

In the Spotlight: *Xeric Red Cedar - Oak Forest/Woodland*

by Brian Yahn, Vegetation Ecologist

A unique but quite common community in Kentucky is the Xeric red cedar - oak forest/woodland, one of several xeric forest/woodland types. This forest/woodland ranges from dry to very dry (i.e. xeric) and often has a semi-open canopy (i.e. woodland= semi-open canopy, forest=closed canopy). Soils are usually thin and bedrock is often exposed (amount of bedrock exposed varies from site to site). This community is usually found on south and west-facing slopes often along upper slopes near ridge tops and also just above bluffs/cliffs of stream corridors. Xeric red cedar - oak forest/woodlands are also known to occur around glades (i.e. dry bedrock communities) where in the past, fire played a more significant role in shaping the openness of the community and eastern red cedar was less of a dominant in the canopy and understory. These forest/woodlands are usually developed over limestone but when soils are neutral or slightly acidic, this community can occur over sandstone, siltstone and shale. Outside of Kentucky, communities most similar to these forest/woodlands are found scattered throughout surrounding states and likely throughout the native range of eastern red cedar (from the eastern Midwest to Eastern U.S., south to southern Georgia and eastern Texas).

KSNPC's classification of Xeric red cedar - oak forest/woodland broadly describes dry cedar-oak woodlands across Kentucky. But a few of these woodlands in Kentucky have distinctive compositions of plants and support several rare species. One example occurs above Jessamine Creek in Jessamine County, within Kentucky's Bluegrass Region. According to NatureServe (the national authority on the status of rare species and natural communities), this community is considered globally imperiled (=G2). Another dry limestone woodland in the Knobs Region is also considered globally imperiled (=G2) (NatureServe 2010).

When describing this community, the canopy is fairly distinctive as the trees are somewhat limited to certain habitats. Red cedars, chinquapin oaks and blue ash are abundant in this community, preferring dry, rocky places and limestone bedrock. Blackjack and post oaks do well in these dry, rocky soils but can also tolerate higher acidic conditions, like over sandstone (they can be present but usually not dominant). The trees of the canopy are often gnarled and stunted, especially in

the driest and rockiest habitats. Common shrub and midstory trees include Carolina buckthorn, Carolina rose, dwarf hackberry, eastern redbud, fragrant sumac and rusty blackhaw. The herb layer can range from sparse to dense (usually of moderate cover), dominated by drought-tolerant plants. The most common and characteristic grass is poverty oat-grass but other grasses like little bluestem, muhly grasses, panic grasses, rosette grasses and wild ryes may be present. Common and characteristic wildflowers (i.e. forbs) include aromatic aster, Canadian summer bluet, downy pagoda-plant, hoary puccoon, meadow zizia and nodding onion. Other characteristic but restricted plants (i.e. only common in a fraction of examples) include bastard toadflax, beebalm, purple cliffbrake, moss phlox, pitcher's stitchwort and prostrate blue violet.

In Kentucky, Xeric red cedar - oak forest/woodlands provide habitat for unique species of plants and animals, a few found nowhere else outside of this community. At least 11 KSNPC-listed plants have been documented on or in close association with these forest/woodlands (KSNPC 2012). These associated rare species (not highlighted below or listed above) include the Canby's mountain-lover, cleft phlox, cutleaf meadow-parsnip, globe bladderpod, mock orange, plains muhly, purple oat, September elm, snowberry, starry-cleft phlox and Svenson's wildrye. Other unique critters often found associated with xeric limestone woodlands include cave salamanders, prairie warblers and numerous

species of butterflies and moths.

Although more stable (disturbance tolerant) than other natural communities, due to bedrock exposure and dominance by drought-hardy vegetation, xeric forest/woodlands are still vulnerable to human disturbance. In many areas, these forest/woodlands, although rocky, can still be logged or logged on the margins which can devastate the community, changing the vegetative structure and plant composition and allowing woody seedlings, native weeds and invasive non-native weeds to replace more conservative species. Xeric forest/woodlands are also susceptible to grazing which (along with logging) allows erosion of thin soils, scaring the woodland/forest for years into the future. Consequently, the erosion and shifting soils also present ideal conditions for undesirable species invasion like exotic vines such as Japanese honeysuckle.

