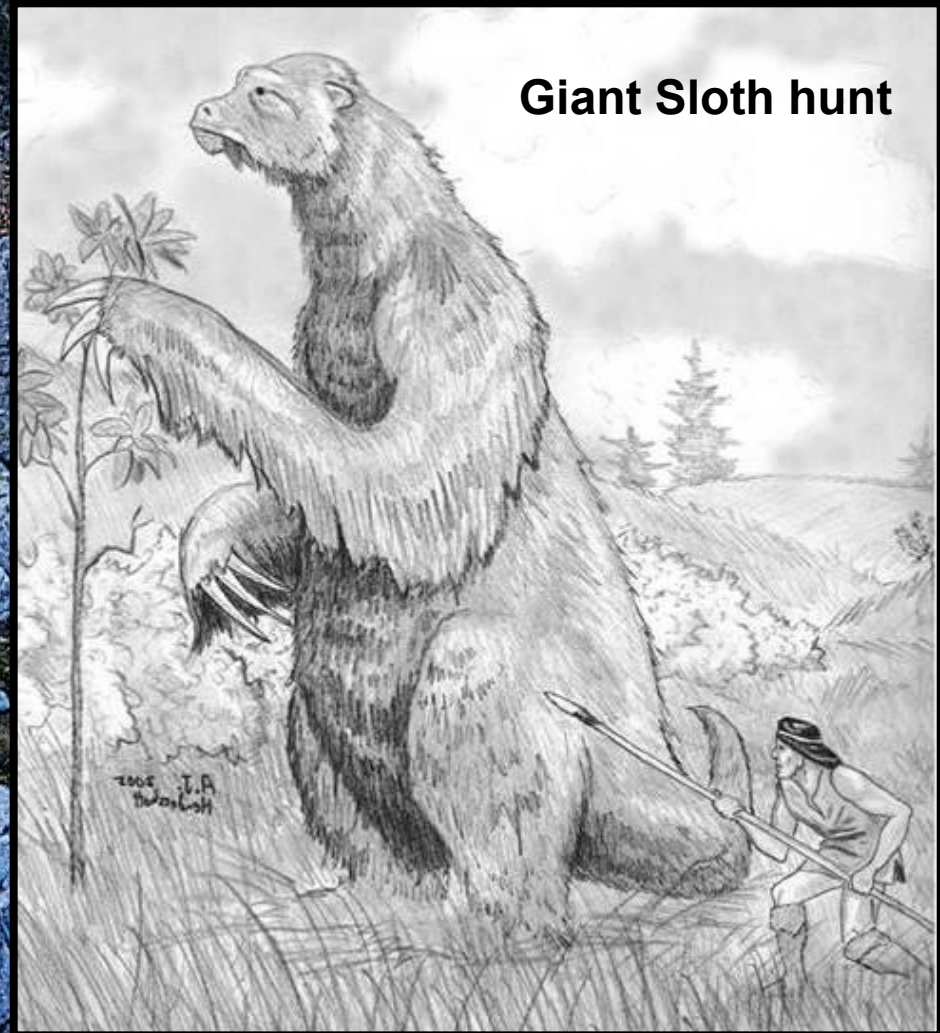


Big game hunter using a spear thrower



# Post Ice Age: Hunting

- Giant ground sloth were good prey: lots of meat, powerful but not built for speed.
- They were one of the first Ice age mammals to wipe out
- Then what do you eat?





# Post Ice Age: Hunting

- Switch to the next safest & least difficult thing to hunt . . . So to speak
- These large elephants could inflict **major** damage.

