

Notes on Ohio Vascular Plants Previously Considered for Listing as Federally Endangered or Threatened Species

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ABSTRACT

Twenty native Ohio vascular plant taxa, previously considered for review by the United States Fish and Wildlife Service as possibly federally endangered or threatened, were studied over a two-year period to assess their rarity and threat of extirpation, nationally and in Ohio. Current information indicates that *Aconitum noveboracense* should be maintained as federally threatened, and that *Calamagrostis insperata*, *Plantago cordata*, and *Platanthera leucophaea* should be considered for listing as federally threatened. Current data on the status of *Poa paludigena*, *Potamogeton hillii*, *Synandra hispidula*, and *Trollius laxus* are too limited to make an adequate recommendation as to possible federal status. Although rare in Ohio, *Cypripedium candidum* and *Veratrum woodii* are apparently more frequent elsewhere and presently do not warrant listing. Unresolved taxonomic problems prevent specific recommendations for *Polygonum pennsylvanicum* var. *eglandulosum*, and *Rhus trilobata* var. *arenaria*. Taxa frequent throughout much of their ranges, including Ohio, that do not appear to warrant listing are *Panax quinquefolius*, *Platanthera flava*, *Platanthera peramoena*, *Polemonium reptans* var. *villosum*, and *Sullivantia sullivantii*. Hybrids that do not meet the definition of "species" under the Endangered Species Act are *Asplenium X ebenoides*, *Asplenium X kentuckiense*, and *Muhlenbergia X curtisetosa*.

Several taxa of native Ohio vascular plants were placed under review by the U.S. Fish and Wildlife Service (Schreiner 1975) as a result of the Smithsonian Institution's report on endangered and threatened plant species in the United States (Ripley 1975). This notice was revised by Lamberton (1980). The Ohio Department of Natural Resources, Division of Natural Areas and Preserves conducted a two-year (1979-1980) study of 20 taxa of federal concern under a contract with USFWS. During this period field and herbarium searches were made for the 20 taxa. Many new populations were located and the status of previously-known populations revised. The summary of the Division's recommendations to the USFWS reflects our present knowledge of these taxa both nationally and within Ohio.

The 20 taxa surveyed are listed alphabetically. Each paragraph contains a summary of our present knowledge of a taxon organized as follows: taxonomic or nomenclatural information, if applicable; county and habitat of Ohio populations; and national range and frequency, if applicable. The term "historical" is used here to indicate specimens collected in Ohio prior to 1950.

Aconitum noveboracense A. Gray (Ranunculaceae)

The Ohio plants have been treated as *Aconitum uncinatum* L. subsp. *noveboracense* (A. Gray) Hardin (Hardin 1964) or subsumed without rank into

A. uncinatum (Keener 1976). Brink (1982) suggests that Ohio populations may be related to the western *A. columbianum* Nutt. in T.&G., an hypothesis as yet untested. *Aconitum noveboracense* is extant in two populations in Ohio, one each in Portage and Summit counties. The plants grow on moist, shaded talus in wooded gorges, near seeps formed by a disconformity between permeable Pennsylvanian sandstones and impermeable Mississippian shales. The Summit County population has suffered a notable decline in recent years, apparently due to browsing by deer (Andreas 1980).

Asplenium X ebenoides R. R. Scott (Aspleniaceae)

The hybrid nature of this fern is well established (Wagner 1954) and as such it does not fit guidelines for federal listing. This taxon also may be treated as *X Asplenosorus ebenoides* (R. R. Scott) Wherry (Walter et al 1982). It presently is known from six sites in Greene, Highland, Morgan, and Washington counties, growing either on dolomite or sandstone. Each population consists of only one or two individuals.

Asplenium X kentuckiense T. N. McCoy (Aspleniaceae)

This hybrid taxon likewise is not federally listable. The first Ohio collection was from a sandstone cliff in Pike County in 1946. This site has been destroyed by quarrying. In 1979 this fern was collected on a sandstone exposure in Jackson County, but it has not been seen since at that location.

Calamagrostis insperata Swallen (Poaceae)

In Ohio, this grass is extant in two populations, one each in Jackson and Vinton counties. It grows in acidic soils of sunny openings in upland woods. One population occurs in an area that is logged periodically, but the plants seem vigorous and in little danger of extirpation. Outside Ohio, *C. insperata* is known only from a single county in Arkansas (Smith 1978) and two counties in Missouri (Steyermark 1963).

