

## A Preliminary List of Endangered and Threatened Vascular Plants in Indiana

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### Introduction

Since the *Flora of Indiana* was published (Deam, 1940), many significant changes have taken place with respect to Indiana's flora. The destruction of habitat due to increasing urbanization, industrialization and agriculture has resulted in many native plants becoming increasingly rare. Continuing disturbances, such as the lowering of water tables and the lack of natural fires, have further degraded the habitat of many rare native species, tipping the competitive edge toward aggressive species introduced from the Old World. As a result of this destruction and degradation of habitat, species that were rare in the 1940's are even rarer today. Twenty-two plants are considered to have been extirpated from Indiana, and a number are known today from only one site.

Many conservation and academic interests are concerned with the status of vascular plants in Indiana. The true status of Indiana's rarest plants needs to be ascertained, in order that those plants truly in danger of extirpation can be identified. The remaining populations of these plants can then be monitored and measures taken to aid their survival through environmental planning and review processes.

### Compilation and Selection Criteria

An attempt was made to take into account all known information for each taxon during this compilation. The previously prepared lists of Barnes (3), Crovello (5), and Crankshaw (4) were consulted. Additions to the flora, including new state records and new county records, are noted in the Deam Herbarium at Indiana University, Bloomington, and are integrated into the computerized Flora of Indiana data bank at the University of Notre Dame, in cooperation with the Biology Survey Committee of the Indiana Academy of Science. These data banks were also consulted, as were several botanists within and without Indiana. A large listing of plants potentially endangered, threatened, or rare was then prepared. This listing considered taxa proposed on the earlier lists, as well as other taxa thought to be rare or vulnerable. Rarity or vulnerability may result from: few recorded occurrences, small population size, widely scattered distribution patterns, low site or habitat tenacity, peripherality of range, shrinking habitat due to landscape modification, relictual habitat conditions, sensitivity to human intrusion, susceptibility to environmental conditions, a combination of these situations, or other factors.

Several species reported as new to the State subsequent to the last report to the Academy of Science were included. Hybrid species and naturalized exotic (i.e. non-North American) species introduced accidentally or deliberately were not included. Several North American species, which are known to be adventive from other states or introduced to Indiana, were not listed. Plants which may be adventive, but for which further information was needed before a decision could be made, were listed.

Data for all taxa on this first listing was gleaned from herbarium labels at the Friesner Herbarium, Butler University, The Hebert Herbarium, Notre Dame University, and the herbaria at Ball State University, Muncie, Indiana, the Morton Arboretum, Lisle, Illinois, and the Field Museum, Chicago, Illinois. A new listing was prepared and presented to the Indiana Academy of Science (2). This list was also presented to the Natural Heritage Classification Workshop, Indianapolis, in February, 1978.

During the past year, most remaining Indiana herbaria and several regional herbaria have been searched, and input gained from many persons knowledgeable about Indiana's flora. All locations for species on the list have been mapped and recorded in the Department of Natural Resources' National Heritage Program data bank. Field work during 1979 included searches to reverify the existence or destruction of a number of the older plants locations or their habitats. In addition, a number of new sites were located during the course of various inventories and studies.

This current list reflects the updated information obtained during the past year. Each plant is assigned a category after consideration of factors including: 1) the number of sites from which it is known; 2) the vulnerability and type of habitat; 3) length of time since the plant was last observed or collected; 4) its status in surrounding states; 5) comments from knowledgeable authorities.

### Results and Discussion

The "Preliminary List of Endangered and Threatened Vascular Plants in Indiana" is shown in Table 1. These plants have been grouped into categories which, to the authors' knowledge, best reflect their present status.

TABLE 1. A preliminary list of endangered and threatened vascular plants in Indiana. Symbols are defined as follows: Fe (taxa proposed or under review for federal status); F (follows nomenclature of Fernald, 1950); S (follows nomenclature of Swink and Wilhelm, 1979); D (follows nomenclature of Deam, 1940).

#### EXTIRPATED OR POSSIBLY EXTIRPATED

1. *Aconitum uncinatum* L.
2. *Adlumia fungosa* (Ait.) Greene
3. *Arethusa bulbosa* L.
- Fe 4. *Aselepias meadii* Torr.
- Fe 5. *Astragalus tennesseensis* Gray.
6. *Bumelia lycioides* (L.) Pers.
7. *Clintonia borealis* (Ait.) Raf.