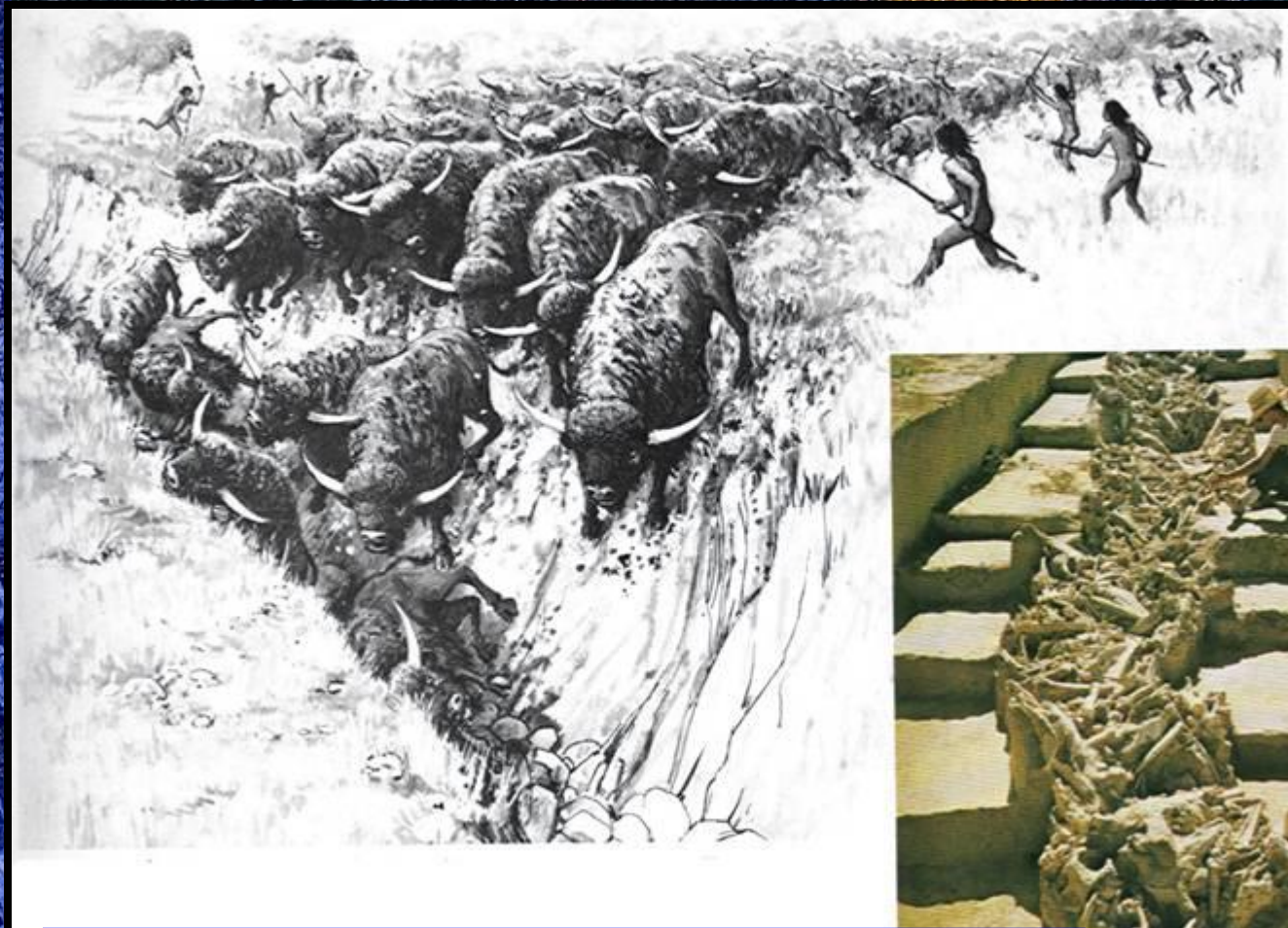


**Mastodon hunt**



# Post Ice Age: Hunting and Extinction

- 2,000 years after man reaches N. America all big animals disappear
- Same pattern on every continent
- Part of the problem was lack of conservation
- Result: Big game culture vanishes

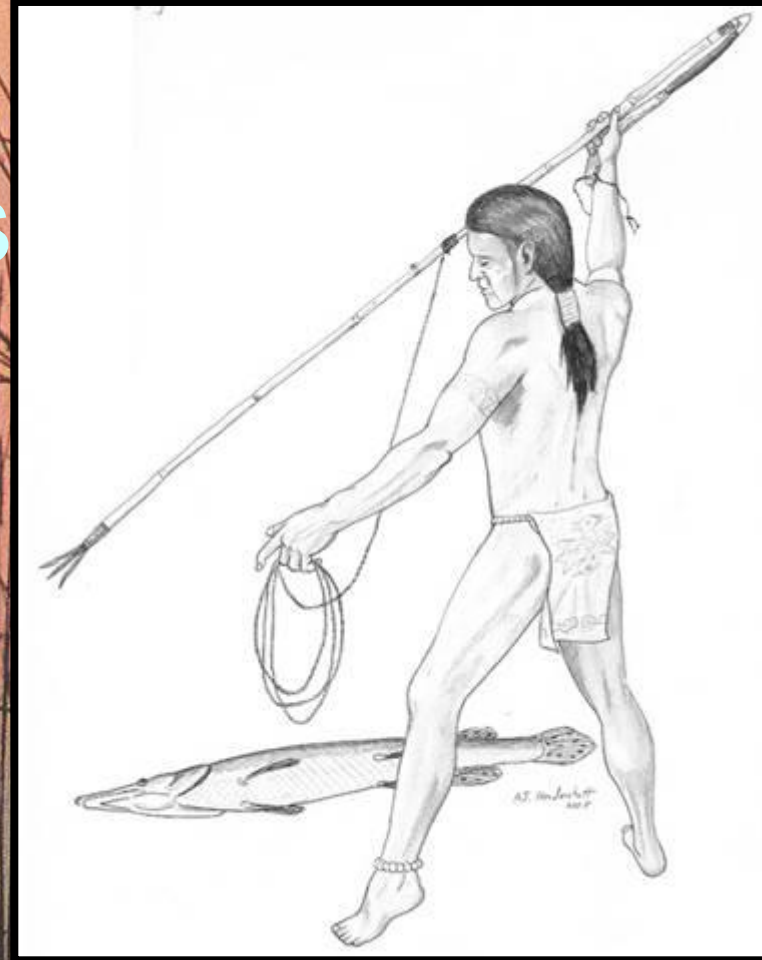


Bison drive and resulting archeological dig



# Archaic Period: Changing Climate Changing Resources

- The Ice age is over
- New way of living required
- Shifting environmental zones
- Changing cultural groups –nomadic ways not mandatory

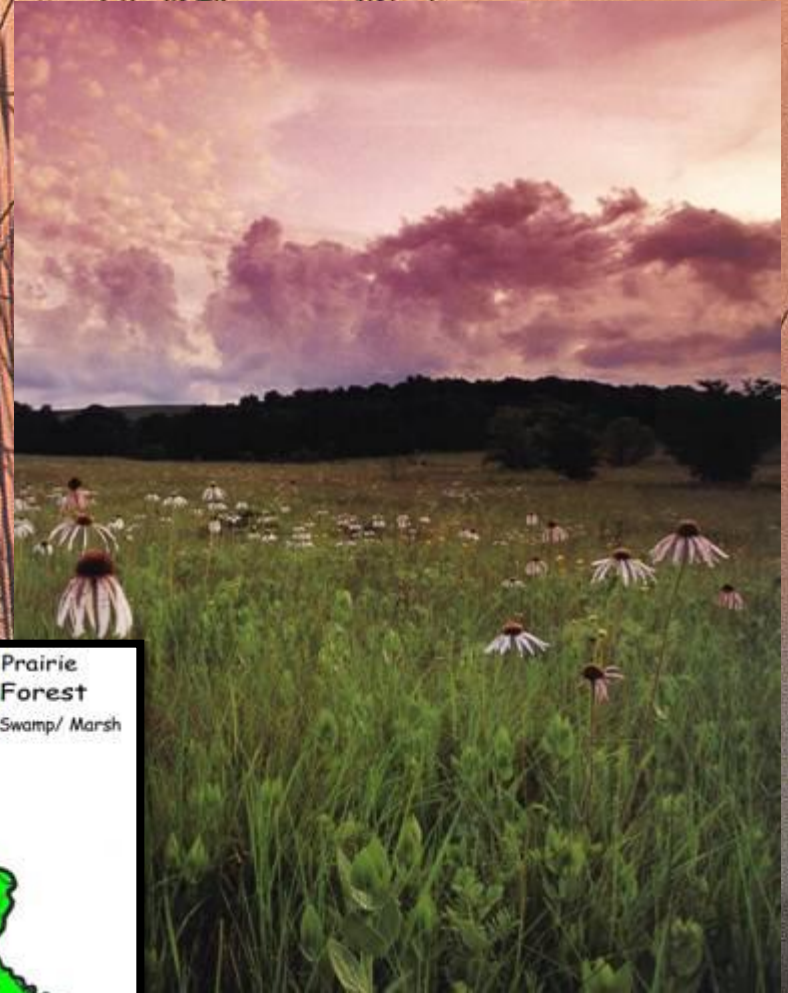
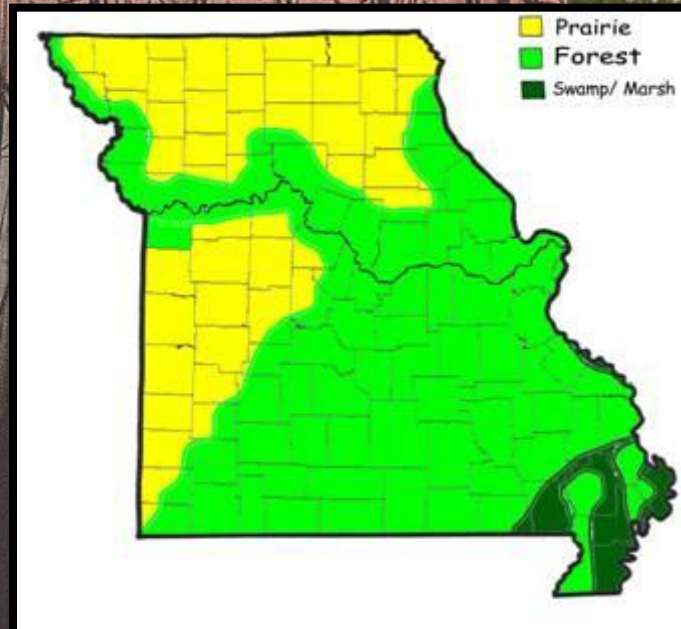


