

*Conservation Assessment
for
Prairie Parsley (*Polytaenia nuttallii*)*



Photo credit: Dan Busemeyer

USDA Forest Service, Eastern Region
November 2002

Alice Long Heikens, Ph.D.
Franklin College

Hoosier National Forest



This Conservation Assessment was prepared to compile the published and unpublished information and serves as a Conservation Assessment for the Eastern Region of the Forest Service. It does not represent a management decision by the U.S. Forest Service. Though the best scientific information available was used and subject experts were consulted in preparation of this document, it is expected that new information will arise. In the spirit of continuous learning and adaptive management, if you have information that will assist in conserving the subject community, please contact the Eastern Region of the Forest Service - Threatened and Endangered Species Program at 310 Wisconsin Avenue, Suite 580 Milwaukee, Wisconsin 53203.

Table Of Contents

EXECUTIVE
SUMMARY.....4
ACKNOWLEDGEMENTS.....
.....4
NOMECLATURE AND
TAXONOMY.....5
DESCRIPTION OF
SPECIES.....5
HABITAT.....
.....6
LIFE
HISTORY.....
7
DISTRIBUTION AND
ABUNDANCE.....7
PROTECTION
STATUS.....7
REFERENCES.....
.....8

EXECUTIVE SUMMARY

Barrens and glades occur at scattered sites on the Hoosier and Shawnee National Forests, and are found widely on the Mark Twain National Forest. Expressions of the barrens community on National Forest System lands are currently recognized on the Hoosier at a few sites within the Brown County Hills and the Crawford Escarpment, and at several sites in the Crawford Uplands. On the Shawnee, barrens are found as small remnants in the Cretaceous Hills, and the Greater Shawnee Hills, Lesser Shawnee Hills, and the Illinois Ozarks have more and somewhat larger communities. Barrens and glades are often large within most of the natural divisions found on the Mark Twain.

Barrens are characterized by species of canopy trees tolerant of xeric conditions having a stunted, open-grown appearance, the dominance of native warm-season grasses and prairie forbs, and, in glades, significant exposures of bedrock. The mix of plants and animals inhabiting these sites varies with the canopy openness, internal structure of the stands, slope, aspect, and other less tangible variables. The barrens is an ecosystem, not merely a hole in the forest filled with prairie plants.

The purpose of this assessment is to bring together the best available information about this community, provide a summary of the character and distribution of barrens across the three Forests, and provide similar information about six RFSS found in this habitat. An additional purpose is to provide the background information necessary to prepare a Conservation Strategy, including management actions to conserve species discussed in this assessment.

[\(Barrens and glades conservation assessment\)](#)

ACKNOWLEDGEMENTS

Deb Albright (Hoosier National Forest), Sybill Amelon (North Central Forest Experiment Station), Nancy Berlin (R9 Regional Office), Jody Eberly (Mark Twain National Forest), Stan French (Mark Twain National Forest), Ron Hellmich (Indiana Department of Natural Resources, Division of Nature Preserves), Henry Holman (Mammoth Cave National Park), Mike Homoya (Indiana Department of Natural Resources, Division of Nature Preserves), Garry Houf (Mark Twain National Forest - retired), Max Hutchison (The Nature Conservancy – retired), Ellen Jacquart (The Nature Conservancy – Indiana), Brian Keith (Indiana Department of Natural Resources, Division of Geological Survey), Phil Koenig, R.L. Heitzman, Dennis Kolata (Illinois State Geological Survey), Tim Nigh (Missouri Department of Natural Resources), Paul Nelson (Mark Twain National Forest), Rick Olson (Mammoth Cave National Park), James Palmer (Missouri Department of Conservation, Geological Survey), Elizabeth Raikes (Land-Between-the-Lakes), James Taylor, Debbie Seibert (Perry County Library), Beth Shimp (Shawnee National Forest), Jody Shimp (Illinois Department of Natural Resources), Tara Gibbs and Sally Weeks (Purdue University).

NOMECLATURE AND TAXONOMY

Polytaenia nuttallii DC.

The only synonym for *P. nuttallii* is *Pleioteania nuttallii* (DC.) Coult. & Rose (Kartez 1994).

Prairie parsley is the sole common name.

Polytaenia nuttallii is a member of Apiaceae, a.k.a. Umbelliferae, which contains approximately 300 genera and 3000 species (Gleason and Croquist 1991). Two species of *Polytaenia* are recognized in the U. S., *P. nuttallii* and *P. texana* (NatureServe 2001). Since the later is restricted to Texas and Oklahoma and does not enter the study area there is no attempt to distinguish the two species in this paper.

