Steep, bluff-top prairies are an important, yet nearly unknown, Illinois resource.

Hill Prairies

Steep bluffs can make just getting onto a hill prairie a trick in and of itself.

Story and Photos By
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Hill prairies, as the name suggests, are associated with hills. However, being on top of a hill is not their defining characteristic. Their distribution is limited to the bluffs along major drainageways in complete contrast with the rest of the prairies in the Midwest. At the time of European settlement, the vast prairies of central and northern Illinois occupied most of the land, with forests generally restricted to isolated groves and corridors surrounding waterways, including broad bands around the major rivers such as the Sangamon, Illinois and Mississippi. It was in those forests that small, isolated hill prairies were nestled like a set of Russian dolls.

While the prairies in the state were falling to the plow, steep, bluff-top locations prevented hill prairies from being converted to row crops. As the land was settled, goats became the livestock of choice for these prairie openings, which were too steep for use by cattle. Goats haven't been pastured on the prairies for many years and, although the grazing caused degradation, the land has been more or less fallow since the use of goats as livestock waned.

Hill prairies have been, and are currently being, lost due to two primary factors: people and trees. Mining was the main development pressure over the last 70 or 80 years. Many hill prairies are perched on exposed lime-

The typical "death-of-a-hill-prairie" occurs slowly over time as trees eventually squeeze out the open areas.

stone faces and quarrying resulted in the loss of a number of them for the simple reason that mining companies saved time and money on the initial costs of tree clearing.

Currently, most development pressure is from residential housing as more people are choosing to move to rural areas. Anyone who has stood at the top of a bluff overlooking a large river valley can attest to the spectacular view. But development isn't the most significant pressure being put on them…hill prairies are quickly becoming forests.

Hill prairies generally occur on west- and south-facing bluffs, coinciding with the direction of prevailing winds. As the sun beats down on the wide floodplains, they heat up and the winds push the warm air up against the bluffs. On south- and west-facing bluffs, these winds do a terrific job of drying out the soil and make it difficult for most trees to get started.

The first intruder on a hill prairie is typically eastern red cedar. These trees become established toward the

Hill prairies may be perched on top of steep, exposed rock faces or on steep, rolling hills extending down to the floodplain.

The spectacular views offered by the hill prairies are being lost as forests overtake them.

base of the hill prairie where they begin to act as wind breaks. Shrubs, such as dogwoods and sumac, begin to move out from the forest line on the backside of the bluff and establish themselves in the ravines along the bluff line. While cedars continue to march up the hillside, shrubs move farther forward and are then overtaken themselves by larger hardwoods such as hickories and maples. Eventually, cedars also are overtaken by the larger hardwoods and the prairie is no more.

The physical shape of the face of the bluff seems to have a significant impact on how quickly the hill prairie becomes forested. Bluff faces can be divided between those that have exposed vertical rock outcrops and those that have a relatively constant steep slope with no exposed rock from the floodplain up beyond the crest of the bluff.

Hill prairies remaining today are almost exclusively situated on top of bluffs with exposed rock faces. It seems the trees have a harder time making the 'jump' up above the exposed rock than they do steadily climbing a hill. The few remaining hill prairies lacking exposed rock faces are under fairly intensive management to keep them open (Revis and Meredosia hill prairies are examples).

A great deal of information is left to gather about the ecological history of hill prairies, but we are currently losing them at a quickening pace. Land management techniques are continually being evaluated on those few remaining hill prairies that are being actively managed to determine the most effective way to maintain and/or reclaim area lost. Most hill prairies are on private lands and although Department of Natural Resources biologists can work with the land owners, it is entirely up to the owner to decide how their land is used.

Management of these resources is necessary to maintain what is left of them. Yet, relatively few are actively managed.

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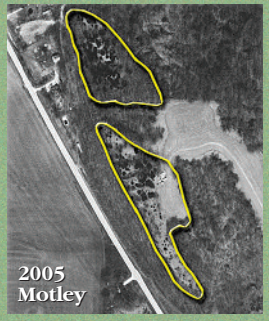
(Photos courtesy U.S. Geological Survey.)

A picture is worth a thousand words. These 1939 and 2005 aerial photographs show two hill prairie 'knobs,' one of which has had an active management plan to keep the site open (top arrow, Jennings Hill Prairie Nature Preserve) and one that does not (bottom arrow). A few notable things in the '39 aerial is that parts of both hill prairies extended from the floodplain up beyond the crest of the bluff and the forest canopy surrounding the hill prairies is significantly more open than it is today (individual tree outlines can be seen in 1939). Despite the fact that the nature preserve has been managed with both fire and mechanical clearing, the total open area had been greatly reduced by 2005. The hill prairie south of the nature preserve has not had any management, has been fragmented and most of the formerly open area has been lost.



Although both of these hill prairies have lost much of their open space, they have fared better than most. These aerials show the same time lapse for two other hill prairies north of the nature preserve. Due to the almost complete enclosure of the prairies in 2005, the boundaries as defined in 1939 are depicted on each aerial.