Atlatl used to spear fish



# Early Archaic Habitat 8,000-6,000 B.C.

- Prairie dominates from the west
- Oak/ Hickory forests dominate from the south
- Warming trend with ample rainfall in Southeast Missouri
- Cypress/Tupelo forests well established





# Early Archaic Oak/Hickory Invasion

- Willow, ash and maple
- Can germinate in shade
- Not fire tolerant
- Oak, hickory and chinquapins
- Require full sun to germinate
- Fire opens the canopy





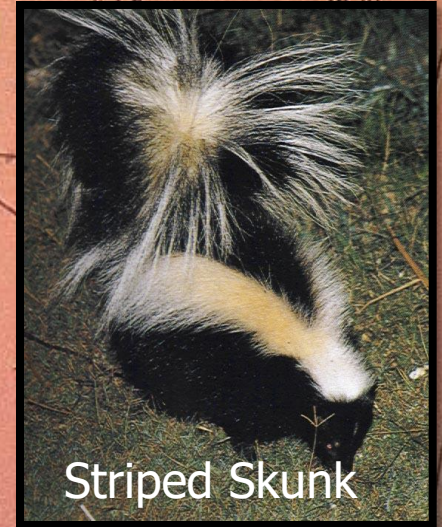
# Early Archaic Oak/Hickory Invasion



Timber Rattlesnake



Spotted  
Salamander



Striped Skunk



Chipmunk



Oak/ Hickory Savanna



Bobcat



Fox Squirrel



# Early Archaic: Swamp Invasion



Swamp Rabbit  
Ivory-billed Woodpecker



Tupelo Sinkhole Pond



Mud Snake

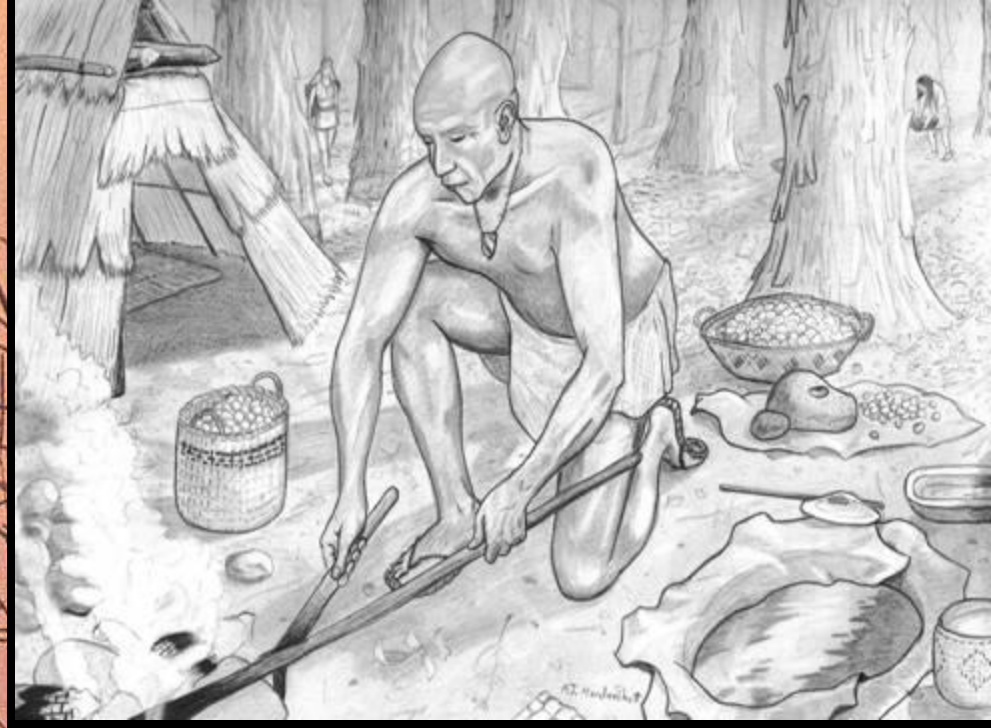


Lowland Slough



# Archaic People

- People move around less –seasonal camps
- Aquatic resources, mean easy food.
- Ease of food, means more time for crafts.
- With new resources, new material items can be made
- Basket making common
- Cooking done with clay stones



Hickory nut boiling in an Archaic camp



Plant cordage



Nut gathering



Clay cooking “stones”