Cypripedium candidum Muhl. (Orchidaceae)

This orchid occurs in two populations in northwest Ohio, one in Henry County and one on the Erie-Sandusky counties border. This latter population is quite vigorous with thousands of individuals. Most of this population occurs in open moist fields which formerly had been strip mined for marl. The fields periodically are disced and burned to control woody vegetation, practices which seem to stimulate anthesis. As of 1979, *C. candidum* was observed in Portage County in northeast Ohio, but it may have disappeared from this site due to natural succession. Formerly this species was more widespread in the state. There are historical records from Lucas, Montgomery, Trumbull, and Wyandot counties. We were unable to locate a voucher for a report from Champaign County (Braun 1967).

Muhlenbergia X curtisetosa (Scribn.) Bush (Poaceae)

This grass has been described as a species (Bush 1919), a subspecies of *M. schreberi* Gmel. (Lamson-Scribner 1907), and a variety of *M. schreberi* (Steyermark & Kucera 1961). Pohl (1969) demonstrates that it is a hybrid derived from *M. schreberi* and some other rhizomatous species of the genus. Therefore it is not eligible for federal listing. No extant populations of this grass are known in Ohio. There are historical records from Belmont, Holmes, and Pickaway counties.

Panax quinquefolius L. (Araliaceae)

American ginseng occurs in more than 90 populations in 53 counties scattered across Ohio. There also are historical records from 10 other counties. It grows in a variety of mesic woodlands. The Ohio Ginseng Management Program documented the export of 11,120 pounds of dried ginseng root from Ohio in 1980 (Moseley 1981). Despite this collecting pressure, ginseng is not uncommon in southeast Ohio and it appears at present to be in little danger of extirpation. Its status is reviewed yearly by ODNR.

Plantago cordata Lam. (Plantaginaceae)

There are two known populations of this plantain in Ohio, one each in Adams and Mahoning counties. At one time this species was widely distributed over the state. There are historical records from nine scattered counties: Auglaize, Champaign, Clark, Erie, Franklin, Logan, Lorain, Lucas, and Madison. There also is a 1952 specimen from Scioto County. Recent searches in that county have failed to rediscover the species. The two extant Ohio populations occur in dissimilar habitats. In Adams County, more than 3600 individuals occur along the banks and in the bed of a shaded stream flowing over dolomite bedrock (Jones & Filbert 1981). The Mahoning County population consists of about 70 plants in rivulets in a swampy woodlot. This site is endangered by encroaching urban development, as are numerous populations throughout the range of this species (Meagher et al 1978).

Platanthera flava (L.) Lindl. (Orchidaceae)

Of the two varieties of *Platanthera flava*, only the var. *herbiola* (R. Brown) Luer occurs in Ohio (Luer 1975). There are extant populations in 10 Ohio counties: Ashtabula, Columbiana, Fulton, Jackson, Lawrence, Lucas, Portage, Scioto, Stark, and Vinton. There are historical records from 12 other counties: Crawford, Cuyahoga, Erie, Franklin, Gallia, Huron, Lake, Lorain, Summit, Trumbull, Wayne, and Wyandot. This species frequently is overlooked due to its inconspicuous appearance and sporadic flowering (Buker 1980). It probably is even more widespread than these records indicate, both nationally and within Ohio. *Platanthera flava* grows in a variety of wet or periodically moist situations, including swamp forests, floodplains, grassy fields, lake shores, seeps, and ditches. It seems to be in no danger of extirpation from the state.

Platanthera leucophaea (Nutt.) Lindl. (Orchidaceae)

Three populations of this orchid are known to be extant in Ohio, one each in Lucas, Ottawa, and Wayne counties. There are historical records from three counties: Auglaize, Erie, and Montgomery. This species has been reported from Champaign, Fairfield and Franklin counties (Braun 1967, Schaffner 1932). We were unable to locate vouchers for these reports. Ohio populations occur in moist, sunny, disturbed sites on calcareous substrates. Only the Wayne County population is extensive.

Platanthera peramoena (A. Gray) A. Gray (Orchidaceae)

In Ohio, there are more than 40 populations of this orchid extant in 11 counties: Athens, Brown, Clermont, Clinton, Gallia, Jackson, Lawrence, Perry, Scioto, Vinton, and Washington. There are historical records from seven other counties: Fairfield, Franklin, Hamilton, Highland, Hocking, Ross,

and Wayne. Braun (1967) lists this species from Adams County, but we could not locate a voucher. The species occurs in seasonally moist, acidic soils in a variety of habitats, including disturbed fields, openings in swamp forests, and ditches. This species is widespread in the east-central United States and similarly is not in immediate danger in Ohio (Spooner & Shelly 1983).

