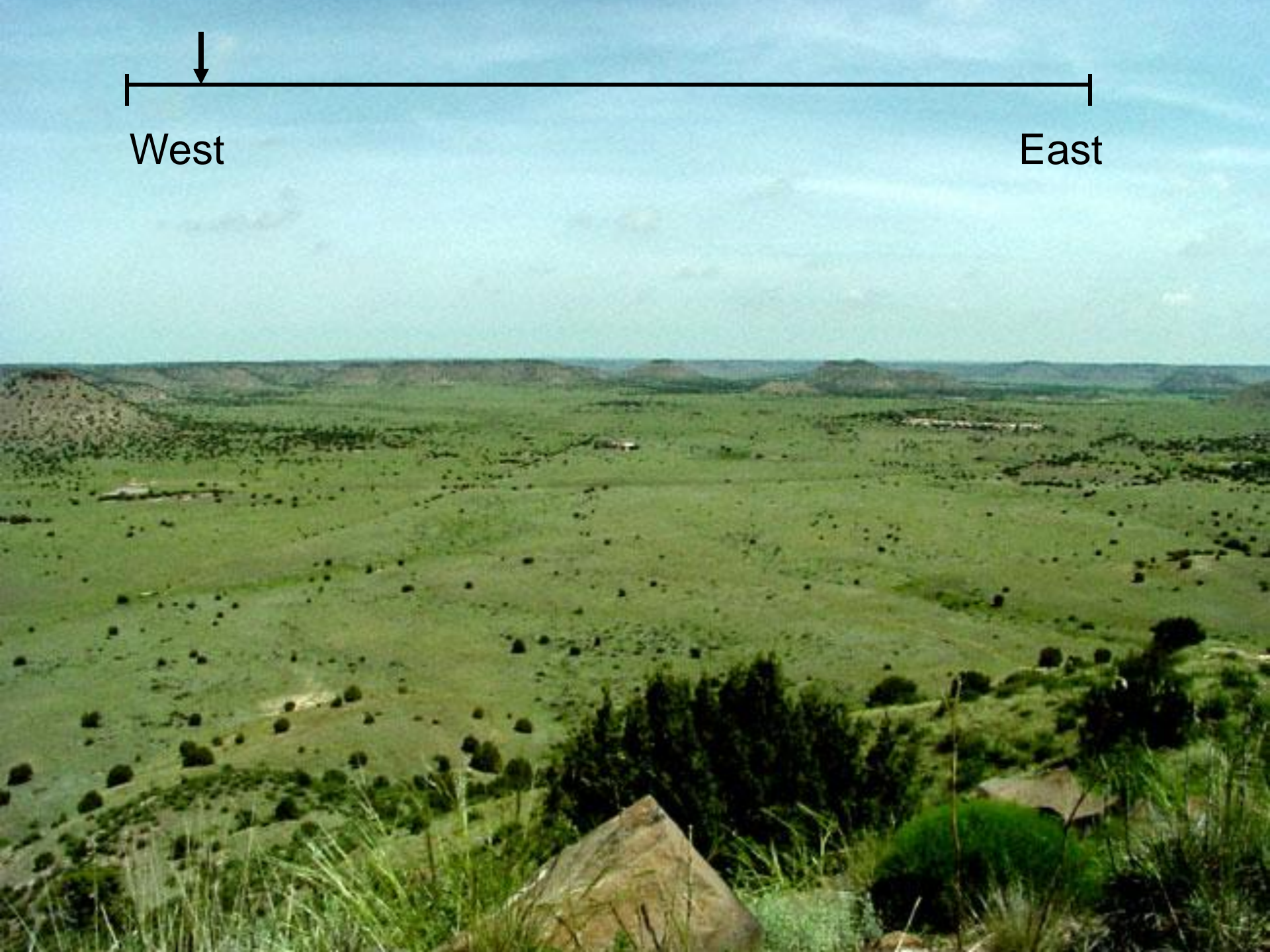


“The grass is at times green and short and at other times tall and white... .. nothing but bare prairie, which becomes confused in the distance with the smoke of burning grass.”