# Archaic Menu

Blue Catfish



Dugout canoe construction

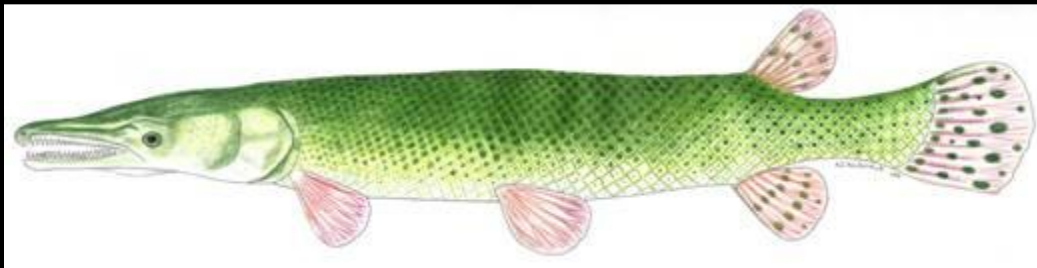


Archaic Fish Netting



Mussels

Alligator Gar





# Agriculture Begins to Bloom

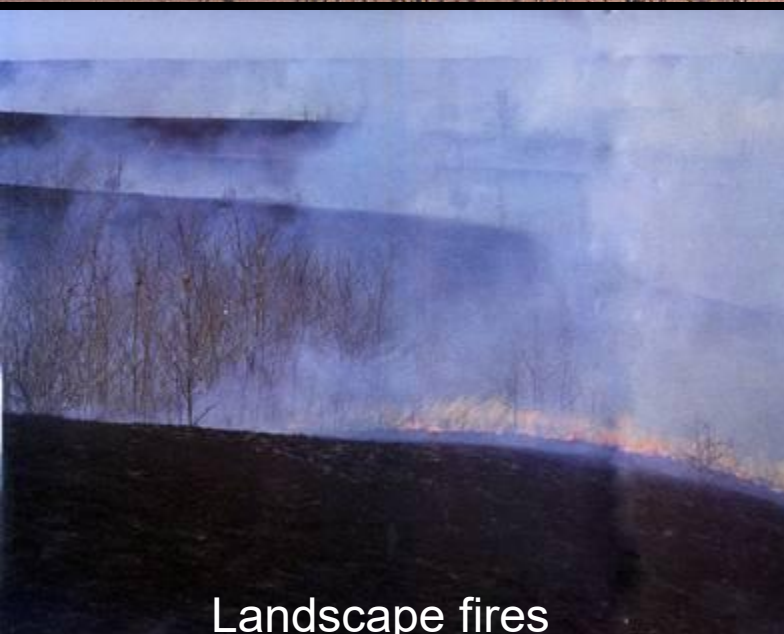
- Fire management led to more seeds for beneficial flowering plants and grasses
- Gourds were the first domesticated plant
  - Origin Africa!





# Middle Archaic Habitat 6,000 – 4,000 B.C.

- Things get dry and warm
- Prairie spreads in a big way
- Forest is confined to low lying areas near streams and rivers
- Fire is a tool used by natives to manage land



Landscape fires

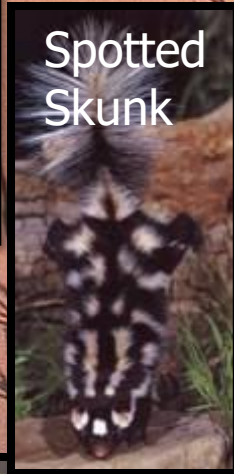




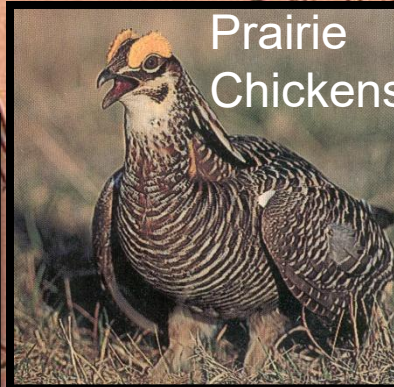
# Mid Archaic Prairie Invasion



Prickly Pear Cactus



Spotted Skunk



Prairie Chickens



Striped Scorpion



Badger



Topeka Shiner



Prairie Expanse



Rocky "glade" with prairie plants



Upland Sandpiper

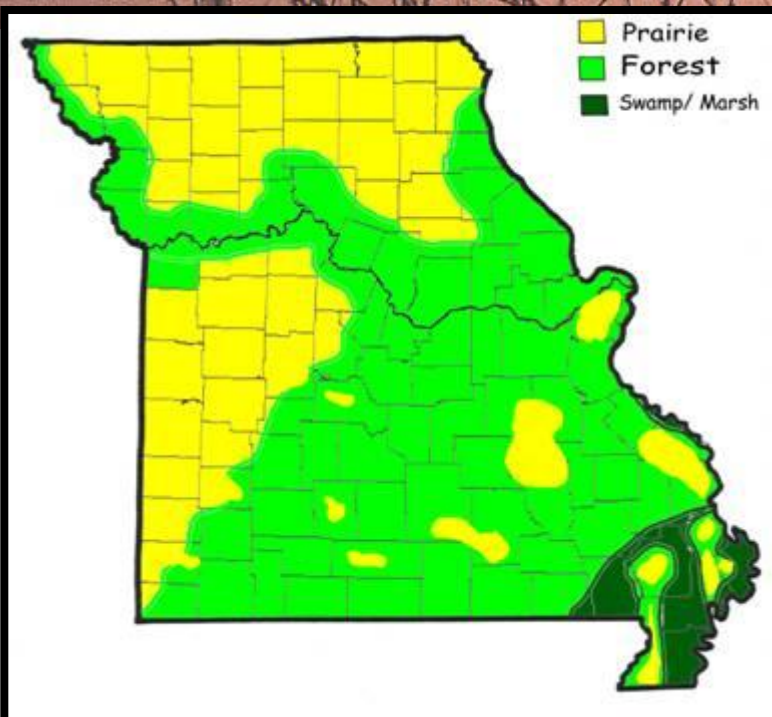


Bison



# Late Archaic Habitat 4,000 – 1,000 B.C.

- Rainfall resumes “typical” pattern
- Oaks and hickories expand again
- Shortleaf Pine forests invade Ozarks
- Prairie reduces to near historic distribution
- Plant and animal distributions are similar to present day





# Woodland Climate & Biota

- 1,000 B.C. to 700 A. D.
- Things look like present day
- Plant and animal distributions are similar
- Climate becomes a bit warmer and drier but nothing dramatic
- Fire use prevalent



Woodland Village



# Woodland People

- People settle in one place “sedentary”
- Agriculture gets going
- Pottery is developed and tempered with sand
- The bow is introduced to N. America
- Atlatl use declines



Woodland archer



Stump mortar



Cord wrapped  
paddle marking  
pottery



Planting seeds



# Woodland Farming

Sunflower  
Sumpweed  
Marsh elder  
Knotweed  
Goosefoot  
Maygrass  
Little Barley  
Black nightshade

Yum yum!



. . . Oh, gourds and squash too.