DESCRIPTION OF SPECIES

Polytaenia nuttallii is a native, cool-season, smooth or finely pubescent perennial that

may be up to 1m in height. The large and showy inflorescence is comprised of 15 to 25 small (up to 2mm wide) flowers in umbels that lack bracts. The flowers have five yellow petals and five protruding stamens. The large (up to 18cm long) clasping leaves are deeply dissected into coarsely toothed lobes. The upper leaves are nearly sessile and may be opposite although most leaves are alternate (Figure 60). The vernacular description was compiled from Voigt and Mohlenbrock (1980), Steyermark (1954), Dennison (1990), Hunter (1984), Ladd (1995), and Farrar (1990). For a complete species description see Appendix IV.

In the study area there is only species of *Polytaenia*; therefore, the characteristics found below are used to distinguish *Polytaenia* from other similar genera in Apiaceae. Important characteristics of *Polytaenia* include the following: plants at least 3dm tall (Gleason and Cronquist 1991); taller than *Thaspium trifoliatum* and *Zizia aurea* (Hunter 1984); fruits 5-10mm long, strongly dorsally flattened, the lateral ribs with conspicuous (thick and corky) wings, dorsal ribs filiform or very narrowly winged (Gleason 1963, Gleason and Conquist 1991, Small 1933, Smith 1994); larger leaves bipinnately compound or ternate-pinnate (Smith 1994); upper leaves pinnately compound or ternate-pinnate, divided into 5-many segments (Smith 1994); plant with taproot (Gleason and Cronquist 1991); stylopodium absent (Gleason and Cronquist 1991); carpophore bifid to the base (Gleason and Conquist 1991); bracklets of the umbellets inconspicuous (Gleason 1963); upper peduncle with minute papillate pubescence (Smith 1994); oil tubes several in the intervals of the fruit (Small 1933); leaflets of cauline leaves cuneate at base, rarely greater than 10 mm broad (Mohlenbrock 1986); and leaflets toothed or lobed (Mohlenbrock 1986).

HABITAT

Polytaenia nuttallii is most often found on prairies, glades, barrens, open (oftentimes rocky) woods (Voigt and Mohlenbrock 1980, Steyermark 1954, Steyermark 1963, Fernald 1950, McGregor and Barkely 1986, Gleason and Conquist 1991, Small 1933, Swink and Wilhelm 1994, Mohlenbrock 1986, Deam 1940, Yatskievych 2000), and occasionally on “glade-like blufftops” in **Missouri** (Yatskievych 2001). In Missouri, it is often associated with acidic soils, especially chert (Ladd 2000). Although it typically is found in dry or dry-mesic habitats, in Wisconsin, it is located on a rich, wet-mesic prairie (Eddy 1983).

In the St. Francis Mountains in **Missouri**, the species is found growing with *Dodecatheon meadia* (Nelson 2001).

In **Indiana** at Boone Creek Barrens on the Hoosier National Forest, associated species listed for 1992 were *Helianthus divaricatus*, *Panicum boscii*, *Coreopsis tripteris*, *Silphium trifoliatum*, and *Schizachyrium scoparium*. Associated species in 2000 were *Agave virginica*, *Scutellaria parvula*, *Melica metica*, *Eryngium yuccifolium*, *Phlox pilosum*, *Hypoxis hirsuta*, and *Quercus stellata* (Indiana Department of Natural Resources 2002).

In **northern Illinois**, *Andropogon gerardii*, *Schizachyrium scoparium*, *Apocynum androsaemifolium*, *Aster ericoides*, *A. laevis*, *Baptisia bracteata*, *Coreopsis palmata*, *Eryngium yuccifolium*, *Euphorbia corollata*, *Gentiana puberulenta*, *Heuchera richardsonii*, *Hypoxis hirsuta*, *Lathyrus venosus*, *Lithospermum canescens*, *Parthenium integrifolium*, *Dalea purpureum*, *Phlox pilosa*, *Rosa carolina*, *Silphium integrifolium*, *Silphium terebinthinaceum*, *Sisyrinchium albidum*, *Solidago rigida*, *Sporobolus heterolepis*, *Stipa spartea*, and *Tradescantia ohiensis* are listed as associates (Swink and Wilhelm 1994).