Washington Irving Expedition, 1832 Near Stillwater OK









West

East





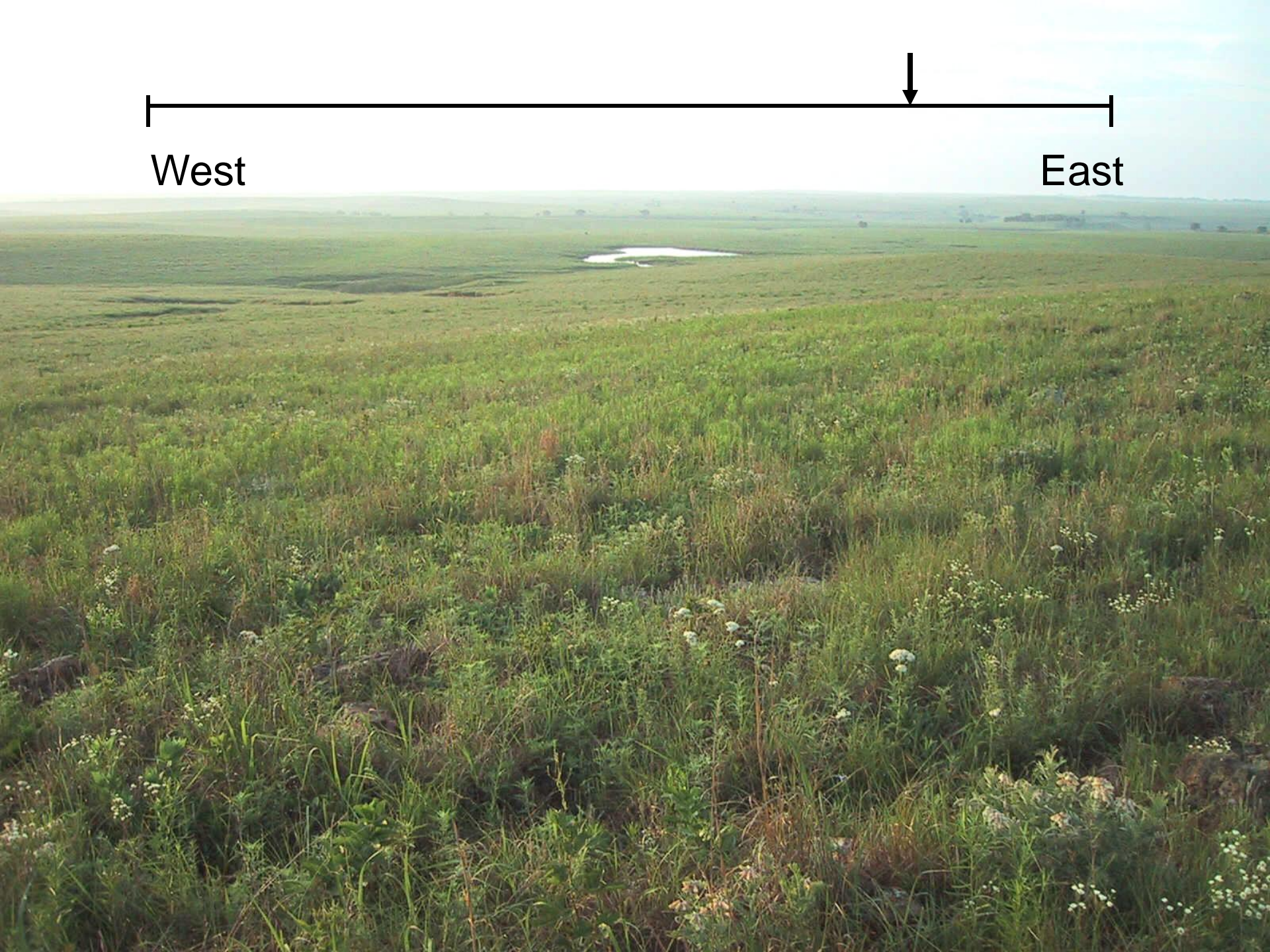
West

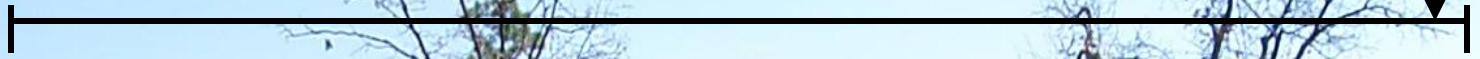