# Mississippian Period: 700 AD to 1300 AD

- Weather is similar to modern era - perhaps a bit wetter at first
- Cooler toward end
- Growing conditions are good
- Woodland culture sets the stage for Mississippian culture



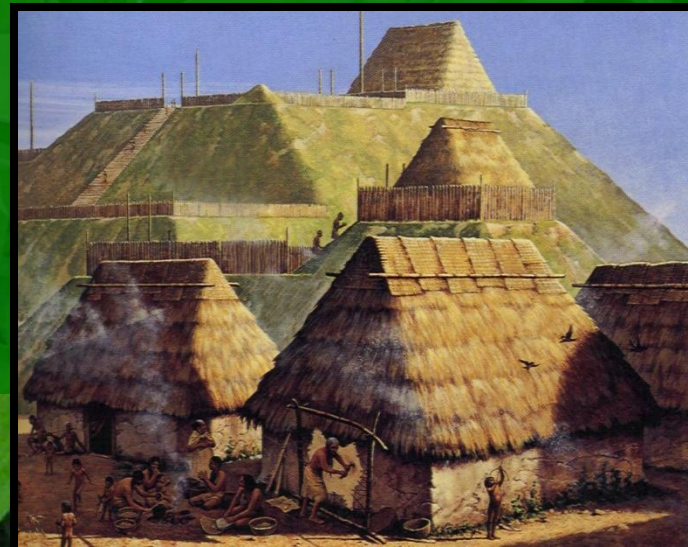
Copper plates found near  
Malden



# Mound Building Society

“... Even in the central Mississippi Valley where great amounts of maize were grown, the principal settlements were located right next to large backwater lakes and swamps. ... The central role of wetlands in development of chiefdoms ... deserves more attention than it has received.”

