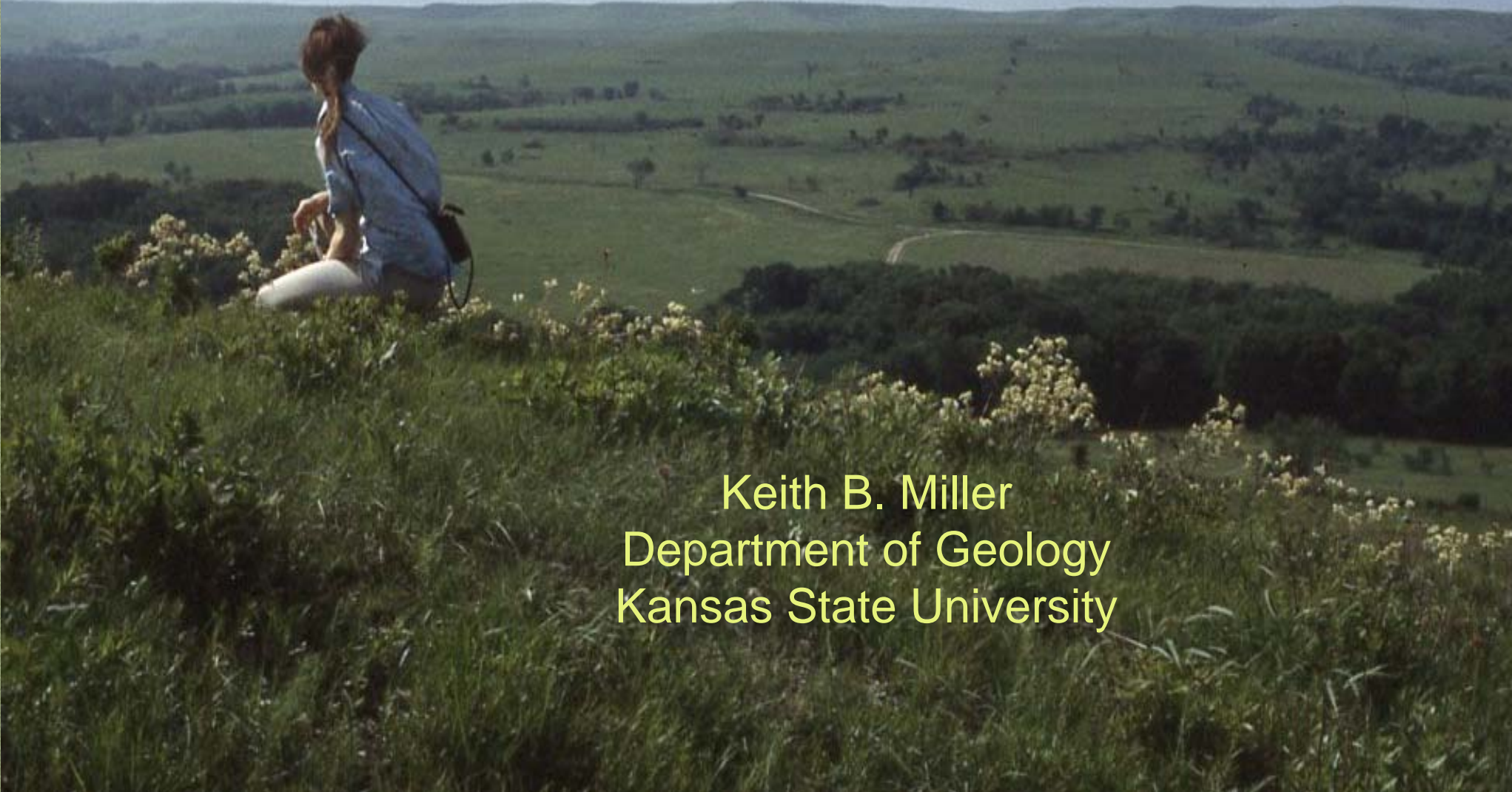


Natural History as a Foundation for Creation Stewardship

A photograph of a person with long hair, wearing a light blue shirt and white pants, sitting on a grassy hill. They are looking out over a vast, rolling landscape of green hills and fields under a clear blue sky. The person is positioned on the left side of the frame, looking towards the right. The foreground is filled with green grass and some small white flowers. The background shows a winding road and distant hills.