East



West

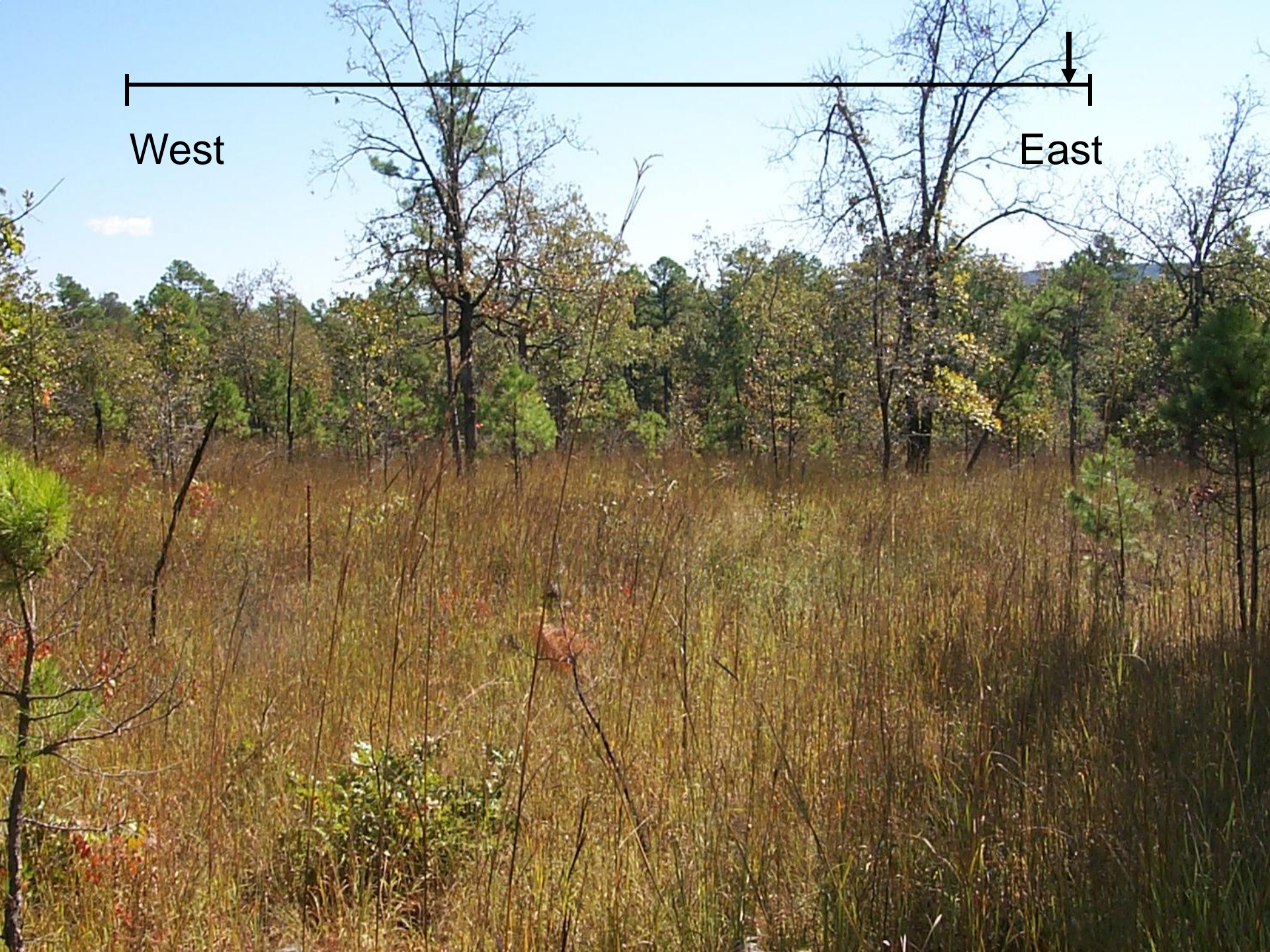
East





West

East



Oklahoma Vegetation

Climate

Semiarid

Humid



Eastern Redcedar

Sand