TABLE 1—Continued

8. *Corallorhiza trifida* Chat. var. *verna* Fern.  
(*C. trifida* D.)
9. *Halesia carolina* L.
10. *Hippuris vulgaris* L.
11. *Hypericum dolabriforme* Vent.
12. *Juncus militaris* Bigel.
13. *Lactuca ludoviciana* (Nutt.) DC.
14. *Lechea stricta* Leggett.
15. *Lesquerella globosa* (Desv.) Wats.
16. *Mikania scandens* (L.) Willd.
17. *Poa cuspidata* Nutt.
18. *Psilocarya nitens* (Vahl.) Wood.
- Fe 19. *Psoralea stipulata* T. & G.
20. *Shepherdia canadensis* (L.) Nutt.
21. *Solidago buckleyi* T. & G.
22. *Trautvetteria carolinensis* (Walt.) Vail.

## ENDANGERED

1. *Anaphalis margaritacea* (L.) Benth and Hook (*A. m. revoluta arachnoidea* and *A. m. var. intercedens* D.)
2. *Androsace occidentalis* Pursh.
3. *Anemone caroliniana* Walt.
4. *Arabis drummondii* Gray.
5. *Arabis patens* Sulliv.
6. *Arenaria patula* Michx.
7. *Asplenium montanum* Willd.
8. *Asplenium ruta-muraria* L. var. *cryptolepis* (Fern.) Wherry.  
(*A. cryptolepis* D.)
9. *Aster furcatus* Burgess.
10. *Aster oblongifolius* Nutt.  
(includes *A. oblongifolius rigidulus* D.)
11. *Aureolaria grandiflora* (Benth.) Pennell var. *pulchra* Pennell  
(*Gerardia grandiflora pulchra* S.)
12. *Besseya bullii* (Eat.) Rydb.  
(*Wulfenia bullii* S., F.)
13. *Betula populifolia* Marsh.
14. *Botrychium matricariacfolium* A. Br.
15. *Botrychium multifidum* (Gmel.) Rupr. var. *intermedium*  
(D.C. Eat.) Farw. (*B. multifidum silaifolium* D.)
16. *Botrychium oneidense* (Gilbert) House.  
(*B. dissectum oneidense* D.)
17. *Botrychium simplex* E. Hitchc.
18. *Buchnera americana* L.
19. *Calla palustris* L.
20. *Callirhoe triangulata* (Leavenw.) Gray.
21. *Calyocarpum lyoni* (Purish) Gray.
22. *Cardamine pratensis* L. var. *palustris* Wimm and Grab.
23. *Carex abscondita* Mackenzie.
24. *Carex alopecoidca* Tuckerm.
25. *Carex arctata* Boott.
26. *Carex atherodes* Spreng.
27. *Carex bushii* Mackenzie.
28. *Carex chordorrhiza* L.
29. *Carex cumulata* (Bailey) Mackenzie.
30. *Carex decomposita* Muhl.
31. *Carex eburnea* Boott.
32. *Carex flava* L.
33. *Carex folliculata* L.
34. *Carex gigantea* Rudge
35. *Carex howei* Mackenzie
36. *Carex incomperta* Bickn.

