



## The Barrens

The barrens are a unique grassland ecosystem that exists within the Fort Campbell Military Installation. The barrens belong to what was once a much larger area, among the largest grasslands in the Southeast, covering 3.7 million acres — an area the size of Connecticut and Rhode Island combined. The Big Barrens encompassed a crescent-shaped area that extended from the Ohio River south into Tennessee and west toward the Cumberland River — roughly 200 miles long and averaging 20 miles wide

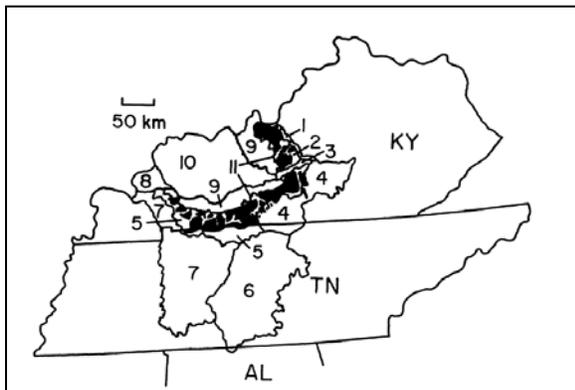


Figure 1. Map showing the extent of former grasslands in the Southeast (in black)

The barrens may appear to be an extension of the prairies of the American Midwest, looking much like what one would expect to see in Nebraska or Iowa. However, the combination of plant species typically found in the tall grass

prairies of the Midwest are rarely seen in the barrens, which have species and combinations unique from other grasslands. At least four major types of prairie are found at Fort Campbell, including dry prairie, mesic prairie, wet-mesic prairie, and wet prairie.

The dry prairie association is generally a short- to mid-grass prairie often up to about 3 feet (1 meter) tall. It grows on dry rolling upland sites such as hilltops and upper side slopes and is more or less absent from swales and low slopes or along streams.

The mesic prairie association occupies broader flats, stream terraces, and lower slopes and is usually sandwiched between wet prairie and dry prairie. It is dominated by big bluestem, Indian grass, and switchgrass.



Figure 2. Big Blue Stem

The wet-mesic association is found in swales, depressions, sinkhole basins, and along wet channels and streams. It grades into the mesic prairie and sometimes includes a mix of wetland and mesic prairie species. Important wet prairie species include gama grass, switchgrass, redbtop panic grass, swamp milkweed, rushes, bulrushes, and sedges. Some wet prairies may also have marsh-like communities with cattails and arrowhead.



Figure 3. Indian grass



Figure 4. Broom sedge



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In addition to being a unique and ecologically sensitive environment, the barrens play an important part in the prehistory and history of the region in Tennessee and Kentucky. They were part of the Cherokee hunting grounds and could be reached in less than four or five days from the Cherokee Overhill Towns in eastern Tennessee. The elk and bison hunted here supplemented a diet based on crops grown in the floodplains near the Overhill Towns. The Shawnee and the Chickasaw Tribes also hunted in the barrens.

The first Europeans who explored the area described a unique landscape that has been largely lost over time. They reported that the barrens were dominated by bluestem grasses; many species of flowering herbs; a variety of small shrubs, such as prairie willow, sumac, and American hazelnut; and scattered, isolated individuals or groves of scrubby oaks and hickories. Large trees were mostly absent, but grass was said to grow so tall that it could reach a man's shoulder on horseback. Historic documentation of south-central and western Kentucky describes vast plains of the grasslands, with only scattered trees or sometimes no trees at all. European settlers believed that the relatively treeless landscape meant the soil was too poor to support agriculture and therefore, "barren," the source of one name applied to the area that

has carried forward. In addition to the Big Barrens of Kentucky, the area is now referred to by other names such as the Kentucky Meadows or the Pennyroyal Plain prairie.

Scientists have studied the existence and continued survival of grasslands in the southeastern United States. Two opposing theories have emerged on how the barrens were created and how they survived. Some research points to The barrens as a man-made phenomenon - the result of Native American tribes using fire to modify the forest landscape. Other research suggests that the barrens are a natural phenomenon, related to existing soil conditions and the underlying Mississippian limestone, regenerated by fire, whether naturally through lightning strikes or intentionally from Native Americans setting fires.