Keith B. Miller
Department of Geology
Kansas State University

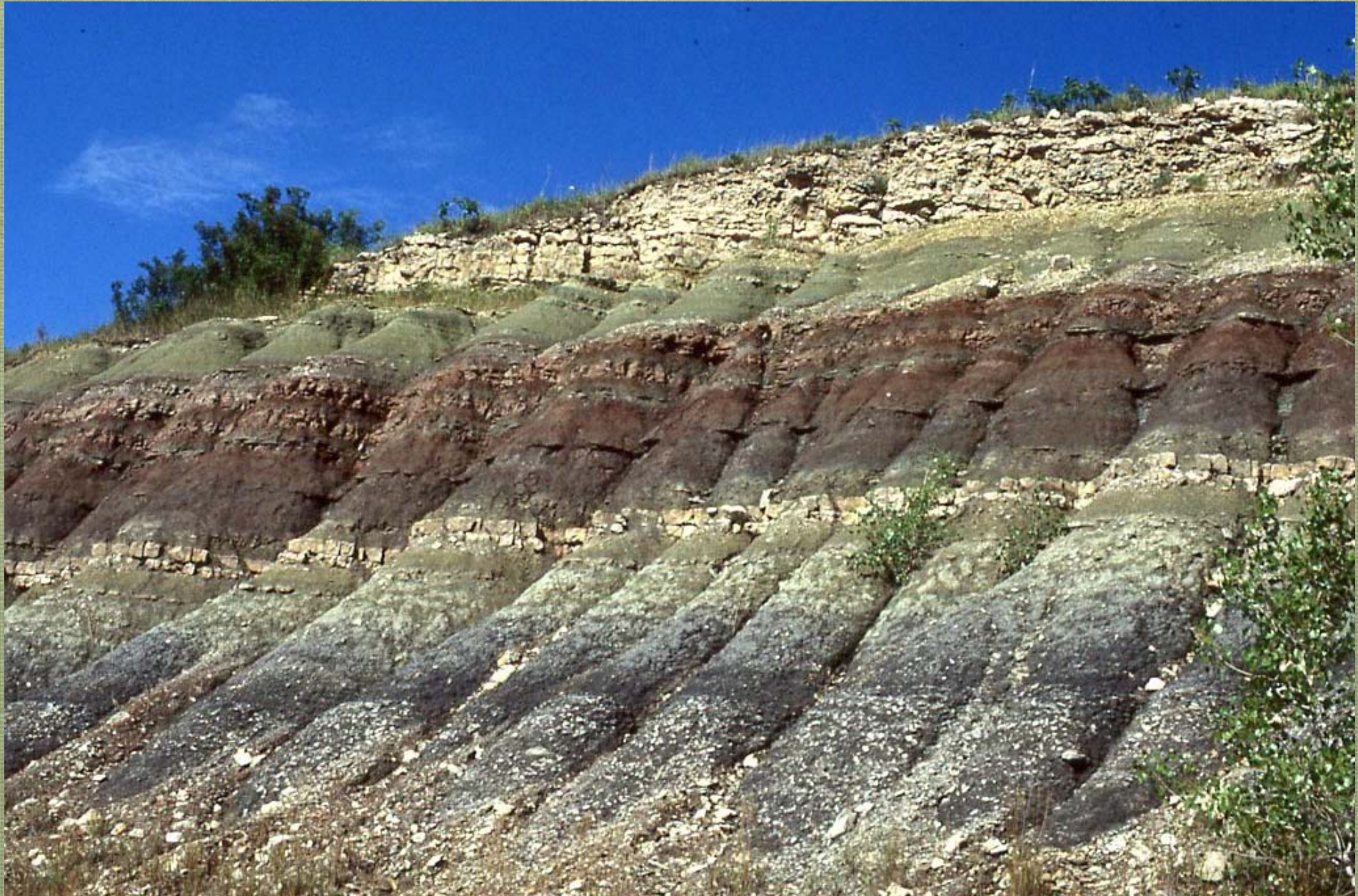
We cannot be proper stewards of creation without knowing that creation, and we cannot know creation without knowing something of its history.