Tennessee: Between Bakers Station in Davidson County and Ridgetop in Robertson County: *Carya glabra*, *Quercus stellata*, *Ulmus alata*, *Bumelia lycoides*, *Crataegus* sp., *Juniperus virginiana*, *Hypericum frondosum*, *Rosa carolina*, *Viburnum rudifolium*, *Agalinis tenuifolia*, *Allium cernuum*, *Andropogon virginicus*, *Asclepias tuberosa*, *Cheilanthes lanosa*, *Erigeron strigosus*, *Dodecatheon meadia*, *Euphorbia corollata*, *Helianthus divaricatus*, *Agave virginica*, *Panicum* spp., and *Solidago* spp. (Chester and Wofford 1992).

New Hope Barrens in McNairy County: *Cercis canadensis*, *Fraxinus americana*, *Juniperus virginiana*, *Rhus glabra*, *Symphoricarpos orbiculatus*, *Toxicodendron radicans*, *Erigeron strigosus*, *Lespedeza cuneata*, *Melilotus alba*, *Monarda fistulosa*, *Prunella vulgaris*, *Ratibida pinnata*, *Silphium integrifolium*, *Solidago* spp., and *Verbesina* spp. (Chester and Wofford 1992).

Kentucky: Land Between the Lakes in Trigg County: *Carya glabra*, *Nyssa sylvatica*, *Quercus alba*, *Q. marilandica*, *Q. stellata*, *Q. velutina*, *Andropogon virginicus*, *A. ternarius*, *A. elliotii*, *Asclepias amplexicaulis*, *A. variegata*, *Baptisia bracteata*, *Chrysanthemum leucanthemum*, *Coreopsis major*, *C. tripteris*, *Danthonia spicata*, *Erigeron strigosus*, *Eryngium yuccifolium*, *Euphorbia corollata*, *Helianthus divaricatus*, *Liatris squarrulosa*, *L. squarrosa*, *Oenothera fruticosa*, *Panicum* spp., *Parthenium integrifolium*, *Rudbeckia hirta*, *Sabatia angularis*, *Solidago juncea*, *S. nemoralis*, *Stylosanthes biflora*, and *Tephrosia virginiana* (Chester and Wofford 1992).

LIFE HISTORY

Polytaenia nuttallii is a perennial herb from a thickened taproot. Its flowering period extends from April through June, and fruiting from June to August.

DISTRIBUTION AND ABUNDANCE

Polytaenia nuttallii is found in a number of central and midwestern states from North Dakota to Indiana south to New Mexico and Alabama (Figure 61). It is presumed extirpated in Kentucky (Chester and Wofford 1992) and Michigan (Voss 1985).

Deam (1940) reported *Polytaenia nuttallii* from four counties, primarily in northwestern Indiana: Jasper, La Porte, Newton, and Harrison. Several of these populations are extirpated, but additional populations have been recently located (Figure 62). Currently,

there are seven extant populations. *Polytaenia nuttallii* is reported from over 40 counties in Illinois (Ketzner and Karnes 1998) (Figure 63) but is described as “occasional throughout the state” (Mohlenbrock 1986). Swink and Wilhelm (1994) assigned it a coefficient of conservatism of 10, indicating that it is representative of presettlement conditions. The species is common in Missouri (Figure 64), found in almost all of the southwestern counties including the Osage Plains Natural Division and parts of the Ozarks and Glaciated Plains natural divisions (Yatskievych 2001). Scattered populations occur east to St. Louis and north to Iowa, but it is absent from the Mississippi Lowlands Natural Division and the southeastern Ozarks (Yatskievych 2001). *Polytaenia nuttallii* is a “characteristic conservative species of mesic and dry-mesic prairies” and has been assigned a coefficient of conservatism of 8 (Ladd 2000). Although it is not a dominant species, it is among the top 15 percent of species in terms of frequency (Ladd 2000).

PROTECTION STATUS

Polytaenia nuttallii is ranked as G5, indicating that it is widespread, abundant and apparently secure (NatureServe 2002).

Ranking by individual states is: Alabama (SR), Arkansas (SR), Illinois (S?), Indiana (S1), Iowa (S3), Kansas (SR), Kentucky (SX), Louisiana (S?), Michigan (SX), Minnesota (S3), Mississippi (S2), Missouri (SR), Nebraska (S4), New Mexico (SR), North Dakota (SR), Oklahoma (SR), Tennessee (S1), Texas (SR), Wisconsin (S2)

In some states it is considered rare or endangered, such as Indiana, Minnesota, Mississippi, Tennessee, and Wisconsin (Chester and Wofford 1992, Eddy 1983, NatureServe 2001), but in others it is either common or simply listed as state reported (NatureServe 2001). In Indiana, the species is listed as state endangered (Indiana Department of Natural Resources 2002, Yatskievych 2000). The species is not state listed (Illinois Endangered Species Protection Board 1999) and is not monitored by the Illinois Department of Conservation. The species is common in Missouri.