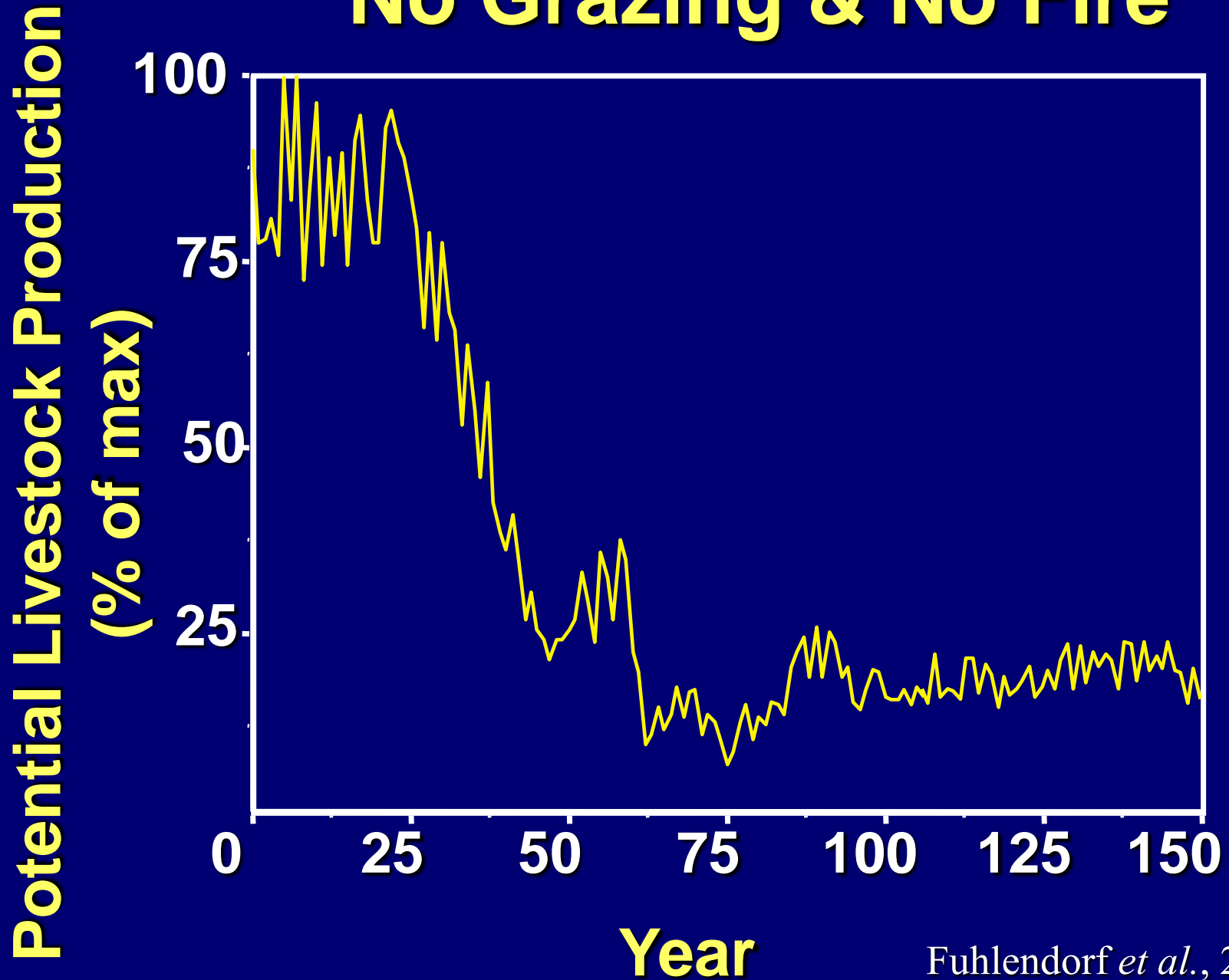
Soil
Texture

Clay

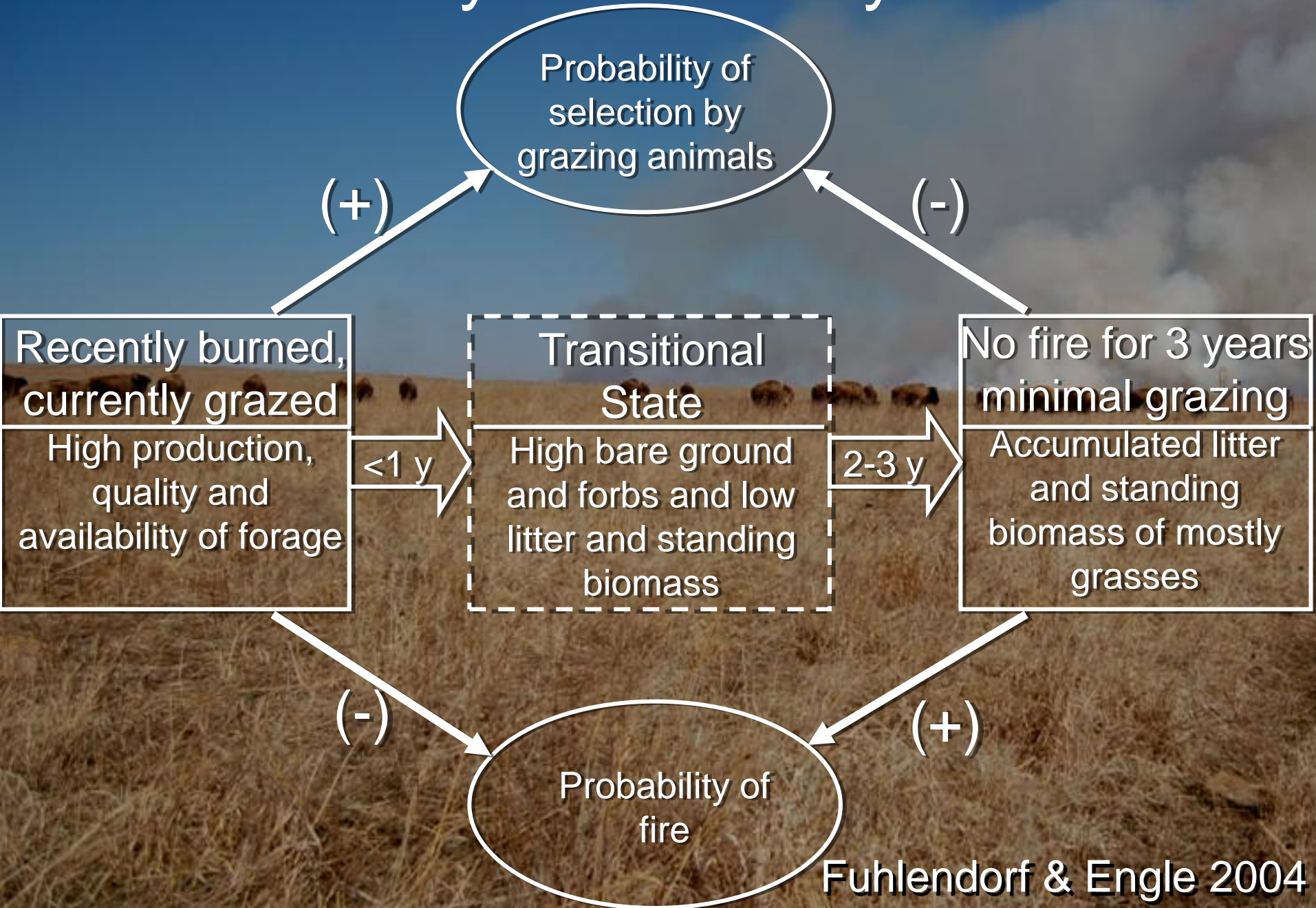




No Grazing & No Fire

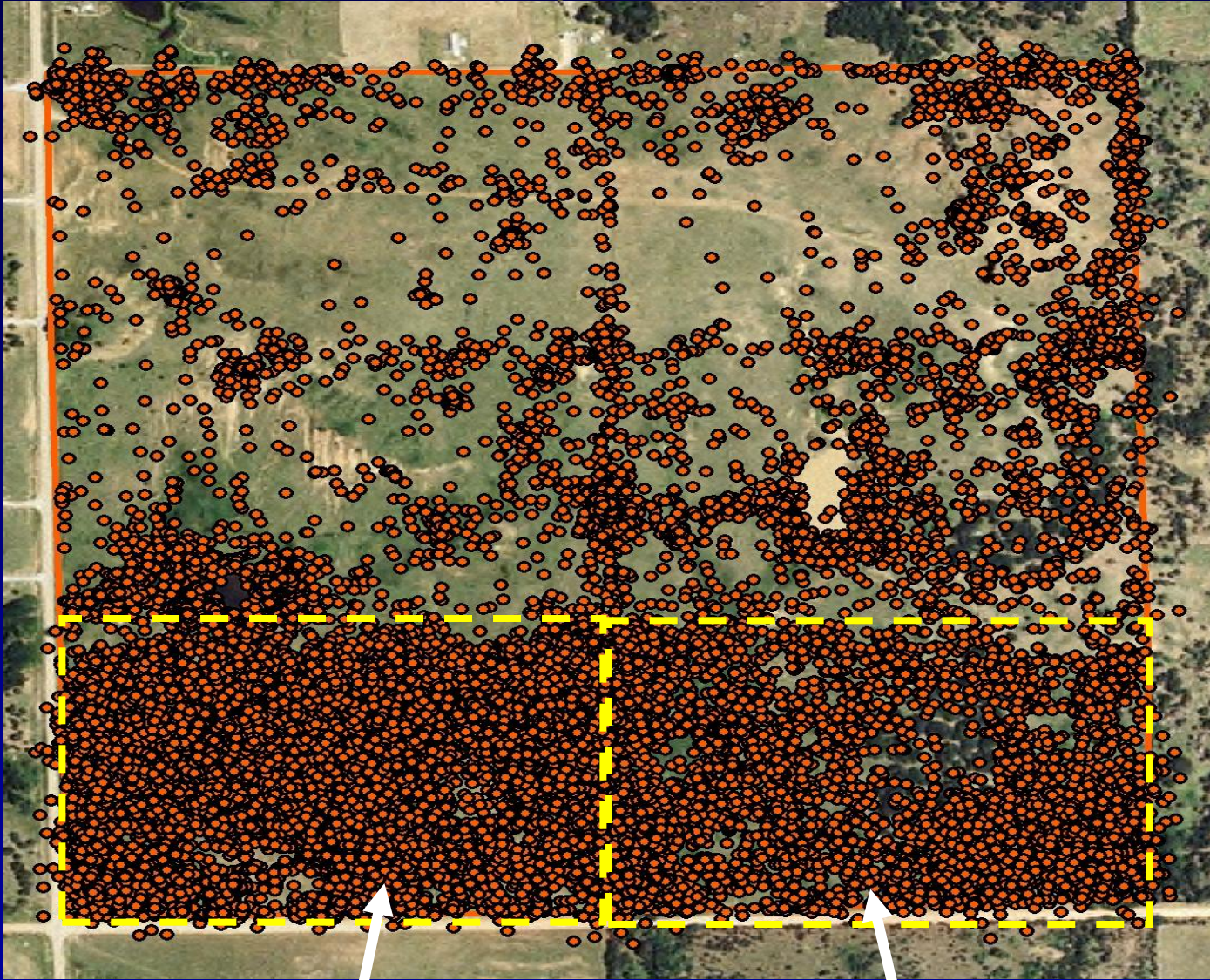


Pyric-herbivory



