

## Rarely Seen Endangered Plants, Rediscoveries, and Species New to Illinois

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### INTRODUCTION

About 17% of the vascular plant species native to Illinois are officially listed as state-threatened or endangered. The original 1980 list (Sheviak 1981) included 312 endangered and 52 threatened species of vascular plants; the current list, revised in 1990 (Illinois Endangered Species Protection Board 1990), includes 296 endangered and 60 threatened species. Some species were included in these lists, based on historical herbarium records, but living populations were not known to occur in Illinois or were known from only one or a few locations. During 1987 and 1988, the authors undertook a project to review the status and to locate populations of 137 of these extremely rare species. In 1987, our emphasis was on locating species for which no extant populations were known. In 1988, our efforts concentrated on species not found during 1987 and on species for which only a few extant populations were known. Fieldwork focused on those species considered most likely to be extant or to be most critical on state and national levels. The results were submitted as unpublished reports to the Illinois Endangered Species Protection Board (Bowles *et al.* 1988, Bowles *et al.* 1989). Because those reports are not readily accessible, the information they contain is presented here.

### METHODS

Locations where the 137 selected species had been collected or observed historically were obtained from herbarium data compiled by the Natural Land Institute in 1977 during preparation of the original list of endangered and threatened species. Files

compiled by the Illinois Natural Areas Inventory during 1975-1978 and maintained since by the Illinois Department of Conservation Natural Heritage Division were also consulted extensively, as were personal contacts and notebooks of original collectors. We used this information to direct field searches. Because some location information is vague, especially for older records, we could not always determine exact historical locations, and field searches often required additional time and knowledge of local habitat and species ecology. In the course of these studies, we found it necessary to investigate the taxonomy and nomenclature of several species.

For each species in this report, we list two categories of distribution records: 1) the Illinois counties for which voucher specimens are known to exist (Known specimens), and 2) other Illinois counties where the species has been reported to occur, but for which we could not confirm the existence of specimens (Other reports). The second category includes cases in which we could find no record of herbarium deposition or private possession for specimens cited in the literature. Specimens recorded in herbarium holdings but not found in the cabinets are included in the first category and noted "specimen missing". For some species we list a third category of distribution records: 3) counties for which all reported occurrences of the species have been found to be in error (Erroneous reports). We note in each case whether the error is due to misidentification of specimens or to errors in published distribution maps. We have attempted to account for all counties indicated on distribution maps in Endangered and Threatened Plants (Sheviak

1981), Distribution of Illinois Vascular Plants (Mohlenbrock and Ladd 1978), and Vascular Plants of Illinois (Jones and Fuller 1955).

For all species, we report the county and year of the last known Illinois collection prior to the publication of Endangered and Threatened Plants (Sheviak 1981). Full citations for any subsequent collections or documented sightings are included in discussions of current population status. When recent collections represent new county records, these are noted as "new" in the distribution entries.

Nomenclature follows that used by Sheviak (1981) and the Illinois Endangered Species Protection Board (1990). Synonyms are noted when this nomenclature differs from that used in Kartesz and Kartesz (1980). Nomenclature used in Mohlenbrock (1986) is noted when it differs from both of these. These synonyms are indicated by K&K and RHM, respectively.

Abbreviations for herbaria cited are: DEK (Northern Illinois University), DOC (Illinois Department of Conservation), F (Field Museum of Natural History), GH (Gray Herbarium of Harvard University), ILL (University of Illinois at Urbana/Champaign), ILLS (Illinois Natural History Survey), ISM (Illinois State Museum), MOR (Morton Arboretum), NY (New York Botanical Garden), SIU (Southern Illinois University at Carbondale), and MWI (Western Illinois University).

## RESULTS

In the course of this study, we found or received documented reports of extant populations of 57 species; 71 of the species included in the search were not found (Table 1). Of those not found, 49 may still occur and should be looked for in subsequent years, but the remaining 22 appear to be extirpated from Illinois. Dry conditions during parts of 1987 and the drought of 1988 may well have kept some species from appearing. While conducting fieldwork for this and other projects, 3 species new to Illinois were discovered and are included here since they have been added to the list of endangered species.