REFERENCES

Chester, E.W., and B.E. Wofford. 1992. Distribution and status of *Polytaenia nuttallii* DC., prairie-parsley, in Tennessee and Kentucky. Tennessee Academy of Science 67:51-54.

Deam, C.C. 1940. Flora of Indiana. W. B. Burford Printing, Inc. Indianapolis, IN. 1236 pp. 1236.

Dennison, E. 1990. Missouri wildflowers: a field guide to wildflowers of Missouri and adjacent areas, 5th ed. Missouri Department of Conservation. Jefferson City, MO. 286 pp.

Eddy, T.L. 1983. A vascular flora of Green Lake County, Wisconsin. Masters Thesis.

University of Wisconsin – Oshkosh. pp.

Farrar, J. 1990. Field guide to wildflowers of Nebraska and the Great Plains. NEBRASKAland Magazine. Nebraska Game and Parks Commission. Lincoln, NE. 215 pp.

Fernald, M.L. 1950. Gray's manual of botany, 8th ed. American Book Co. New York. 1632 pp.

Gleason, H.A. 1963. The new Britton and Brown illustrated flora of the northeastern U. S. and adjacent Canada, Vol I. Hafner Pub. Co, Inc. New York. 595 pp.

Gleason, H.A., and A. Cronquist. 1991. Manual of vascular plants of northeastern U. S. and adjacent Canada, 2nd ed. New York Botanical Garden. Bronx, NY. 910 pp.

Hunter, C.G. 1984. Wildflowers of Arkansas. The Ozark Society Foundation. Little Rock, AR. 296 pp.

Illinois Endangered Species Protection Board. 1999. Checklist of endangered and threatened animals and plants of Illinois. Illinois Department of Natural Resources. Springfield, IL. 20 pp.

Indiana Department of Natural Resources. 2002. Division of Nature Preserves Database. Indianapolis, IN.

Ketzner, D., and J. Karnes, eds. 1998. Illinois Plant Information Network: *Polytaenia nuttallii*. Illinois Natural History Survey. Champaign, IL, USA. Retrieved August 1, 2002. <http://www.fs.fed.us/ne/delaware/ilpin> .

Ladd, D. 1995. Tallgrass prairie wildflowers: a field guide. Falcon Press Pub. Co., Inc. Helena, MT. 199 pp.

Ladd, D. 2000. Personal Communications. The Nature Conservancy. St. Louis, MO.

McGregor, R.L., and T.M. Barkley. 1986. Flora of the Great Plains. University Press of Kansas. Lawrence, KS. 1392 pp.

Mohlenbrock, R.H. 1986. Guide to the vascular flora of Illinois. Southern Illinois University Press. Carbondale, IL. 507 pp.

NatureServe Explorer: An online encyclopedia of life [web application]. 2001. Version 6.1. Arlington, VA, USA: NatureServe. Available: <http://www.natureserve.org/explorer> . Accessed July 11, 2002.

Nelson, P. 2001. Personal Communications. Mark Twain National Forest. Rolla, MO.

Olson, S. 1999. Regional Forester Sensitive Species Risk Evaluation for *Polytaenia nuttallii*. Unpublished report. U. S. Forest Service. Tell City, IN.

Small, J.K. 1933. Manual of the southeastern flora. Science Press Printing Co. Lancaster, PA. 1554 pp.

Smith, E. 1994. Keys to the flora of Arkansas. University of Arkansas Press. Fayetteville. 363 pp.

Steyermark, J.A. 1954. Spring flora of Missouri. Lucas Brothers Pub. Columbia, MO. 582 pp.

Steyermark, J.A. 1963. Flora of Missouri. Iowa State University Press. Ames, IA. 1725 pp.

Swink, F., and G. Wilhelm. 1994. Plants of the Chicago region. Southern Illinois University Press. Carbondale. 921 pp.

Voigt, J.W., and R.H. Mohlenbrock. 1980. Prairie plants of Illinois. Department of Conservation. Springfield, IL. 271 pp.

Voss, E.G. 1985. Michigan flora, Part II: Dicots (Saururaceae – Cornaceae) Cranbrook Institute of Science. Ann Arbor, MI. 724 pp.

Yatskievych, G. 2001. Personal Communications. Missouri Botanical Gardens. St. Louis, Missouri.

Yatskievych, G. 2002. Personal Communications. Missouri Botanical Gardens. St. Louis, Missouri.

Yatskievych, K. 2000. Field guide to Indiana wildflowers. Indiana University Press. Bloomington, IN. 357 pp.