George R. Milner, 2004  
The Mound Builders





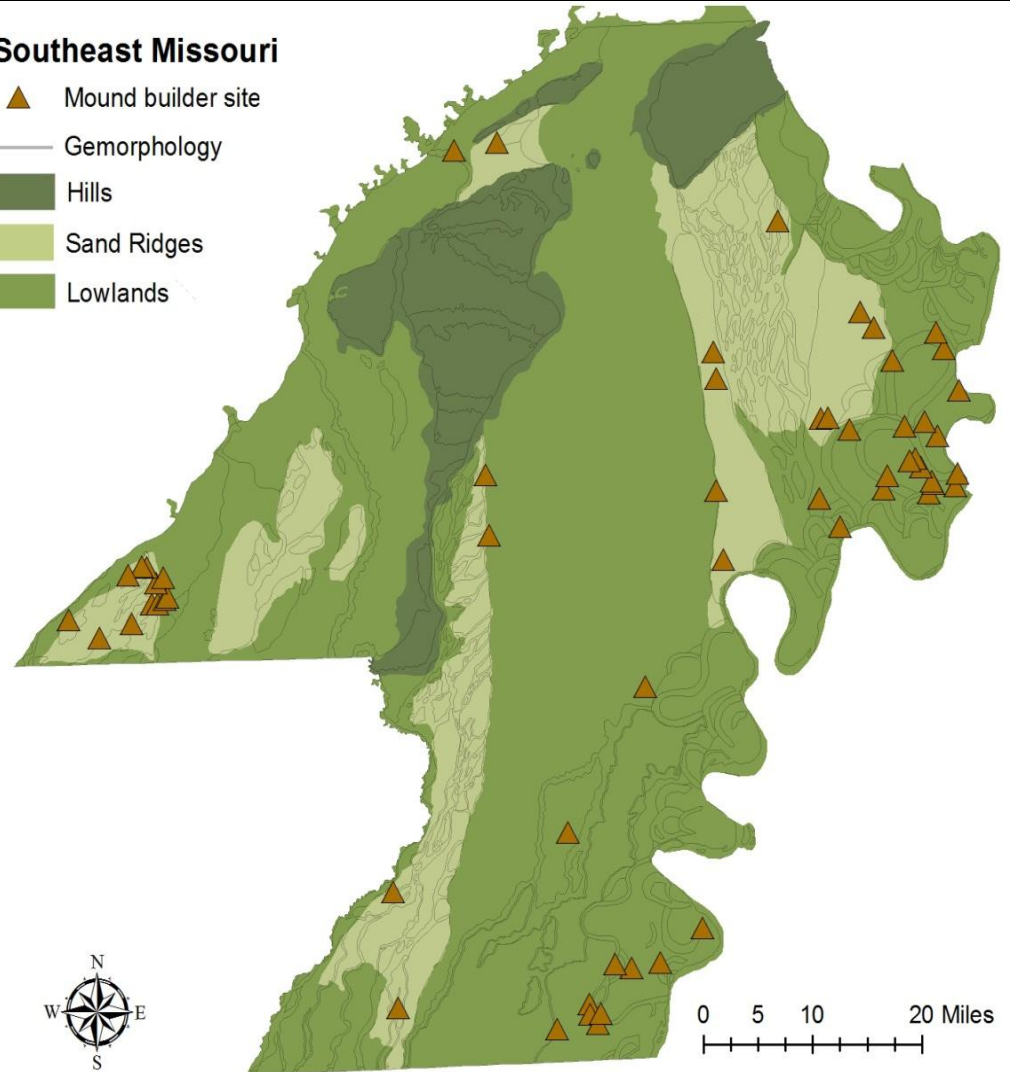
# Mississippian Period



Richwoods site  
Stoddard County

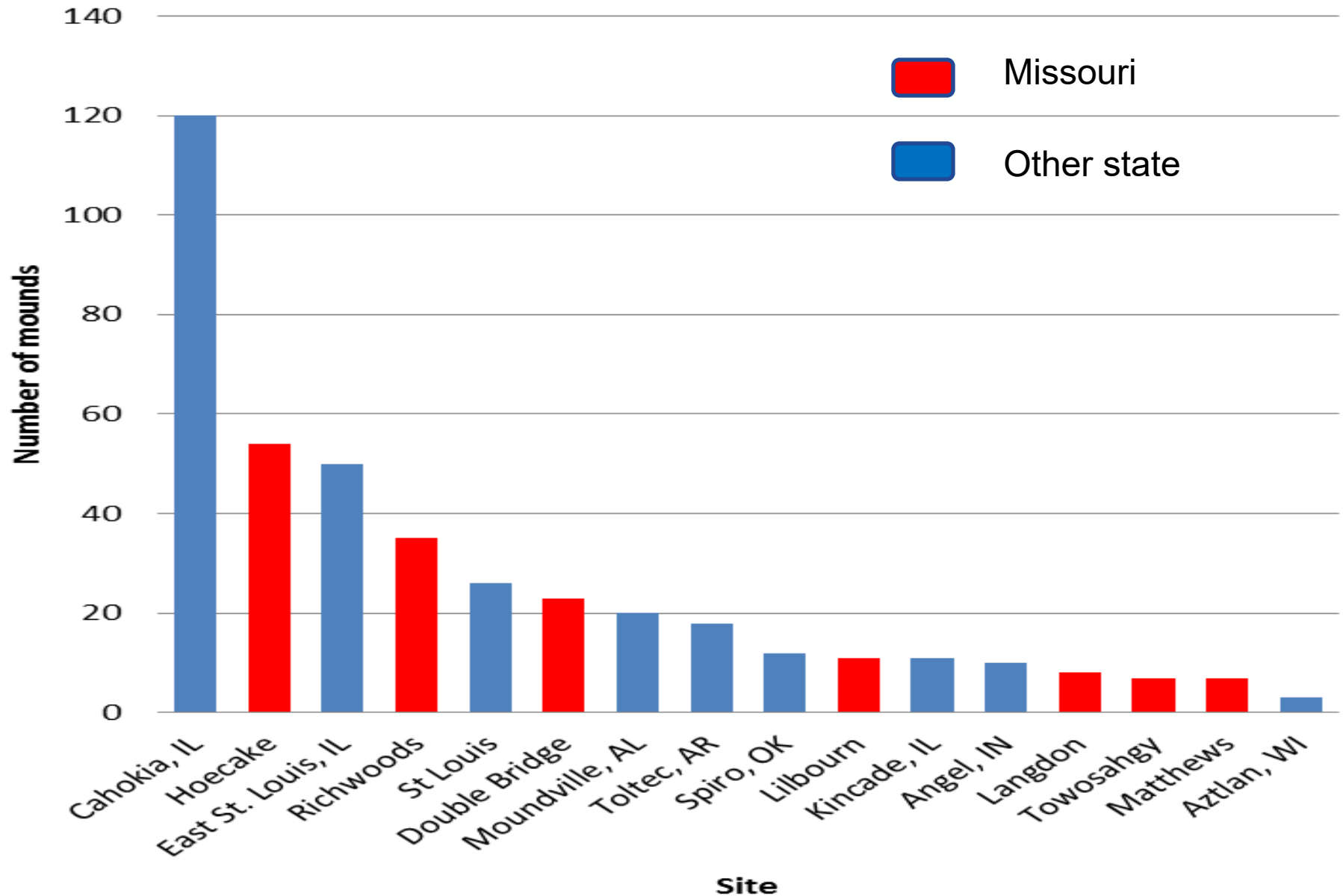
## Southeast Missouri

- ▲ Mound builder site
- Gemorphology
- Hills
- Sand Ridges
- Lowlands





# Moundbuilding Site Comparison for Mounds





# Mississippian Developments

- Farming is full scale
- Corn and beans are introduced (750 A.D.)
- Pottery tempered with mussel shells
- Hunting and gathering still common



Maize



Archer



Owl effigy bottle





# Mississippian Mound Builders

- Cahokia had 20,000 people
- Larger than London at the same time
- Larger than any city in St. Francois County
- This metropolis thrived and used natural resources from all over the continent



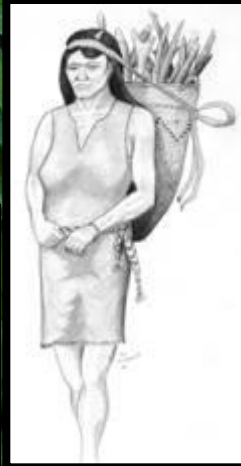
Metropolis of Cahokia 1150 A. D.



# Fuel (Heating & Cooking)

Tree felling  
with stone ax

- A family of four could use 1.5 tree tops a year
- 20,000 people needed roughly 5,000 fires to cook and heat
- Over a year this would total to 7,500 tree tops
- This equaled 22 tree tops consumed by the whole city everyday
- In 200 years 1.5 mil. tree tops would cover 8,200 football fields.
- That equals 13 square miles of deforestation



Mound building homes with fires  
burning



# Wooden Structures

- Early houses (700 A.D.) and stockade walls were made with large trees.
- The same structure in the civilization's peak (1,100 A.D.) used medium size trees.
- Identical structures in the twilight years (1,300 A.D.) are made of the smallest diameter trees.



Wattle and Daub house



# Result

- Lack of conservation was a fatal blow in loss of the mound building culture



From this . . .

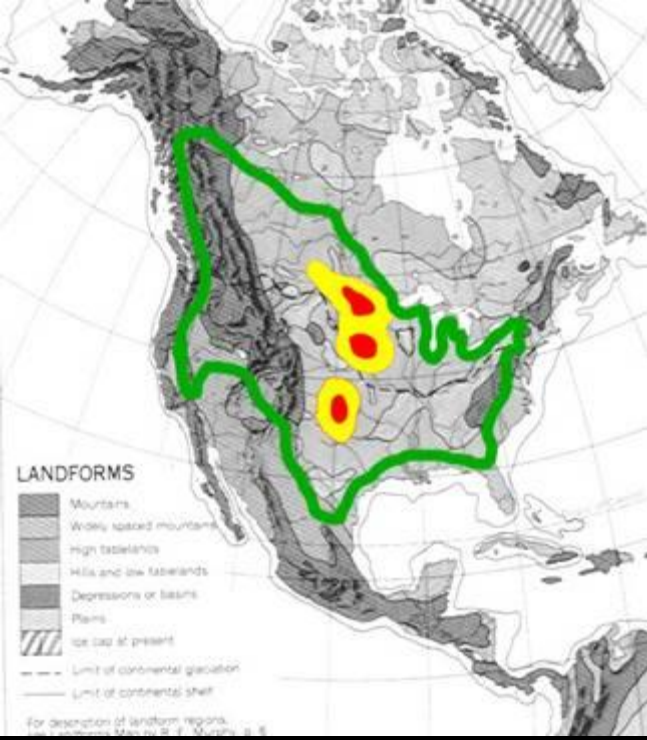


To This.



