

Currently, 275 plants are state-listed as endangered or threatened through the Rare Plant Recognition Act.²⁰ Another 57 appear to be declining and are KSNPC-listed as special concerns.¹¹ Forty-eight plants, including eight that are federally listed, are globally rare (G1–G3) and are of the highest conservation priority.

A chain is only as strong as its weakest link; likewise, a flora is only as resilient as its most vulnerable

plants. Evidence indicates that many vulnerable species continue to decline, despite conservation efforts:¹¹

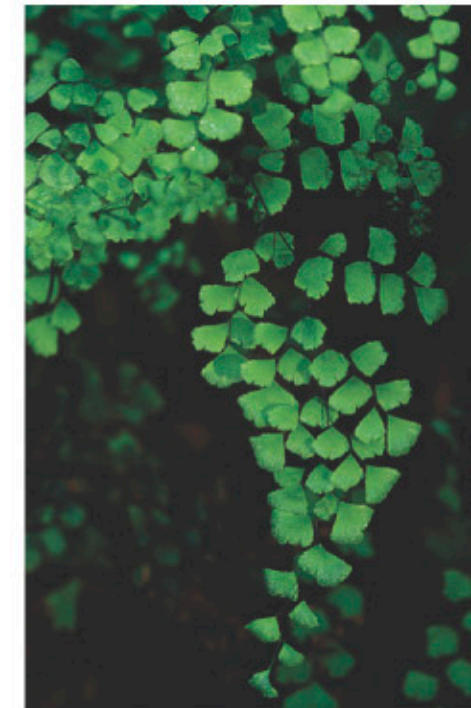
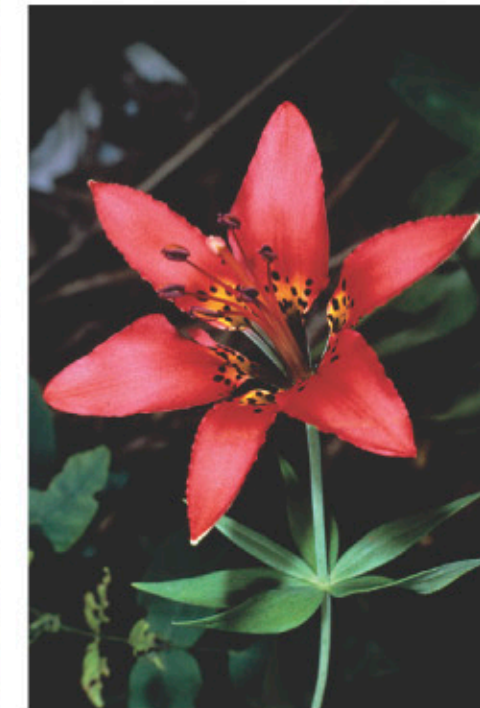
- About 725 documented occurrences of listed plants—no doubt a small portion of the actual number—are either extinct or historical (not seen in 20 years or more).

- The number of plant species that are designated historical has increased from 21 in 1993 to more than 60 in the last few years, a possible indication that native plants are disappearing from the state.
- About 30% of the KSNPC-listed plants are known from only one county, and 70% are known from five or fewer counties.
- Sixty-two listed plants do not occur on either private land that is managed for conservation or public lands.

Habitat loss is the take-home message from the decline in Kentucky's flora. Excess nutrients from fertilizers and sedimentation affect aquatic plants. Exotic pest plants can replace not only rare plants but the entire herbaceous flora. Introduced diseases have endangered trees such as American chestnut and white walnut. Plants are generally resilient enough to adapt to change, but the dramatic changes in the environment in recent decades are outpacing their abilities. Provided here are a few examples of rare plants associated with different habitat types and the kinds of habitat degradation that have led to their decline.

Eggert's sunflower requires periodic fire. Like many dry grassland and woodland species, this plant is adapted to the conditions created by burning and has responded well in sites managed with fire. Eggert's sunflower was federally listed and then subsequently removed from national listing when more populations were found in Tennessee. Eggert's sunflower remains KSNPC-listed as threatened in Kentucky because there are so few populations in the state, and woodland and glade habitat continues to decline.

Grassland habitat not only occurs under dry conditions; fire also creates natural grassy openings in mesic and wet areas. Wood lily is associated with open grassy forests, from dry to very moist sites. The grassy groundcover in these habitats disappears



if natural disturbance cycles, such as periodic fire, are disrupted. When this habitat declines, wood lily may be relegated to forested edges, the only remaining habitat with sufficient light for this species.

Some openings are maintained by fire, but others are a result of soil and geologic conditions. Fameflower, a beautiful little plant that is best seen by lying belly to the ground, is adapted to small pockets of soil on expanses of flat rock outcrops, a type of glade. Its succulent leaves and threadlike flowering stem conserve water in this harsh environment. Numerous other rare plants have adapted to geologic features like rockhouses and cliffines. These habitats are detrimentally affected by erosion and excessive use. All-terrain vehicles, for instance, can cause severe damage to the thin soils in glades, in particular; once the habitat is altered, weedy plants become dominant, and the native flora declines.

Kentucky lady's-slipper orchid is typically found in floodplains where alteration of surface or under-

left to right:
Limestone fameflower blooms at about four o'clock in the afternoon. *Thomas G. Barnes*

Wood lily has declined as a result of habitat loss and may also be overcollected by plant enthusiasts and sellers. *Julian Campbell*

Southern maidenhair fern, one of 80 species of fern in Kentucky, is found in limestone seeps. *Thomas G. Barnes*