TABLE 1—Continued

37. *Carex leptonevia* Fern.  
 38. *Carex nigromarginata* Schw.  
 39. *Carex pedunculata* Muhl.  
 40. *Carex pseudo-cyperus* L.  
 41. *Carex retrorsa* Schw.  
 42. *Carex richardsonii* R. Br.  
 43. *Carex scabrata* Schw.  
 44. *Carex seorsa* Howe.  
 45. *Carex styloflexa* Buckl.  
 46. *Carya pallida* Ashe.  
 47. *Carya texana* Buckl. (*C. buckleyi arkansana* D.)  
 48. *Ceanothus herbaceus* Raf. (*C. ovatus* D., S.)  
 49. *Chamaelirium luteum* (L.) Gray.  
 50. *Cheilanthes lanosa* (Michx.) D.C. Eat.  
 51. *Chrysosplenium americanum* Schw.  
 Fe 52. *Cladrastis lutea* (Michx. f.) K. Koch.  
 53. *Conioselinum chinense* (L.) BSP.  
 54. *Cornus canadensis* L.  
 55. *Corydalis sempervirens* (L.) Pers.  
 56. *Cuscuta cuspidata* Engelm.  
 57. *Cyperus acuminatus* Torr. & Hook.  
 58. *Cyperus dentatus* Torr.  
 59. *Dentaria multifida* Muhl.  
 60. *Deschampsia caespitosa* (L.) Beauv.  
 61. *Dicliptera brachiata* (Pursh) Spreng.  
     (*Diapedium brachiatum* D.)  
 Fe 62. *Dodecatheon meadia* L. var. *frenchii* Vasey.  
 63. *Dryopteris clintoniana* (D.C. Eat.) Dowell.  
     (*D. cristata clintoniana* D.)  
 64. *Echinodorus cordifolius* (L.)  
 65. *Eleocharis geniculata* (L.) R. & S.  
 66. *E. melanocarpa* Torr.  
 67. *E. microcarpa* Torr. (*E. microcarpa filiculmis* D.)  
 68. *E. ovata* (Roth) R. and S.  
 69. *E. robbinsii* Oakes.  
 70. *E. wolffi* Gray.  
 71. *Equisetum variegatum* Schleich.  
 72. *Erigeron pusillus* Nutt. (D., F.)  
 73. *Eriophorum spissum* Fern.  
 74. *Erysimum asperum* (Nutt.) DC.  
 75. *Eupatorium incarnatum* Walt.  
 76. *Euphorbia serpens* HBK.  
 77. *Fimbristylis caroliniana* (Lam.) Fern.  
     (*F. puberula* D., *F. drummondii*, S.)  
 78. *Fuirena pumila* Torr.  
 79. *Galactia volubilis* (L.) Britt. var. *mississippiensis* Vail.  
 80. *Gaura filipes* Spach.  
 81. *Gentiana villosa* L.  
 82. *Geranium bicknellii* Britt.  
 83. *G. robertianum* L.  
 84. *Gerardia gattingeri* Small  
 85. *G. skinneriana* Wood.  
 86. *Geum rivale* L.  
 87. *Gleditsia aquatica* Marsh.  
 88. *Glyceria borealis* (Nash) Batchelder.  
 89. *Glyceria grandis* S. Wats.  
 90. *Gymnopogon ambiguus* (Michx.) BSP.  
 91. *Habernaria dilatata* (Pursh.) Hook.  
 Fe 92. *H. flava* (L.) Br. (*H. scutellata* D.)  
 93. *H. hookeri* Torr.  
 Fe 94. *H. leucophaea* (Nutt.) Gray.