In seven cases, we found all Illinois specimens of the species in question to have been incorrectly

identified; these specimens are now annotated as species which are not threatened or endangered in Illinois. One of the species included in this report, *Valerianella intermedia*, is no longer considered valid, but is accepted as synonymous with *Valerianella umbilicata*, which remains listed as endangered in Illinois. Some controversy surrounds another species included here, *Aristida necopina*. Issues of both identification and taxonomic distinction will have to be resolved before we can determine if it now occurs, or ever did occur, in Illinois.

### *Adoxa moschatellina* L.

Known specimens: Jo Daviess

Other reports: none

Last historic collection: 1937 Jo Daviess

This species is known historically in Illinois from one locality in Jo Daviess Co. It was discovered on a mesic floodplain terrace in 1983 (Sorensen, Bowles, and Nyboer 8375, DEK) in the general vicinity of the original collections.

### *Amorpha nitens* Boynton

Known specimens: Pope

Other reports: none

Last historic collection: 1923 Pope

This species was presumed to be extirpated from Illinois following unsuccessful searches in 1987 of the original collection locality and of another Pope Co. site where it had been reported to occur. In 1988, one population of about 100 plants was found in Pope Co. (Taft 504-507, 511, 524, ILLS).

### *Apios priceana* B.L. Robinson

Known specimens: Union

Other reports: none

Last historic collection: 1941 Union

There is only one valid Illinois collection of this species (Fuller 664, ILLS, ILL, ISM, 1941). The other collection ascribed to this taxon (Winterringer 2492, ISM, ILL, 1949) is a misidentification (M. Woods pers. comm.), and the occurrence reported by Biotic Consultants (1976) is apparently in error (R.H. Mohlenbrock pers. comm.). The original collection location cannot be precisely determined, but repeated searches have been made of suitable habitat in the vicinity. The plant has not been found, but the possibility remains that it could have been overlooked.

Table 1. Summary of search results for species included in this report.

Column designations:

1 - Species found new to Illinois

2 - Species found in recent searches (since 1981).

3 - Species not found in recent searches, but which may still occur in Illinois.

4 - Species not found in recent searches and presumed extirpated from Illinois.

5 - Species no longer considered valid, or with Illinois occurrence based on misidentification.

	1	2	3	4	5		1	2	3	4	5
<i>Adoxa moschatellina</i>		X				<i>Daucus pusillus</i>					X
<i>Amorpha nitens</i>		X				<i>Eleocharis equisetoides</i>					X
<i>Apios priceana</i>			X			<i>Eleocharis olivacea</i>		X			
<i>Aralia hispida</i>			X			<i>Eleocharis parvula</i>			X		
<i>Aristida necopina</i>					X*	<i>Equisetum palustre</i>					X
<i>Asclepias ovalifolia</i>		X				<i>Equisetum sylvaticum</i>	X				
<i>Bacopa acuminata</i>				X		<i>Eriophorum viridi-carinatum</i>			X		
<i>Baptisia tinctoria</i>				X		<i>Euphorbia spathulata</i>		X			
<i>Bartonia paniculata</i>			X			<i>Fuirena scirpoides</i>				X	
<i>Bidens beckii</i>			X			<i>Gaultheria procumbens</i>		X			
<i>Botrychium simplex</i>			X			<i>Geranium bicknellii</i>			X		
<i>Carex atherodes</i>		X				<i>Geum rivale</i>				X	
<i>Carex aurea</i>		X				<i>Glyceria arkansana</i>		X			
<i>Carex austrina</i>		X				<i>Glyceria borealis</i>			X		
<i>Carex canescens</i>						<i>Glyceria canadensis</i>				X	
<i>var. disjuncta</i>	X					<i>Gnaphalium macounii</i>				X	
<i>Carex chordorrhiza</i>		X				<i>Habenaria hookeri</i>				X	
<i>Carex cumulata</i>				X		<i>Hackelia americana</i>		X			
<i>Carex decomposita</i>		X				<i>Helianthus giganteus</i>		X			
<i>Carex disperma</i>		X				<i>Heteranthera reniformis</i>		X			
<i>Carex echinata</i>	X					<i>Hymenoxys acaulis</i>					
<i>Carex garberi</i>		X				<i>var. glabra</i>				X	
<i>Carex intumescens</i>		X				<i>Hypericum boreale</i>					X
<i>Carex nigromarginata</i>			X			<i>Hypericum densiflorum</i>			X		
<i>Carex oxylepis</i>		X				<i>Juncus vaseyi</i>		X			
<i>Carex pallescens</i>			X			<i>Justicia ovata</i>		X			
<i>Carex plantaginea</i>				X		<i>Lactuca ludoviciana</i>			X		
<i>Carex rostrata</i>		X				<i>Lathyrus maritimus</i>			X		
<i>Carex striatula</i>			X			<i>Lipocarpha maculata</i>			X		
<i>Carex tonsa</i>		X				<i>Lycopodium inundatum</i>		X			
<i>Carex willdenowii</i>		X				<i>Medeola virginiana</i>		X			
<i>Carex woodii</i>		X				<i>Melampyrum lineare</i>			X		
<i>Chimaphila maculata</i>			X			<i>Panicum boreale</i>		X			
<i>Chimaphila umbellata</i>		X				<i>Panicum columbianum</i>		X			
<i>Cinna latifolia</i>				X		<i>Panicum hians</i>					X
<i>Conioselinum chinense</i>		X				<i>Panicum longifolium</i>			X		
<i>Corydalis aurea</i>		X				<i>Panicum nitidum</i>			X		
<i>Corydalis sempervirens</i>		X				<i>Panicum ravenelii</i>		X			
<i>Cynoscium digitatum</i>			X			<i>Panicum stipitatum</i>		X			
<i>Cypripedium acaule</i>			X			<i>Paspalum bushii</i>		X			