Just as who we are as persons is a consequence of our history, so the character of the natural world is a consequence of its history. To understand our physical and biological environment we must understand its history.



Flint Hills landscape

The landscape of an area is a result of the geology of its underlying rock as well as its erosional and climatic history.



Geology underlying landscape



Chert (Flint) within
Permian limestone



Pleistocene glacial erratic



Continental Ice Sheets



Stream erosion

The landscape in turn has a major impact
on its biological communities and
on human history and culture.

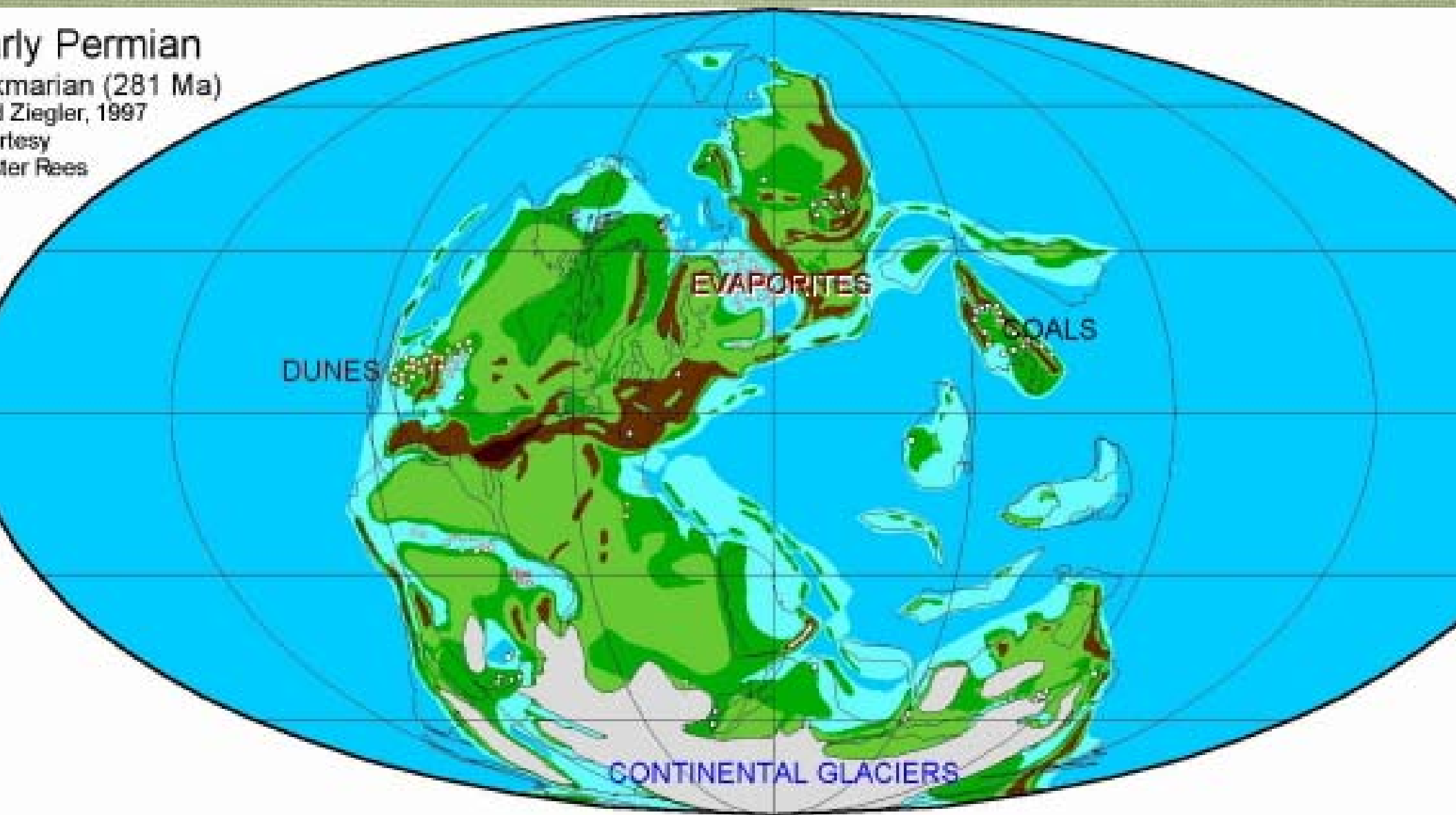




Vegetation Responds to Geology

The geology of an area provides a record of the complex changes that have occurred during Earth history and of the wide range of time scales over which those changes have occurred. It reveals the dynamics of changing paleogeography, climates and ecosystems.