# Pre Columbus: 1400's

Bison and Elk  
Distribution



Bison

- Before Europeans visit North America  
Bison and Elk are restricted to isolated parts of the Great Plains (*red/yellow on map*)
- After Europeans visit  
90% of all Natives die from old world plagues
- Bison and Elk re-colonate North America (*green border on map*)
- Canebrakes form, bottomland forests develop, Wildlife species reach all time highs



Nina





# Protohistoric and Historic Periods: Tribes of Missouri



- Different tribes occupied different areas of Missouri
- Others passed through on forced relocations
- Cherokee, Delaware, Shawnee, Kickapoo, Sac, and Fox



# Missouri Late 1800s / Early 1900s

- Large scale logging and conversion to other land uses.
- Wood products used to fuel industrial revolution
- Market hunting to feed growing cities
- Few laws exist for resource harvest





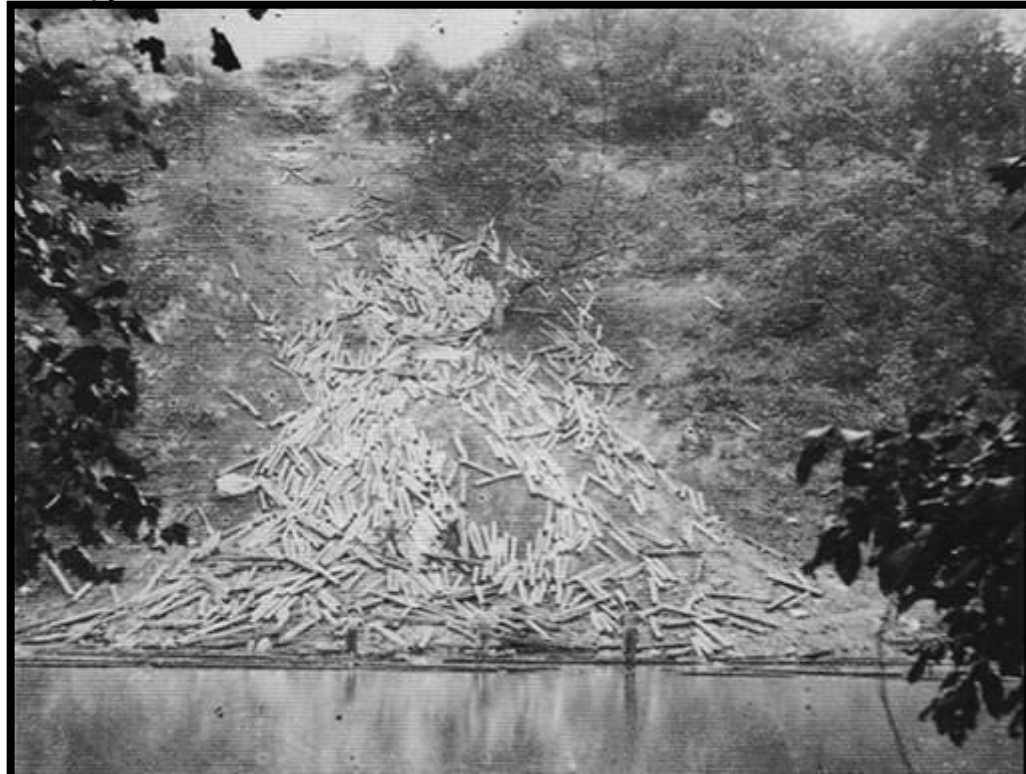
# Ozark Forests

- Cut without conservation
- Burned
- Failed attempts to farm
- Grazed



Logging town

Log slide



Cut, burned and grazed land





# Bootheel Forests

- 20 years behind the Ozarks
- Cut without conservation
- Successful attempts to farm
- Took about 30+years for drainage to be perfected. 1950's - 60's





- Market Hunting
- No regulations on harvest
- Result:

# Missouri Wildlife

- Declining species: Bison, Elk, Wolves, Turkey, Deer, Ducks, Bears, Geese, Herons, songbirds, and many more
- Extinction: Carolina Parakeets, Passenger pigeons