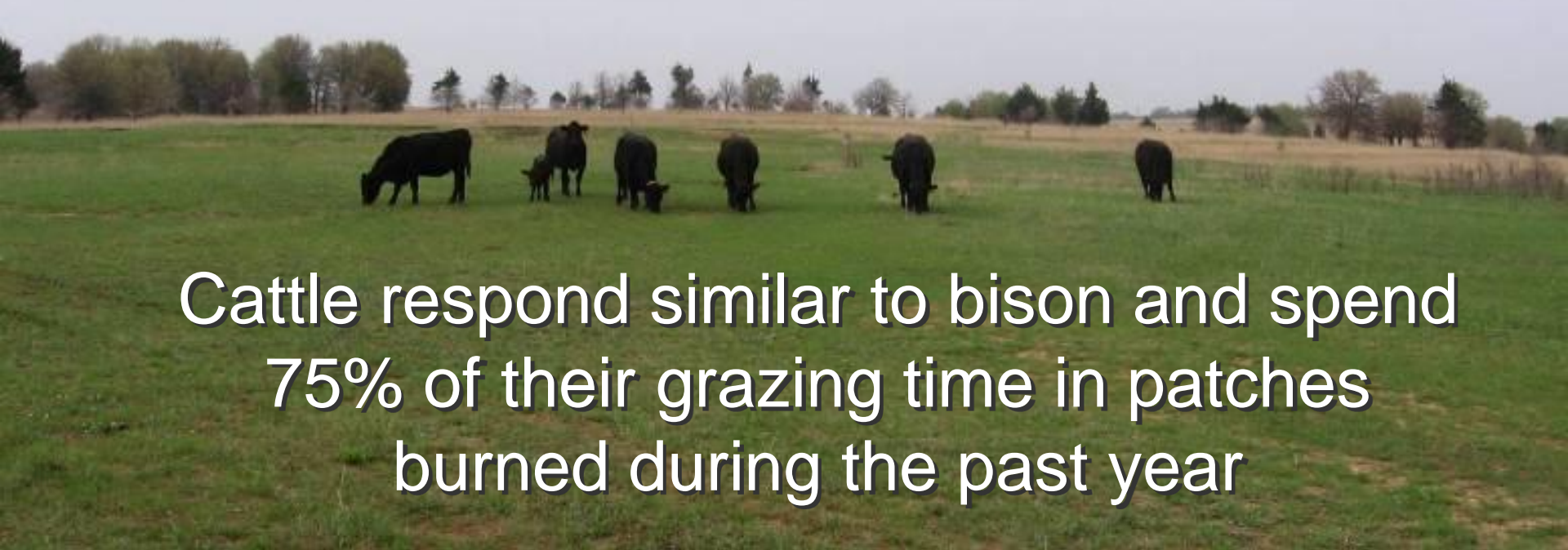
Tallgrass Prairie Preserve

Grazing Site Selection in Heterogeneous Treatment Growing Season 2008



Burned Spring 2008