Table 1 continued on next page

Table 1 continued.

	1	2	3	4	5		1	2	3	4	5
<i>Paspalum dissectum</i>		X				<i>Scheuchzeria palustris</i>			X		
<i>Paspalum lentiferum</i>				X		<i>Schizachne purpurascens</i>		X			
<i>Phacelia gilioides</i>			X			<i>Scirpus hattorianus</i>			X		
<i>Phlox carolina</i>						<i>Scirpus microcarpus</i>					X
<i>ssp. angusta</i>				X		<i>Scirpus pedicellatus</i>					X
<i>Phlox pilosa</i>						<i>Scirpus purshianus</i>			X		
<i>ssp. sangamonensis</i>		X				<i>Scirpus smithii</i>			X		
<i>Physostegia intermedia</i>					X	<i>Scirpus torreyi</i>			X		
<i>Plantago heterophylla</i>				X		<i>Scirpus verecundus</i>			X		
<i>Poa wolfii</i>		X				<i>Scleria reticularis</i>			X		
<i>Polygonum bicorne</i>		X				<i>Shepherdia canadensis</i>			X		
<i>Potamogeton gramineus</i>		X				<i>Sisyrinchium montanum</i>		X			
<i>Potamogeton praelongus</i>			X			<i>Solidago arguta</i>			X		
<i>Potamogeton pulcher</i>			X			<i>Solidago remota</i>					X
<i>Potamogeton robbinsii</i>		X				<i>Sorbus americana</i>		X			
<i>Potamogeton strictifolius</i>			X			<i>Sparganium americanum</i>		X			
<i>Potamogeton vaseyi</i>				X		<i>Sphaeralcea angusta</i>			X		
<i>Potentilla millegrana</i>			X			<i>Spiranthes lucida</i>			X		
<i>Ptilimnium nuttallii</i>		X				<i>Spiranthes romanzoffiana</i>			X		
<i>Puccinellia pallida</i>		X				<i>Stachys clingmanii</i>					X
<i>Pycnanthemum albescens</i>			X			<i>Thismia americana</i>			X		
<i>Pyrola americana</i>			X			<i>Tradescantia bracteata</i>		X			
<i>Pyrola secunda</i>					X	<i>Triadenum virginicum</i>			X		
<i>Ranunculus ambigens</i>				X		<i>Trillium cernuum</i>			X		
<i>Ranunculus cymbalaria</i>		X				<i>Trillium cuneatum</i>		X			
<i>Rhamnus alnifolia</i>		X				<i>Vaccinium stamineum</i>			X		
<i>Rhynchospora globularis</i>			X			<i>Valerianella intermedia</i>					X
<i>Rhynchospora macrostachya</i>					X	<i>Valerianella umbilicata</i>		X			
<i>Rorippa truncata</i>			X			<i>Veronica americana</i>		X			
<i>Rumex hastatulus</i>			X			<i>Viola incognita</i>		X			
<i>Salix serissima</i>			X			<i>Viola viarum</i>		X			
<i>Salix syrticola</i>		X				<i>Woodwardia virginica</i>				X	

\*Taxonomic issues remain unresolved.