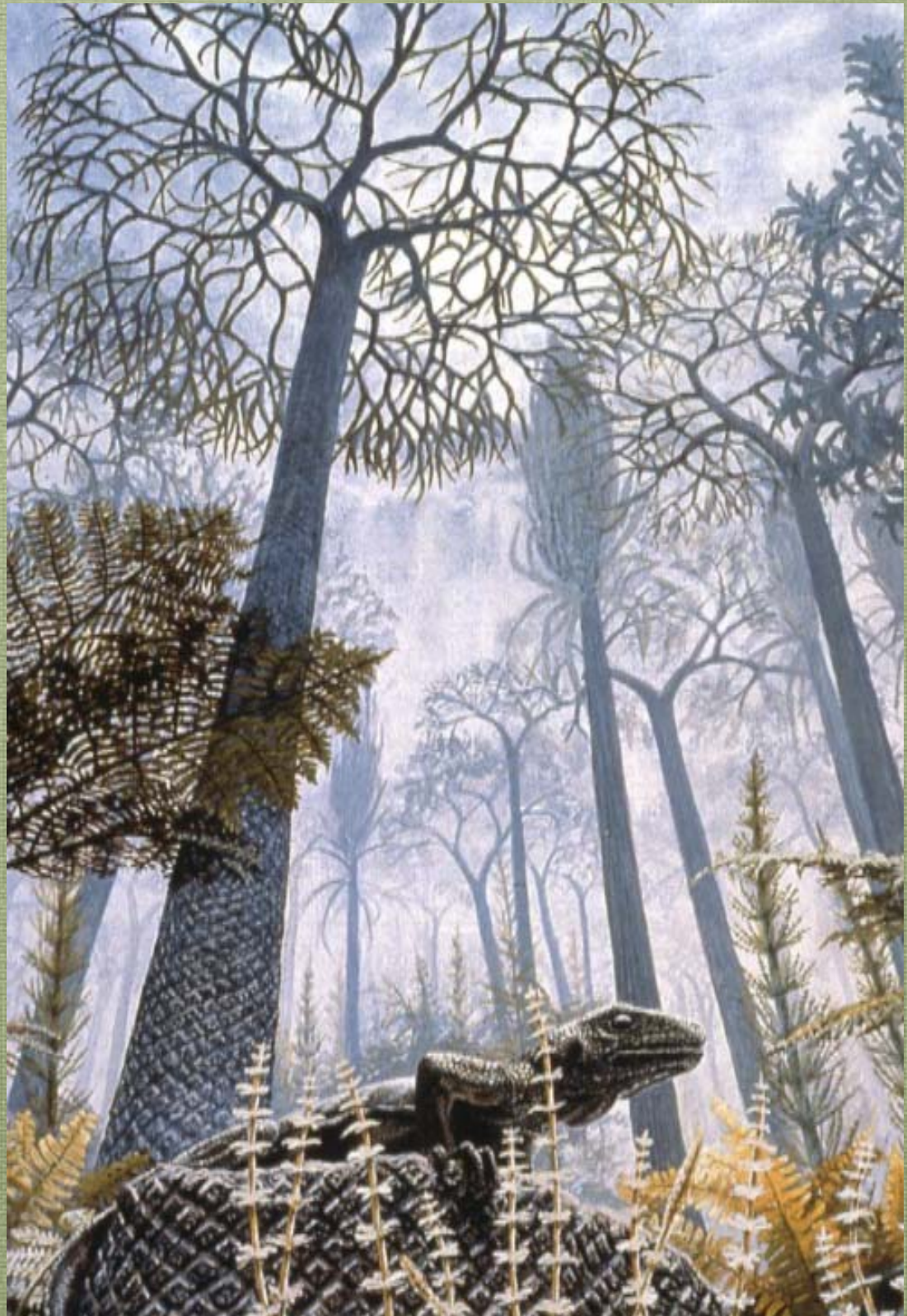
Early Permian
Permian (281 Ma)
Ziegler, 1997
Ries
Rees