Burned Summer 2007

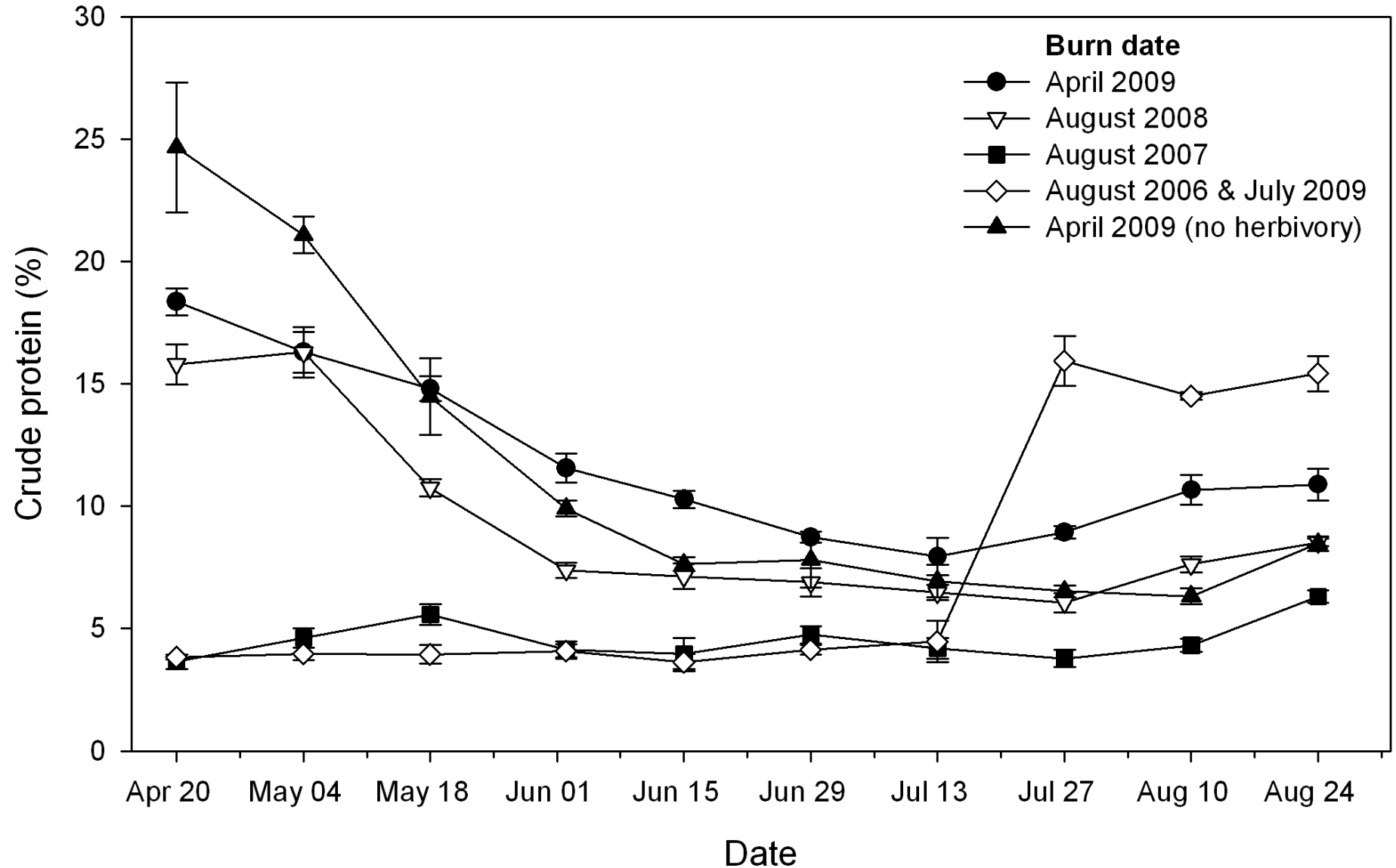


Cattle respond similar to bison and spend 75% of their grazing time in patches burned during the past year