TABLE 1—Continued

95. *H. orbiculata* (Pursh.) Torr.  
 96. *Heuchera parviflora* Bartl. var. *rugelii* (Shuttlew.) R. B. & I.  
 97. *Hexalectris spicata* (Walt.) Barnh.  
 98. *Hibiscus lasiocarpus* Cav.  
 99. *Hieraceum venosum* L.  
 100. *Hottonia inflata* Ell.  
 101. *Hydrocotyle americana* L.  
 102. *Hypericum adpressum* Bart.  
 103. *H. denticulatum* Walt.  
 104. *H. frondosum* Michx.  
 105. *Iresine rhizomatosa* Standl.  
 106. *Juncus scirpoides* Lam.  
 107. *Jussiaea decurrens* (Walt.) DC.  
 108. *Lathyrus maritimus* (L.) Bigel var. *glaber* (Ser.) Eames.  
     (*L. japonicus glaber* D.)  
 109. *Leavenworthia uniflora* (Michx.) Britt.  
 110. *Lechea racemulosa* Michx.  
 111. *Lemna minima* Philippi  
 112. *L. perpusilla* Torr.  
 113. *L. valdiviana* Philippi (*L. cyclostasa* D.)  
 114. *Lespedeza stuevei* Nutt.  
 Fe 115. *Lesquerella globosa* (Desv.) Wats.  
 116. *Ligusticum canadense* (L.) Britt.  
 117. *Linnaea borealis* L. (*L. borealis americana* D.)  
 118. *Linum intercursum* Bickn.  
 119. *L. sulcatum* Riddell.  
 120. *Lithospermum incisum* Lehm  
 121. *Lonicera canadensis* Marsh.  
 122. *Ludwigia glandulosa* Walt.  
 123. *Luzula acuminata* Raf. (*L. carolinæ saltuensis* D.)  
 124. *Lycopodium clavatum* L.  
 125. *L. inundatum* L.  
 126. *L. obscurum* L.  
 127. *L. sclago* L. var. *patens* (Beauv.) Desv.  
 128. *L. tristachyum* Pursh.  
 129. *Lycopus amplexans* Raf. (*L. sessilifolius* D.)  
 130. *Magnolia tripetala* L.  
 131. *Malaxis unifolia* Michx.  
 132. *Melothria pendula* L.  
 133. *Monarda bradburiana* Beck.  
 134. *Muhlenbergia capillaris* (Lam.) Trin.  
 135. *M. cuspidata* (Torr.) Rydb.  
 136. *Myosotis laxa* Lehm.  
 137. *M. macrosperma* Engelm. (*M. virginica macrosperma* D.)  
 138. *Myriophyllum pinnatum* (Walt.) BSP. (*M. scabratum* D.)  
 139. *M. verticillatum* L. (*M. v. pectinatum* D.)  
 140. *Oenothera triloba* Nutt.  
 141. *Ophioglossum engelmanni* Prantl.  
 142. *Orobanche fasciculata* Nutt. (*O.f. typica* D.)  
 143. *Oryzopsis asperifolia* Michx.  
 144. *O. pungens* (Torr.) Hitchc.  
 145. *O. racemosa* (Smith) Ricker.  
 146. *Oxydendrum arboreum* (L.) DC.  
 147. *Panicum bicknellii* Nash.  
 148. *P. longifolium* Torr.  
 149. *P. verrucosum* Muhl  
 150. *Penstemon tubæflorus* Nutt.  
 151. *Phacelia ranunculacea* (Nutt.) Const. (*P. covillei* D.)  
 152. *Phlox ovata* L.  
 Fe 153. *Plantago cordata* Lam.  
 Fe 154. *Poa paludigena* Fern. and Wieg.