Permian world

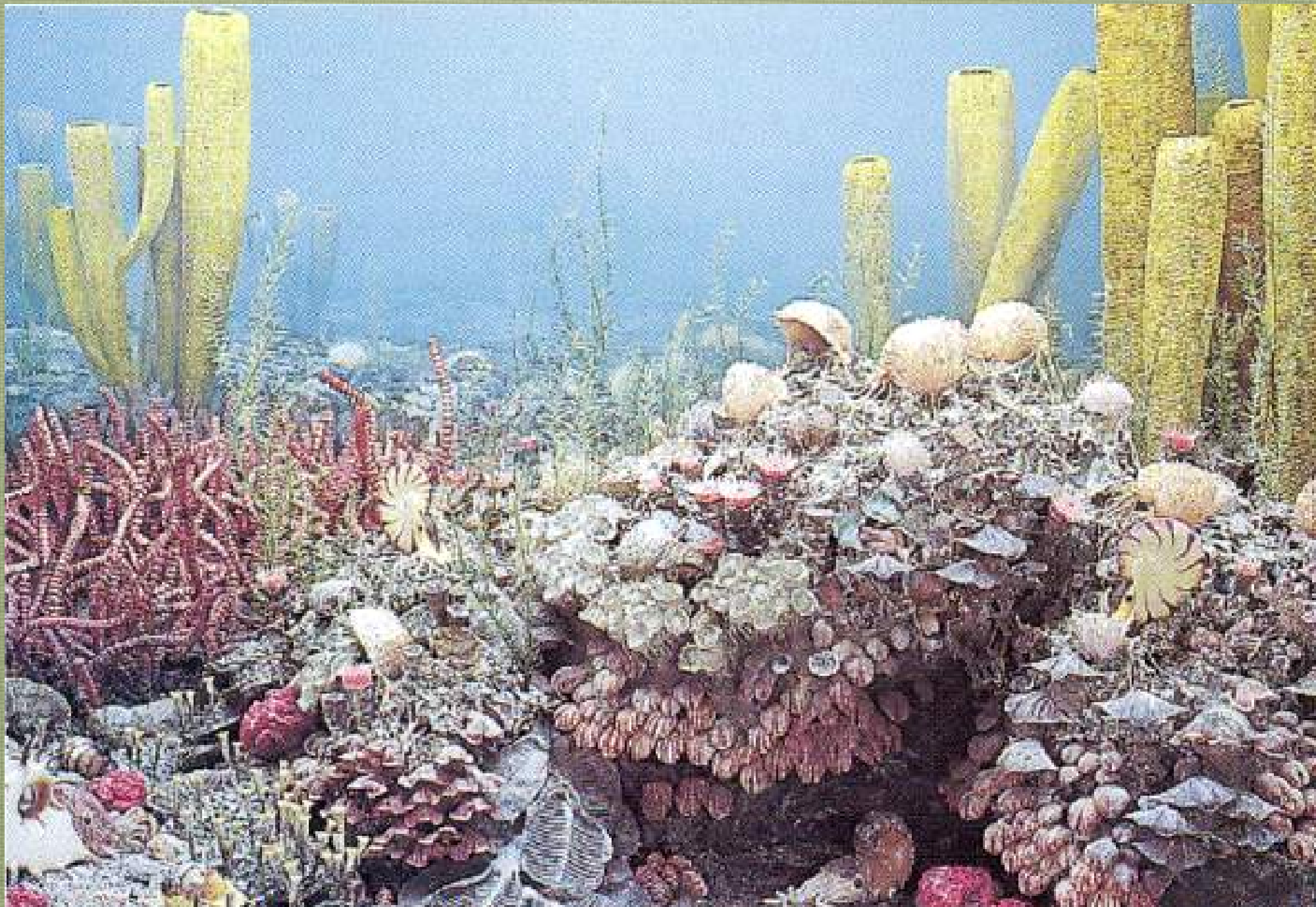
Alien-looking Vegetation

Lycopsids
Sphenopsids
Ferns
Tree Ferns



Pelycosaur
common
Permian predators

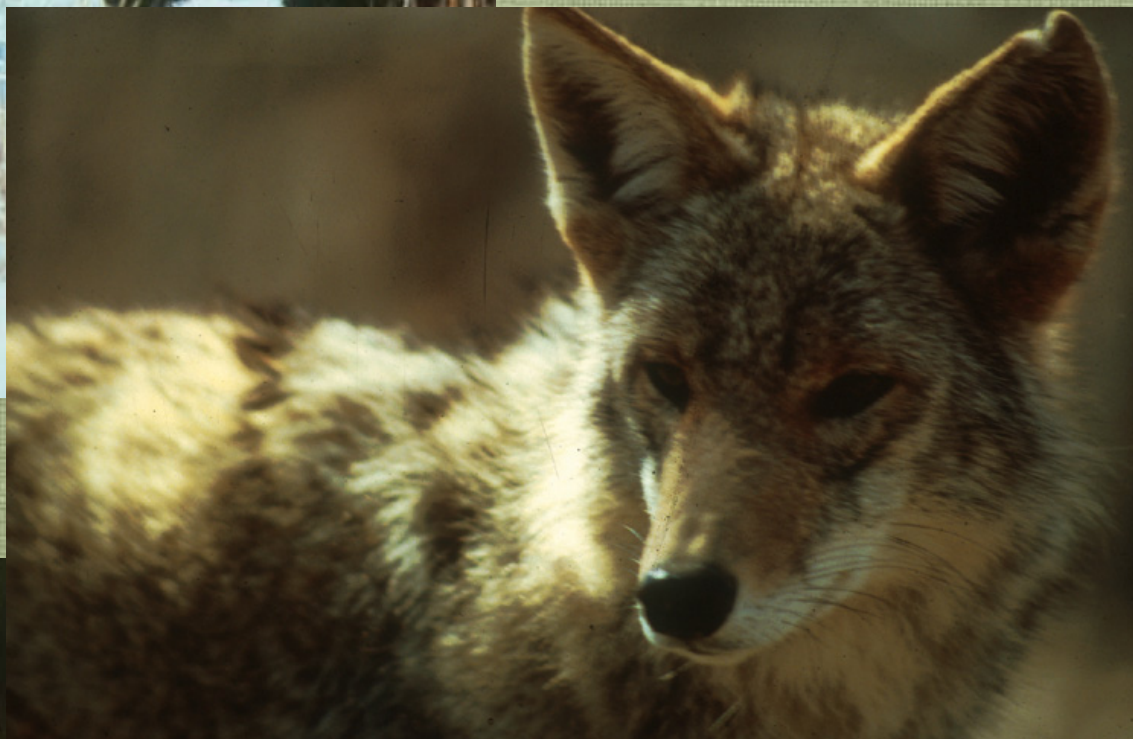




The distribution and interrelationships of species in modern ecosystems is a result of the evolutionary response of organisms to their dynamically changing environments. That evolutionary history is recorded in the fossil record, in the anatomy and behavior of each organism, and in the amino acid sequence of each genome.



Pleistocene ecology





Tallgrass prairie ecosystem

Understanding natural history must be a fundamental goal of creation stewardship. We cannot fully and properly understand creation without reference to its complex dynamic history.

Nature is a complex of interacting systems,
each of which is composed of entities which
are themselves continually responding to their
dynamically changing environments.



Bison grazing



Fire ecology

As humans we are part of the dynamic
interacting network of nature.

As God's image bearers we are called to be
active participants in creation in a way that
preserves and redeems.