Fuhlendorf & Engle 2004

Forage quality with time since fire



Pictures by Gary Kerby
Fuhlendorf and Engle 2004
Fuhlendorf et al. 2006

Henslow's Sparrow

Dickcissel

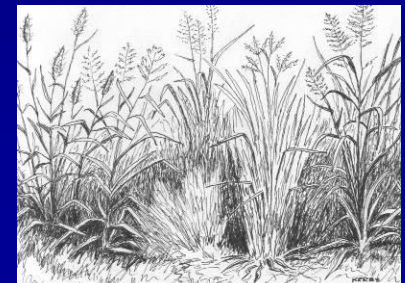
Eastern Meadowlark

Grasshopper Sparrow

Upland Sandpiper

Lark Sparrow

Killdeer



0

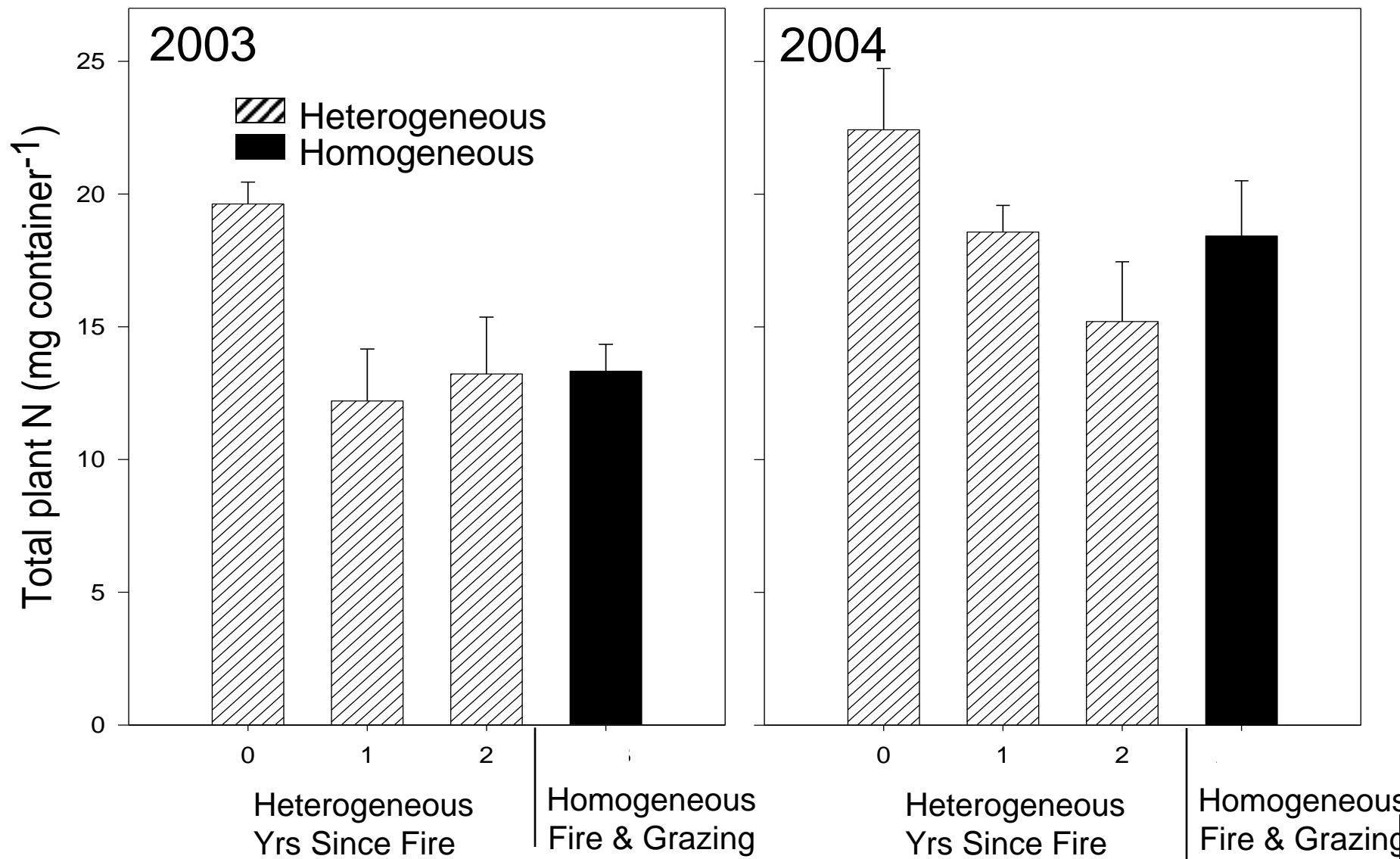
12

24

36

Months Since Fire and Grazing

Greater nitrogen available on recently burned patches that attract greater densities of grazers



Animal Production

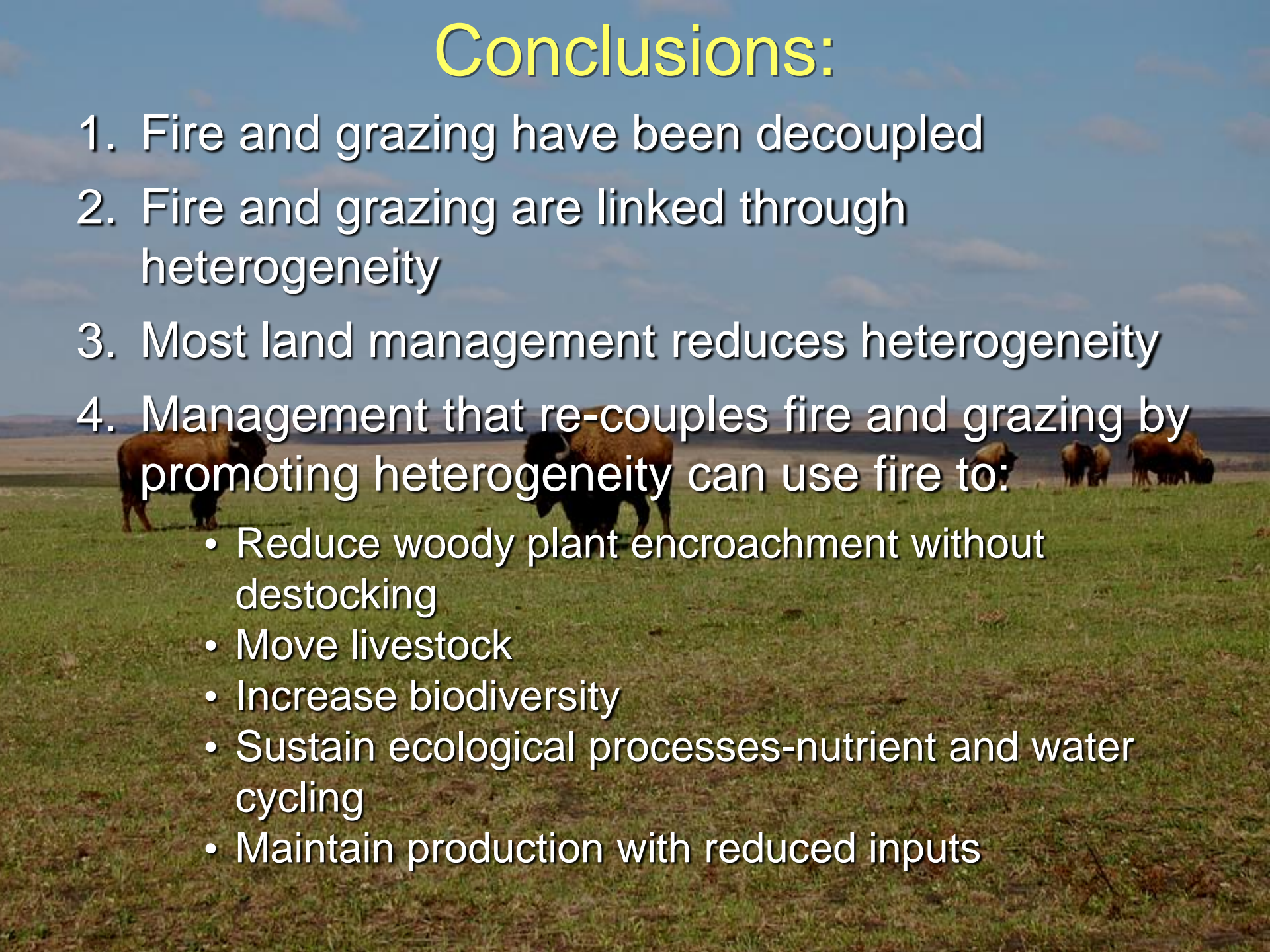
Bison and other grazers

- Bison have the highest breeding populations when allowed to interact with fire
- High tendency to select burned areas by many species
- Intensive spot grazing an evolutionary response to low nitrogen

