

Mills County & its Loess Hills

The importance of the landform & its inhabitants

Loess Significance:

The Loess Hills of Western / Southwestern Iowa are one of Iowa's 5 significant natural regions. The loess (luss) landform is significant in the fact that this feature of concentrated loess is known to exist in only 2 places in the entire world, here and China.

Creating Loess:

Loess is essentially a light and yellowish-gray clay like sediment that is gritty in texture and consisting of silt sized particles composed primarily of quartz, feldspars and mica. It is primarily deposited by winds.

The Loess Hills were formed in 2 main stages - the Loveland Loess was formed during the Illinoian Glacial Period (130-150,000 years ago) and the Peorian Loess was formed during the Wisconsinan Glacial Period (12,000 – 25,000 years ago). The Loveland Loess is highly eroded due to its longer exposure to the elements. The Peorian loess, deposited on top of the Loveland loess, makes up the bulk of the present Hills. Despite the fact that the glaciers did not reach the Loess Hills, they did provide the material to form the Loess Hills.

During glacial periods, glaciers would grind bedrock into the fine silt that composes the Loess. When the glaciers would recede, the melting ice's water flowed into the Missouri River system, carrying some of the silt with it. The ancient Missouri River would have been a braided mass, stretching approximately 2 miles across or more. During dry periods or the winter months, the exposure to the sunlight and the wind would cause the material to dry out and the material would become airborne in the breeze. When the winds (from the west) came across the braided Missouri River, they carried some of the silt load with it. Upon reaching the eastern banks of the river, the winds would become slightly obstructed by the riverbank, and the turbulence would cause the heavier portions of silt to be deposited right away forming the western edge of the Loess Hills, the lighter portions of silt would be carried a greater distance to the east. It took a very long time for our spectacular Loess Hills, a woodland and grassland area totaling 640,000 acres, to form via this method.

Importance:

Over one half million people visit this region of Iowa each year. This area is home to many rare plant and animal species and communities. Through past years there has been a move to preserve as much of the region as possible through national, regional and local means. In most cases the areas targeted for preservation are prairie remnants, with the highest concentrations of rare native plants and its animal inhabitants.

The National Park Service received Congressional funding to study the hills for possible inclusion as a National Park unit. The NPS has staff acting in an advisory role to a regional manager on preservation of the Loess Hills. The Loess Hills Alliance is a non-

profit group that was created by legislation, with a budget and working committees in topic areas such as Stewardship, Protection, Economic Development, as well as an Executive Committee to oversee all activities.

Private landowners are a great asset in the effort to preserve our natural landforms and resources. Many landowners enroll in Conservation Easement programs that allow them to permanently preserve the natural habitat located on the enlisted properties.

The Nature Conservancy (national NPO) was able to purchase Folsom Point Prairie, a 280-acre high quality prairie remnant, as a move to preserve another significant area in northwestern Mills County. Their efforts included the removal of cedar trees on this property as well as prairie burns to rejuvenate and enhance the prairie. Before being acquired by the Nature Conservancy, FPP was a site used to get fill dirt for the construction of the Bunge Industrial Plant to the north. Removal of the loess soil and its use as fill dirt has become quite a concern because of several reasons: a) It significantly alters the landscape b) It is highly erodible c) It is unstable as fill.

If you cruise around Mills county, you can see areas where the hills along the roadsides were cut at angles during construction of roads and buildings, which is a large contributor to the soil shift (mud slides) seen after a strong rain. When the loess is cut at an angle, it allows channels to form, which can lead to undercutting and frequently leads to heavier silt loads in the runoff to ditches and streams. However, when the loess is cut vertically, with no angle, it remains fairly stable and does not appear to sustain any significant erosion during heavy rains.

These hills have been here, comprised of loess, for a very long time. The most significant changes taking place in this region are due to man. We cut timber, create fields, build roads and we have only really started to see our impact upon this fragile landform. Before the arrival of settlers in this region, this area was comprised of tall prairie grasses and forbs, and various tree species. The tallgrass prairie species native to this area were responsible for the stability of the soils and the regions landforms. Their root systems, instead of creating mats of roots in the upper 2 inches of soil like many of our “replacements”, actually struck deep down into the soil, some over 5 feet deep, and helped to hold everything in place.

Cultural Significance:

Long ago, roughly circa 1050 - 1300 AD, there were residents in the Glenwood region of Mills County. Today we refer to these people as the Glenwood Culture of the Nebraska Phase, of the Central Plains Tradition. The Central Plains Tradition people may be the ancestors of the historic Caddoan-speaking Arikaras and Pawnees. There are 284-recorded Nebraska Phase sites in Iowa, ninety percent of which occur in the Loess Hills. An astounding 239 of those sites occur in Mills County. The majority of these sites are located on the Keg Creek and Pony Creek drainage areas. These people would slash and burn timbered areas, raise crops (corn, beans, squash) for a couple of years, by which time the fields would become infertile and they would clear another area for a field. In many cases, the people would relocate nearly every 10 years. They would move and build a new earth lodge home and clear new fields, sometimes building new homes on old fields. Some estimates of the Glenwood Culture populations vary between 300 and 500 people. They resided in the Loess Hills of Mills County for nearly 150 – 200 years (1050 – 1300AD), and then disappeared from Iowa’s archeological record. It is believed that they migrated northward along the Missouri River into South Dakota, possibly due to climatic change which halted their ability to grow their staple crops.

Human activity was absent from the Loess Hills for over 3 centuries. In the 17th century, French fur traders and missionaries were visiting the Loess Hills, and were the first Euro-Americans to discover the Loess Hills, claiming the region for France. The French handed the region over to Spain after their loss of the Seven Years War in 1763. The Spanish returned the area to France 37 years later, in 1800. In 1803, the French sold the area to the United States as part of the Louisiana Purchase.

In the late 1830's, the Missouri Valley was heavily populated. When the Iowa Territory was separated from the Wisconsin Territory on July 4, 1838 – it included all of present day Iowa, as well as portions of North and South Dakota and Minnesota. The eastern portion of Iowa already had a large population established and met the requirements for a legislature based on population (5,000 adult males), and moved to meet the other necessary requirements for statehood. When the area reached 60,000 in population it could apply for admission to the Union.

In 1833, the US Government relocated approximately 2,000 Potowatomis from IL to southwestern Iowa, between present day Sidney and Glenwood. Attacks by the neighboring Sioux and periods of poor hunting took a hard toll on the Potowatomis. As if that weren't enough, in order for Iowa to become a state in 1846, it was required for the Potowatomis to give up their land in the region and relocate to Kansas and Oklahoma. Chief Waubonsie of the Potowatomis was able to negotiate for a 2-year reprieve, as well as for the aging Chief to remain in Iowa. He is buried in Lyons Township, Mills County.

Mills County is rich in regards to its history, and in its Loess Hills. The Glenwood Culture seemingly chose to occupy this region of Mills County based on something that appealed to them. The Potowatomis were forced to occupy this region – for a little while – and then forced out. A small amount of Mormons, on their trek to their Promised Land, were settling in the region with the previously established Euro-American populations. Soon after, outposts and forts were forming, leading to cities. The Loess Hills were once again, occupied.

Bibliography

Mutel, Cornelia. 1989. *Fragile Giants: A Natural History of the Loess Hills*. Iowa City: University of Iowa Press.