References

[KSNPC] Kentucky State Nature Preserves Commission. 2009. Natural communities of Kentucky. Working draft. Frankfort, Ky.

[KSNPC] Kentucky State Nature Preserves Commission. 2012. Kentucky Natural Heritage Database. Kentucky State Nature Preserves Commission, Frankfort, Ky.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life. NatureServe, Arlington, Va. Available www.natureserve.org/explorer.



A Xeric red cedar-oak forest/woodland found among the steep bluffs of the Green River, just east of Mammoth Cave National Park (spring). ~KSNPC photo by Marc Evans



Juniper Hairstreak *Callophrys gryneus*

KSNPC Status: None

USFWS Status: None

General Description: A distinct hairstreak butterfly with underside of wings primarily green and with tawny lines outlined in white. Upperside of wings dark brown with olive-colored sheen in males and blackish brown in females. Small tails on back of hindwings. Wingspan 1–1.25 inch.

Habitat: Rocky bluffs, glades, and old fields with eastern redcedar (*Juniperus virginiana*). Adults often found nectaring on flowers in fields near the larval foodplant.

Larval Foodplant: In Kentucky larvae feed on eastern redcedar.

Flight Season: Two broods in Kentucky, peaking in April and July.

Range: Much of the United States with a few occurrences in Mexico.



Photo by Ellis Laudermilk, KSNPC

Wild dill *Perideridia americana*

KSNPC Status: Threatened

USFWS Status: None

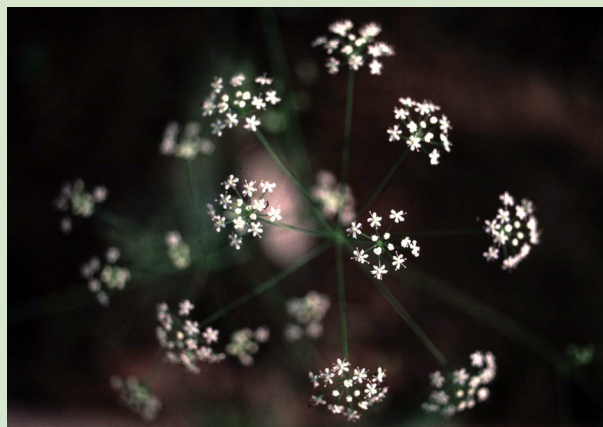
General Description: A delicate plant with leaves divided into very slender segments. Plants are erect to 2-3 ft. The flowers are clusters of white flat-topped heads, somewhat similar to the weed, Queen Anne's lace. Found in xeric (meaning very dry) woodlands.

Habitat: Xeric woodland around glade and rock outcropping communities.

Flowering Period: Usually early summer.

Range: Wild dill is more common in Missouri and Illinois at the north part of the range and rare in the states to south and east. In Kentucky, it is found from the Ohio River counties in the west, along the southern state border, and the Bluegrass Region.

Reason for Protection Status: Habitats have been degraded due to hydrologic changes and habitat destruction.



KSNPC Photo by Kurt Emmanuele, TNPS

Fence Lizard *Sceloporus undulatus*

KSNPC Status: None

USFWS Status: None

General Description: A small to medium-sized gray or brown lizard showing strong arboreal tendencies. Fence lizards are the only spiny lizard in Kentucky, having keeled and pointed dorsal scales. Mature individuals range from 4 to 7 ¼ inches. Females often have black horizontal patterning on their back, while dorsal lines are indistinct or absent on males. Males have bright blue patches on their chin and sides of belly. When disturbed, fence lizards will climb the nearest tree and remain motionless on the opposite side of the trunk. If approached, they will continue up the tree until out of reach.

Habitat: Fence lizards occupy dry, sunny woodlands throughout Kentucky and can often be seen scrambling around logs, stumps, fence posts, old rock piles, old building, or similar places.

Range: Distributed from New York to central Florida, extending west to eastern Kansas and Texas. A western subspecies extends south to Mexico, west to Utah, and north to southern South Dakota.



Photo by John MacGregor

