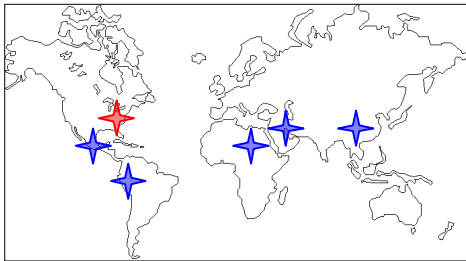


Agricultural Hearths

What do eastern North America, Mexico, Peru, the Middle East, Africa, and east Asia have in common? They are all agricultural **hearths**, or centers of plant domestication.

At these hearths, prehistoric people selected seeds with certain desirable traits, like their larger size or thinner seed coats, and planted only them. Over time, the people's choices domesticated the plants. Familiar examples are corn, potatoes, rice, and wheat.

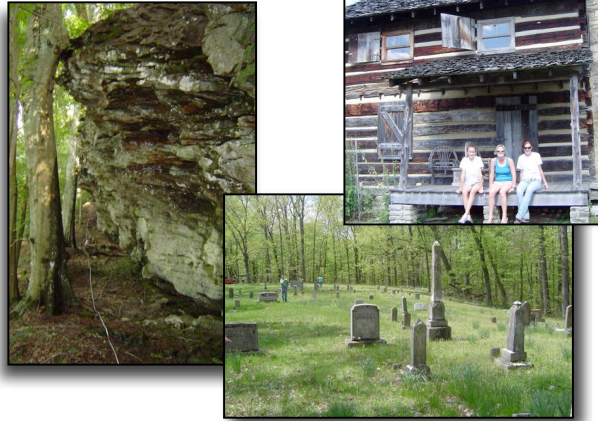


World hearths of plant domestication.

In the 1980s, archaeologists discovered that eastern North America was an agricultural hearth. Our Red River Gorge sites contributed to this discovery. They contain some of the earliest and best-preserved evidence of prehistoric plant use. We know now that plant domestication began in eastern North America about 5,000 years ago.



(L-R) Eastern North America crops: sunflower, sumpweed (museum.state.il.us), goosefoot (botany.cs.tmu.edu), maygrass (cas.sc.edu), and squashes.



Site Protection & Preservation

The archaeological sites in the Red River Gorge are like all cultural resources on government property. They are protected by state and federal laws.

Please help preserve our irreplaceable cultural heritage. Leave artifacts where you find them and do not dig sites. Report discoveries on public or private property to government agencies, professional archaeologists, resource managers, or local universities. The past belongs to all of us!

Living Archaeology Weekend

Hosted by: US Forest Service
Daniel Boone National Forest
www.fs.fed.us/r8/boone

Sponsored by: Kentucky Organization of Professional Archaeologists
www.kyopa-org.org
Kentucky Archaeological Survey
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www.heritage.ky.gov/kas.htm

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Red River Gorge: A World Hearth of Plant Domestication



September 25-26, 2009

Gladie Historic Site

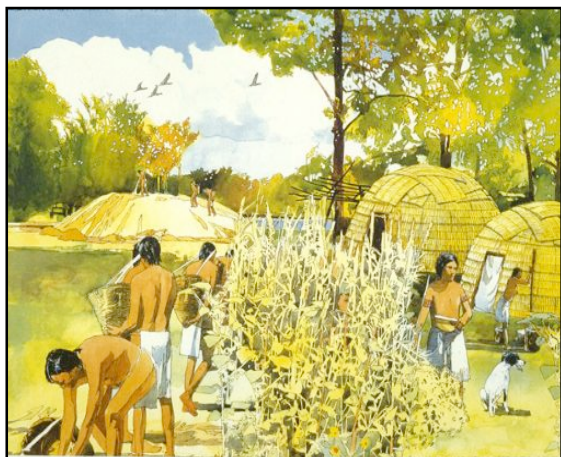
Red River Gorge

**Daniel Boone
National Forest**

Eastern Agricultural Complex

Native people in North America's Eastern Woodlands hunted wild animals and gathered wild plants. Over time, they gradually added domesticated plants, or **cultigens**, to their diets.

They domesticated fleshy squash and eight different seed-producing native plants. The latter are called **weedy** because they thrive in disturbed places like river floodplains and forest clearings.



demeta.museum.state.il.us

Archaeologists call the weedy seed crops the **Eastern Agricultural Complex**. Sunflower and sumpweed were sources of oils, fats, and other nutrients. Goosefoot, maygrass, erect knotweed, giant ragweed, amaranth, and little barley provided starchy carbohydrates. Native Americans grew these crops long before they adopted corn and beans from Mexico.



Goosefoot or Lambsquarter

Goosefoot, named for the shape of its leaves, is a group of herbaceous plants with fleshy stems that die back each year. In late fall, they produce dozens of seed clusters with thousands of tiny seeds.

As early as 8500 years ago, Native Americans collected wild goosefoot for its nutritious shoots, leaves, and seeds. Goosefoot is an excellent source of carbohydrates, fiber, and calcium. Seeds have more nutrients than most cereal grains. Unlike wheat, they are gluten free.

Beginning about 3500 years ago, native peoples in Kentucky began to grow goosefoot. This caused physical changes in the plant and led to the domestication of one species: *Chenopodium berlandieri*. Compared to wild forms, its seeds are larger and have thinner seed coats (protective exterior layers).



Beth Hickey, *Native Plants of Arizona* (2005)

Native peoples planted goosefoot by broadcasting the small seeds in garden plots. They used young shoots as herb and ate goosefoot leaves as greens. Gardeners harvested the seeds by striking the plant with their hand or a stick, and catching the seeds in baskets. The starchy seeds were ground into flour or added to stews and gruels. Natives stored seeds in baskets, bags, and sub-surface pits for use as food year-round.



Archaeologists have found goosefoot seeds at sites all across Kentucky including many rockshelters in the Red River Gorge. Domesticated goosefoot seeds from Newt Kash and Cloudsplitte in Menifee County were dated to 1500 BC. These are the oldest domesticated goosefoot seeds from the entire Eastern Woodlands!

Goosefoot use declined sharply about 1000 years ago, when Native Americans adopted corn and beans from Mexico. Goosefoot now growing in Kentucky is the wild variety. Although few Americans eat goosefoot today, it was a very important crop for Native Americans in the past.