Carolina Parakeet

Market Hunter





# Lowland Fish Impact

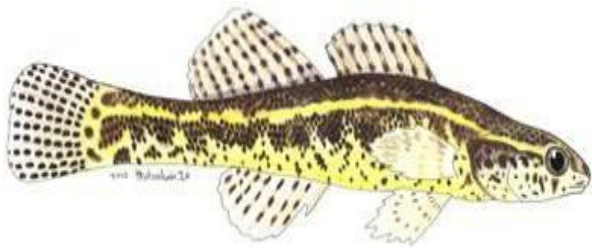
## Before Drainage

Current loving species  
uncommon

Open water sp.  
common

Raft sp. common

Veg. sp. common



Swamp Darter

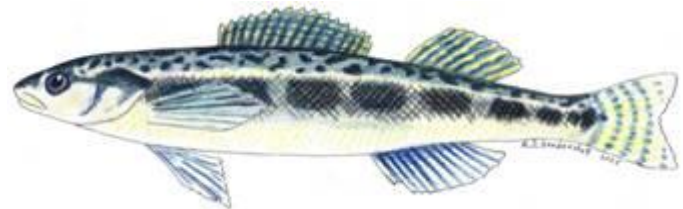
## After Drainage

Current species  
increase

Open water sp.  
Decrease some

Raft sp. decrease

Veg. sp. decrease  
some

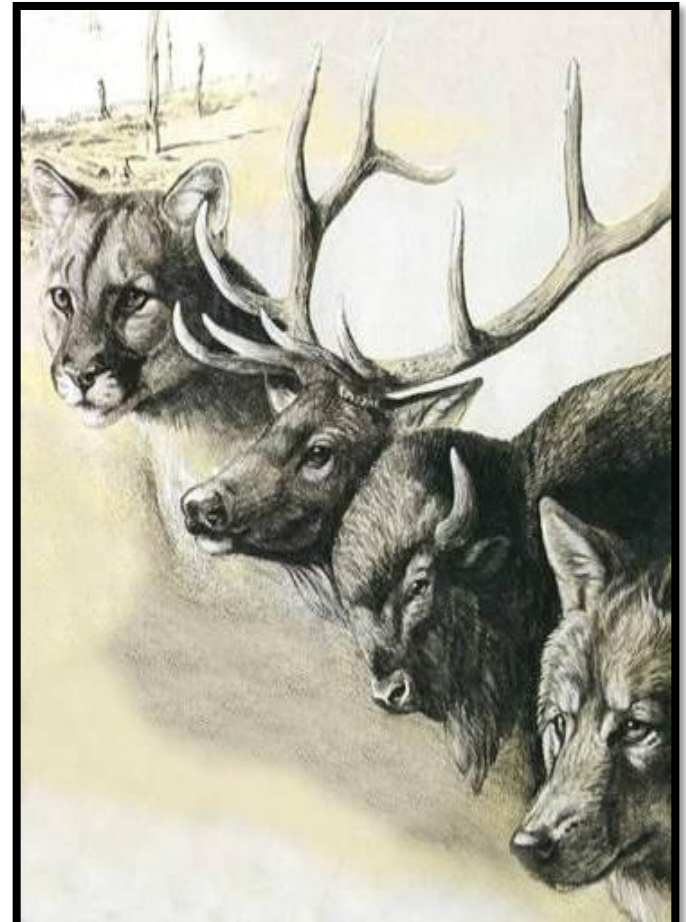


Blackside Darter



# State Impact

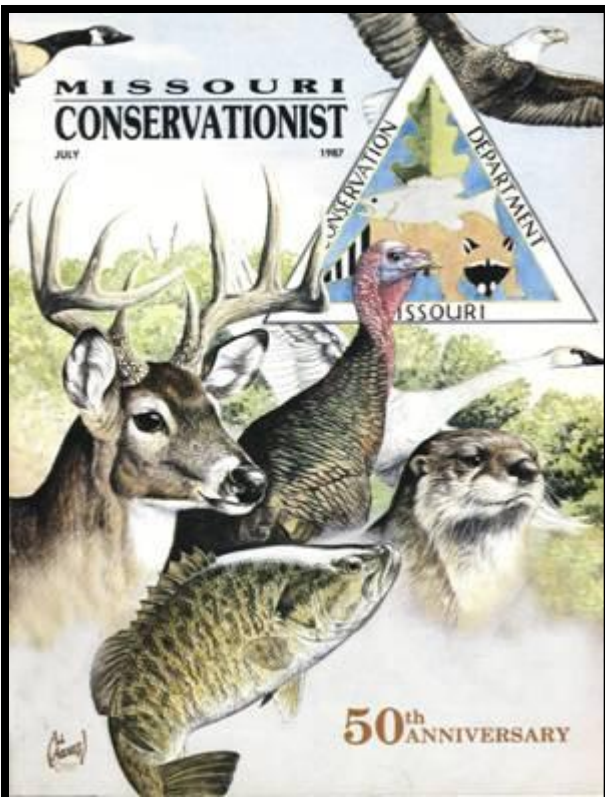
- Forest logging culture nearly vanished
- Market Hunting culture vanished
- Scars on the land are visible
  - **Red Oak Decline**
  - **Extinct species**
  - **Gravel choked streams**
  - **Some species still have not recovered**





# 1937 & 1976

- 1937 Citizens create Missouri's Department of Conservation
- 1976 Design for Conservation sales tax passed
- The result is a rebound of deer, turkey, beaver, forest land, eagles, and so much more





# Warm “Natural” Invaders

## Recent: 100 years or less

- Scissor-tail flycatcher
- White-winged doves
- Road runner
- Painted bunting
- Armadillo
  - *Prefer warmer climate*
- Cattle egrets (African Origin-hurricane migrant)
- Hurricane patterns can increase warmth in midwest

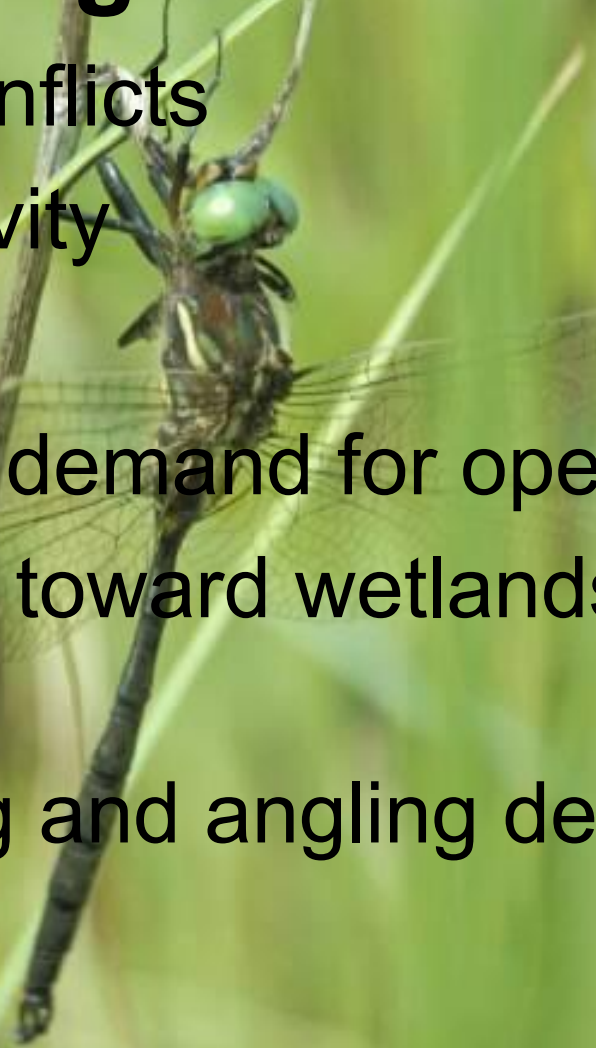


Scissor-tail flycatcher



# Today: Management Challenges

- Urban wildlife conflicts
- Loss of connectivity
- Keeping species
- Satisfying public demand for open space
- Public sentiment toward wetlands / T&E species
- Hunting, trapping and angling decline





# More to Write

- The land will endure more changes
- People are connected to the land
- By helping people connect with the land . . . .
- They will desire to steward it better.





Thank You for  
Attending tonight's  
program.

Add your name to our  
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program updates.

**BOOTHEEL250**  
Celebrating Southeast Missouri,  
America250, and the Semiquincentennial.



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### Programs

- |   |  |
|---|--|
| Thursday, Aug 21, 2025<br>Doors open at 6 p.m.  | <b>TBA Currently Recruiting</b><br>Do you know someone we should call, or a topic you'd like to see us explore? Message us on Facebook.  |
| Thursday, Sept 18, 2025<br>Doors open at 6 p.m. | <b>Butterflies and other Pollinators</b><br>Missouri Master Gardener Rebecca Roth, Malden alum and Monarch Butterfly Wrangler, will present a pollinator workshop and (depending on Mother Nature) a live release.                 |
| Thursday, Oct 16, 2025<br>Doors open at 6 p.m.  | <b>Memories from the Titanic</b><br>Living history performer Diana Moran presents Violet Jessup, Titanic survivor and first deck passenger maid.   |
| Thursday, Nov 20, 2025<br>Doors open at 6 p.m.  | <b>The Battle of Chalk Bluff</b><br>Paul Arnold is the definitive area expert on the Civil War. Paul Arnold, Richland R1 school district, shares the history of the skirmish over the St. Francis River just west of Campbell, MO. |
| Thursday, Dec 18, 2025<br>Doors open at 6 p.m.  | <b>A Hometown Dulcimer Christmas</b><br>Jon Jones has a deep passion for music that spans back six generations. Jon will play his own hand-crafted musical instruments.  |