Poa paludigena Fern. & Wieg. (Poaceae)

This species has been collected only once in Ohio, in Pike County in 1953 from moist fields that may have been wet prairie remnants. The site has been disturbed by agriculture and recent searches have failed to rediscover this grass. It is presumed extirpated from Ohio.

Polemonium reptans L. var. *villosum* E. L. Braun (Polemoniaceae)

The variability of *Polemonium reptans* has long been recognized. Coulter (1900) and Wherry (1935) commented on plants of this taxon with villose, glandular pubescence. Braun (1940) described the variety, Wherry (1942) reduced it to the status of a form, and Davidson (1950) rejected any taxonomic rank for this variation. Braun (1956) defended var. *villosum*, but only Gleason and Cronquist (1963) recognize this taxon. More than 30 populations of the var. *villosum* are extant in five counties of southern Ohio: Adams, Highland, Pike, Ross, and Scioto. There is an historical record from Hamilton County. This taxon is the dominant variety in large portions of these counties, apparently completely replacing the typical variety in this area. Apparent intergrades between the two varieties are frequent at the fringes of the range of var. *villosum* and determination sometimes is difficult. Fifty-six percent of all known Ohio populations occur in areas with a high degree of protection and the taxon is in no danger of extirpation from the state.

Polygonum pensylvanicum L. var. *eglandulosum* J. C. Myers (Polygonaceae)

This taxon was described from South Bass Island, Ottawa County, Ohio (Myers 1942). It is distinguished by a lack of glandular hairs on the peduncles and a lack of pubescence on the remainder of the plant. Mitchell and Dean (1978, p. 47) state: "A number of varieties [of *P. pensylvanicum*] have been described on the basis of pubescence, glands, flower size, and color. . . . This polymorphic group is in need of further study." Presently, *Polygonum pensylvanicum* var. *eglandulosum* has been withdrawn from consideration for federal listing. On the basis of extensive collections and observations of this taxon on the Lake Erie Islands, however, Dr. R.L. Stuckey of The Ohio State University considers the plant a recognizable taxonomic entity (R. Stuckey, pers. comm., 1981). Specimens exist from calcareous shorelines, gravel bars, sandy beaches, and mudflats of Erie and Ottawa counties, Ohio. Stuckey (1975, p. 157) calls this taxon "a rare shoreline plant of wet, open, naturally disturbed habitats created by fluctuating water levels."

Potamogeton hillii Morong (Potamogetonaceae)

An extensive population of this pondweed was discovered in 1982 in Ash-tabula County. Hill (1881) collected this species from "stagnant" water of kettlehole ponds in the same county. The only other confirmed Ohio record is from Portage County (Fernald 1932). A report from Erie County (Schaffner 1915) is not listed by Braun (1967), Haynes (1974), or Schaffner (1932) and is probably in error. An Ottawa County report (Moseley 1899; Schaffner 1932) is

based upon a specimen at BGSU annotated by Ogden as *P. zosteriformis* Fernald or a related hybrid. Haynes (1974) notes that pollution and dredging are destroying the aquatic habitat of this species throughout its range. However, recent investigations in Michigan and in Massachusetts indicate that *P. hillii* may be locally common in some sections of those states (Haynes, pers. comm., 1983; Hellquist & Crow 1980).

Rhus trilobata Nutt. var. *arenaria* (Greene) Barkley (Anacardiaceae)

This sumac has been given a multitude of names, including: *Rhus arenaria* (Greene) G.N. Jones (Jones 1945); *R. aromatica* Ait. var. *arenaria* (Greene) Fernald (Fernald 1941); *Schmaltzia arenaria* Greene (Greene 1905); *Schmaltzia trilobata* (Nutt.) Small var. *arenaria* (Greene) Barkley (Barkley 1940); as well as *R. trilobata* Nutt. var. *arenaria* (Greene) Barkley (Barkley 1937). Most manuals consider this taxon an endemic of the Great Lakes region, particularly on sandy beaches (Barkley 1937, Greene 1905), although Barkley (1940) and Jones (1945) cite inland stations as well. Supposedly, it is a low shrub differing from other sumacs in time of anthesis, growth habit, pedicel length, and shape of the terminal leaflet. Close examination by Cusick of material from the range of the variety, including numerous collections and *in situ* observations, indicates that these characters are not reliable. There is only one Ohio collection which can tentatively be identified as this variety, an incomplete specimen from Ashtabula County, 1931. Plants from the Lake Erie counties of Ohio intergrade between the varieties of *R. aromatica* and cannot be assigned definitely to any single taxon. Further research is needed to clarify the taxonomic status of the varieties of fragrant sumac.