Understanding the dynamic processes of the natural world, and the time scales at which they occur, better enables us to anticipate and recognize the consequences of human activity

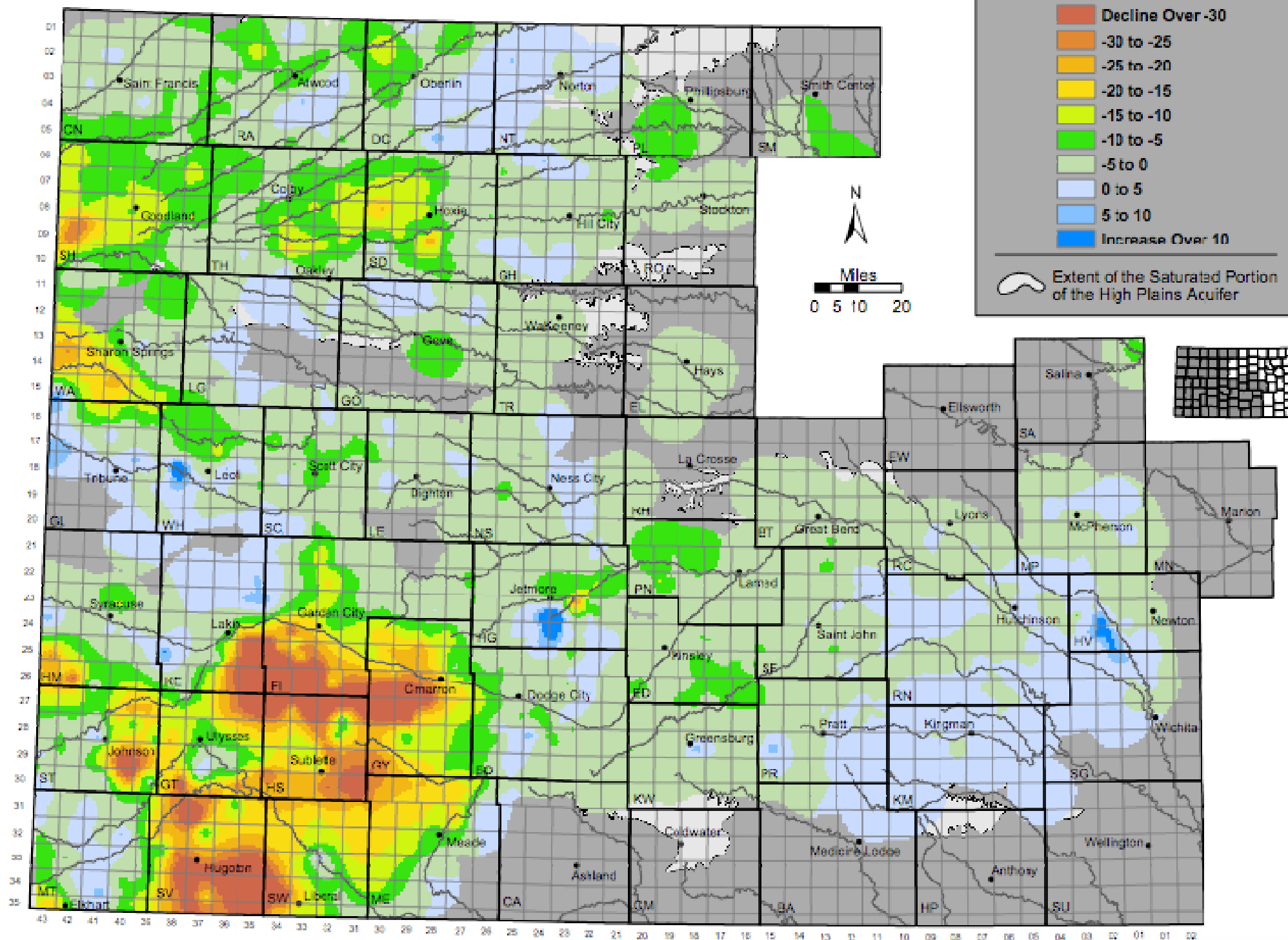


Grazing Cattle



Center Pivot Irrigation

Interpolated Change in the Water Table, 1996 to 2006 for the High Plains Aquifer in Kansas





Removing 280 million year old carbon

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

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TIFF (Uncompressed) decompressor
are needed to see this picture.

Our existence changes the rest of the natural world of which we are a part. By our actions we alter the ecology, chemistry, climate, and even geology of the planet. If those actions are not informed by an understanding of natural history, we may find that we are destroying the very systems that God has established for the fruitfulness and flourishing of the creation.