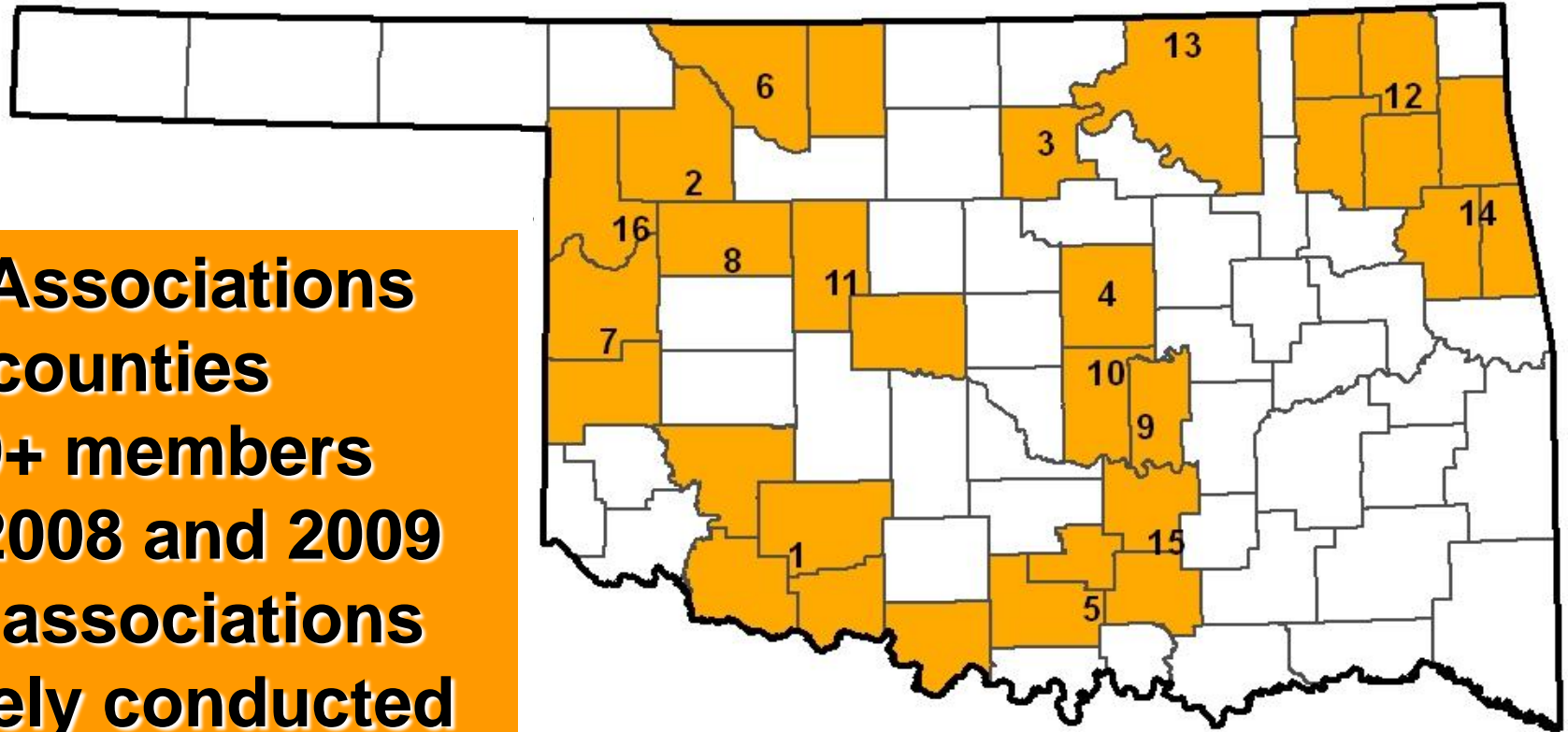
Stockers and Cow/calf- 10 years of data

- No Differences from traditional management
 - Average Daily Gain
 - Gain per acre
 - Body condition scores
 - Weaning weights
- Reduced supplementation

Conclusions:

1. Fire and grazing have been decoupled
 2. Fire and grazing are linked through heterogeneity
 3. Most land management reduces heterogeneity
 4. Management that re-couples fire and grazing by promoting heterogeneity can use fire to:
 - Reduce woody plant encroachment without destocking
 - Move livestock
 - Increase biodiversity
 - Sustain ecological processes-nutrient and water cycling
 - Maintain production with reduced inputs
- 
- A photograph of a herd of bison grazing in a vast, open grassland. The bison are scattered across the field, some standing and some grazing. The background shows a flat horizon under a clear blue sky with a few wispy clouds. The overall scene is a natural, open landscape.

Oklahoma's Prescribed Burning Associations



- 16 Associations
- 30 counties
- 350+ members
- In 2008 and 2009 six associations safely conducted 125 burns on 56,000+ acres
- Received over \$150,000 in grants and donations

John Weir, Natural Resource Ecology and Management

Funding

Competitive Grants

USDA-CSREES-AFRI-Managed Ecosystems-2010. \$500,000 over 4 years

USDA-CSREES-NRI-Managed Ecosystems. 2009. \$376,000 over 3 years

USDA-CSREES-NRI-Biology of Weedy and Invasive species. 2005. \$500,000 over 4 years

USDA-CSREES-NRI-Managed Ecosystems. 2001. \$340,000 over 4 years

Joint Fire Sciences. 2003. \$378,446 over 3 years.

Oklahoma Division of Wildlife Conservation. 2006. \$150,000 for 3 years

Oklahoma Agricultural Experiment Station. 2006. TIP \$35,000 for 2 years

Oklahoma Agricultural Experiment Station. 1999. TRIP \$40,000 for 2 years

Research Contracts

Nebraska Fish and Game. 2009. \$107,031 for 3 years.

The Nature Conservancy. 2008. \$50,000 for 3 years

The Nature Conservancy, 2002-2006. \$30,000 over 4 years.

The Nature Conservancy, 2001 \$20,000 over 3 years

US Fish and Wildlife Service-Wichita Mountains National Wildlife Refuge. 2009. \$93,000 over 3 years

US Fish and Wildlife Service- Charles M. Russell National Wildlife Refuge. 2008. \$55,000 over 2 years.

Questions?