Sullivantia sullivantii (T.&G.) Britt. (*sensu* Rosendahl, 1927) (Saxifragaceae)

This species is endemic to southern Ohio and Indiana, with an unverified report from Kentucky (Braun 1943). Soltis (1980, 1981) considers the Ohio and Indiana material conspecific with *S. renifolia* Rosendahl of Illinois, Indiana, Iowa, and Wisconsin. In Ohio, the species is extant in more than 40 populations in six counties: Adams, Highland, Hocking, Jackson, Pike, and Ross. There are historical records from Muskingum, Scioto, and Vinton counties. The plants grow on moist dolomite or sandstone exposures in deep, wooded valleys. Many of the Ohio populations are substantial, with thousands of individuals. Forty percent of the known populations have some degree of protection. *Sullivantia* is not in danger of extirpation from Ohio.

Synandra hispidula Baillon (Lamiaceae)

Populations of this mint are known from seven counties of southern Ohio: Adams, Athens, Franklin, Hamilton, Lawrence, Morgan, and Perry. There are historical records from five other counties: Belmont, Butler, Clermont, Montgomery, and Scioto. Cusick and Silberhorn (1977) list this species for Ross and Washington counties and Schaffner (1932) reports it for Clark, Miami, and Wyandot counties. The basis of these records is unknown and some or all of them may be erroneous. Ohio populations vary greatly in size from less than a dozen to hundreds of individuals. *Synandra* in Ohio grows in mesic woodlands on slopes and stream terraces. It is known to disappear from areas after logging, but our observations suggest that it is able to recolonize

these sites after reforestation. We believe this species to be in moderate danger of extirpation from the state.

Trollius laxus Salisb. subsp. *laxus* (Ranunculaceae)

This taxon also may be treated as *T. laxus* var. *laxus* (Doroszewska 1974). *Trollius laxus* in Ohio is extant in a single population in Mahoning County. There are historical records from Fairfield, Stark, and Wayne counties. The basis of the Columbiana County report (Schaffner 1932) is unknown. The known population numbers about 200 individuals that grow in depressions in openings in a wet woods. Although about one-half of this population occurs on protected parkland, possible alteration of the drainage by urban development may endanger its continued existence.

Veratrum woodii Robbins ex Wood (Liliaceae)

This species is known from three counties of west-central Ohio: Miami, Montgomery, and Shelby. There is an historical record from Auglaize County. All but one population occur on shaded riverine terraces that are irregularly undated. One small population grows on the slopes of a mesic ravine. The populations range in size from but a few plants to hundreds of individuals. Ohio plants bloom erratically and little seed set has been observed. Stream channelization and development of riverine habitats pose significant threats to *Veratrum* in Ohio.

SUMMARY

Recommended Status of 20 Ohio Taxa Listed for Consideration as Federally Endangered or Threatened Species, based upon 1982 Data

1) The following taxa appear qualified to be retained or listed as federally threatened: *Aconitum noveboracense*, *Calamagrostis insperata*, *Plantago cordata*, *Platanthera leucophaea*.

2) The following taxa are extirpated from or rare in Ohio, but we cannot make a recommendation because of insufficient data on their status or vulnerability in other portions of their ranges: *Poa paludigena*, *Potamogeton hillii*, *Synandra hispidula*, *Trollius laxus* subsp. *laxus*.

3) The following taxa are very rare in Ohio but apparently are not in imminent danger of extirpation nationally. We recommend that these taxa be withdrawn from consideration at this time, but that their status be monitored to see if they should be considered for listing at some future date: *Cypripedium candidum*, *Veratrum woodii*.

4) The following taxa should not be listed until taxonomic problems are resolved with greater certainty: *Polygonum pensylvanicum* var. *eglandulosum*, *Rhus trilobata* var. *arenaria*.

5) The following taxa are frequent throughout much of their ranges, including Ohio, and are in little immediate danger of extirpation. We recommend that they be withdrawn from consideration for federal listing: *Panax quinquefolius*, *Platanthera flava*, *Platanthera peramoena*, *Polemonium reptans* var. *villosum*, *Sullivantia sullivantii*.

6) The following taxa do not meet the definition of a "species" under the Endangered Species Act: *Asplenium X ebenoides*, *Asplenium X kentuckiense*, *Muhlenbergia X curtisetosa*.

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