Over the past two centuries, the barrens' footprint has been reduced by more than 99 percent. With the displacement of the Native American tribes from this area and the decrease in occurrence of fires to revive the barrens, forests quickly encroached into the grasslands. Most early settlers bypassed the barrens because they did not offer much in the way of permanent creeks or rivers and were believed to have poor soil. However, once settlers discovered that the prairie soil was



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rich after all, farmers in the 1800s and early 1900s converted the barrens into some of the most productive croplands in the Southeast, planting corn, soybeans, wheat, and tobacco. Land not suitable for agricultural development transitioned to forest in the absence of the fire regimes of the past.

Currently, outside of Fort Campbell, there are very few and widely scattered remnants of the barrens — totaling less than 100 acres altogether. Four primary factors have contributed to the loss of the original prairie-like landscape: cultivation, absence of regular fire, introduction of invasive species, and development and construction. However, protected within the Fort Campbell Military Installation's boundaries are 7,437 acres of land that provide the best remaining example of the 'barren' landscape settlers first observed more than two centuries ago. The barrens are among the areas on the installation that provide optimal training ground for soldiers, including impact and drop zones, and historically provided range and maneuver areas for armored vehicles.

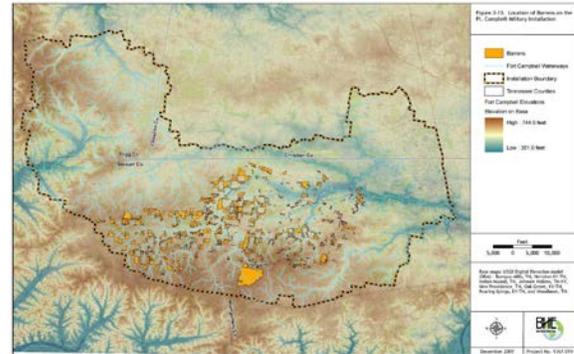


Figure 5. The barrens at Fort Campbell

Fort Campbell follows regularly updated plans to guide its management of natural resources like the barrens on post. The plans balance requirements to support the military mission along with goals for sustaining a natural ecosystem and associated plants and wildlife. The plans also prescribe fire to limit tree growth within the barrens, as well as use of machinery or herbicides when fire is ineffective for clearing undesired growth.

Fort Campbell has entered into a formal agreement with the Tennessee Wildlife Resources Agency and the Kentucky Department of Fish and Wildlife Resources to establish a cooperative means for reestablishing, enhancing, and protecting native warm-season grasses on the installation and to allow the state agencies to harvest native warm-season grass seeds. The military reservation has cooperated with research institutions in the region, such as Austin Peay University and the



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University of Tennessee, to facilitate research on habitat and land management techniques that support military training while also benefitting wildlife and promoting the maintenance and reestablishment of naturally occurring native grass barrens.

The barrens at Fort Campbell represent the remnants of a once vast and unique grassland. How and when the barrens developed, either naturally, through the intervention of humans, or a combination of the two continues to be investigated. It is clear that this landscape was maintained through seasonal fires. The open grasslands were subsequently cultivated for croplands by Euro-American settlers. With the absence of regular fire and the introduction of invasive species by the settlers, the native plant species of the barrens dwindled. The agricultural fields and open spaces were repurposed with the construction of Fort Campbell and the need for large open spaces for military training. Fire was reintroduced by the Army as a means to maintain the open spaces for training. Human intervention

and modification by fire is once again contributing to the continuity of the barrens ecosystem.

In 2012, Fort Campbell entered into a Memorandum of Agreement with the Kentucky State Historic Preservation Office (SHPO) to mitigate adverse effects to historic properties, including nine prehistoric archaeological sites and one historic cemetery, in a proposed new training range for soldiers driving scout and reconnaissance vehicles (Scout/RECCE Range). Because traditional archaeological mitigations were impractical, the agreement specified the production of a documentary video that would address the remnant areas of the barrens at Fort Campbell; how they were created and maintained, and how they contribute to a cultural landscape. The video includes interviews with Cherokee Tribal representatives, Fort Campbell archaeologists, biologists studying the unique landscape, and specialists from Fort Campbell involved with the ongoing management of the barrens remaining on the post.



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The Official Website of Fort Campbell and the 101<sup>st</sup> Airborne Division



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