TABLE 1—Continued

155. *Polygala paucifolia* Willd.  
 156. *Polygonum hydropiperoides* Michx. var. *adenocalyx* (Standord) Gl.  
 157. *P. hydropiperoides* Michx. var. *setaceum* (Baldw.) Gl.  
     (*P. setaceum interjectum* D.)  
 158. *Populus balsamifera* L. (*P. tacamahacea* D.)  
 159. *Potamogeton epihydrus* Raf.  
 160. *P. pulcher* Tuckerm.  
 161. *P. richardsonii* (Benn.) Rydb.  
 162. *Potentilla anserina* L.  
 163. *Pteridium aquilinum* (L.) Wuhn var. *pseudocaudatum* (Clute) Heller.  
 164. *Pyrola asarifolia* Michx. (*P.a. incarnata* D.)  
 165. *P. secunda* L.  
 166. *P. virens* Schweigg. (*P. chlorantha* D.)  
 167. *Ranunculus pusillus* Poir.  
 Fe 168. *Rhus trilobata* Nutt. var. *arenaria* (Greene) Barkley.  
 169. *Rhynchospora corniculata* (Lam.) Gray. var. *interior* Fern.  
 170. *R. globularis* (Chapm.) Small. var. *recognita* Gale.  
     (*R. cymosa* D.)  
 171. *Rudbeckia fulgida* Ait. var. *umbrosa* (Boynton and Beadle)  
     Cronq. (*R. umbrosa* D.)  
 172. *R. palustris* Eggert. (D., F.)  
 173. *Sabatia campanulata* (L.) Torr. (*S.e. gracilis* D.)  
 174. *Sagittaria australis* (J.G. Sm.) Small. (D., F.)  
 175. *Salix caroliniana* Michx. (*S. longipes wardi* D.)  
 176. *Sanguisorba canadensis* L.  
 177. *Scheuchzeria palustris* L. var. *americana* Fern.  
 178. *Schizachne purpurascens* (Torr.) Swallen.  
 179. *Scirpus subterminalis* Torr.  
 180. *S. torreyi* Olney.  
 181. *Scleria oligantha* Michx.  
 182. *S. pauciflora* Muhl. (*S.p. caroliniana* D.)  
 183. *S. reticularis* Michx.  
 184. *S. reticularis* Michx. var. *pubescens* Britt.  
     (*S. setacea* D.)  
 185. *Scutellaria saxatilis* Riddell.  
 186. *Silene regia* Sims.  
 187. *Sisyrinchium angustifolium* Mill (*S. montanum* S.)  
 188. *Solidago squarrosa* Muhl.  
 189. *Sorbus decora* (Sarg.) C. K. Schneid.  
 190. *Sparganium androcladum* (Engelm.) Morong.  
 191. *Spigelia marilandica* L.  
 192. *Spiranthes tuberosa* Raf. (*S. beckii* D.)  
 193. *Stipa avenacea* L.  
 194. *S. comata* Trin. and Rupr.  
 Fe 195. *Sullivantia sullivantii* (T. and G.) Britt.  
 196. *Talinum rugospermum* Holz.  
 197. *Thuja occidentalis* L.  
 198. *Tomanthera auriculata* (Michx.) Raf.  
 199. *Trachelospermum difforme* (Walt.) Gray.  
 200. *Trichomanes boschianum* Sturm.  
 201. *Trillium cernuum* L. var. *macranthum* A.J. Eames and Wieg  
 202. *Tripsacum dactyloides* L.  
 203. *Utricularia minor* L.  
 204. *U. radiata* Small. (*U. inflata minor* S., F.)  
 205. *Vaccinium myrtilloides* Michx. (*V. canadense* D.)  
 206. *Valeriana edulis* Nutt.  
 207. *V. uliginosa* (T. and G.) Rydb.  
 208. *Valerianella chenopodifolia* (Pursh.) DC.  
 209. *Veronica americana* (Raf.) Schw.  
 210. *Viburnum cassinoides* L.  
 211. *Viola hirsutula* Brainerd.

TABLE 1—Continued

212. *Wisteria macrostachya* Nutt.
213. *Wolfiella floridana* (Smith) Thompson.
214. *Xyris caroliniana* Walt.
215. *Zizia aptera* (Gray) Fern.
216. *Zygadenus glaucus* Nutt. (*Zigadenus glaucus* D.)

## THREATENED

1. *Actaea rubra* (Ait.) Willd.
2. *Andromeda glaucophylla* Link.
3. *Antennaria solitaria* Rydb.
4. *Arabis viridis* Harger. var. *deamii* Hopkins (G., D.)  
(*A. missouriensis deamii* F., S.)
5. *Aralia hispida* Vent.
6. *Arenaria stricta* Michx.
7. *Aristida tuberculosa* Nutt.
8. *Aristolochia tomentosa* Sims.
9. *Aster ptarmicoides* (Nees) T. and G.
10. *A. sericeus* Vent.
11. *A. solidagineus* Michx. (*Seriocarpus linifolius* D.)
12. *Baptisia australis* (L.) R. Br.
13. *B. tinctoria* (L.) R. Br. (*B. tinctoria crebra* D.)
14. *Betula papyrifera* Marsh.
15. *Bidens beckii* Torr. (*Megalodonta beckii* D.)
16. *Cakile edentula* (Bigel.) Hook. var. *lacustris* Fern.
17. *Carex alata* Torr. and Gray.
18. *C. aurea* Nutt.
19. *Carex conoidea* Schk.
20. *C. crawei* Dewey.
21. *C. garberi* Fern.
22. *C. limosa* L.
23. *C. trichocarpa* Muhl.
24. *Circaea alpina* L.
- Fe 25. *Cirsium pitcheri* (Torr.) T. and G.
26. *Cirsium virginianum* (L.) Michx.
27. *Clitoria mariana* L.
28. *Cornus rugosa* Lam.
29. *Cyperus pseudovegetus* Steud.
30. *Cyrtopodium calceolus* L. var. *parviflorum* Salisb.  
(*C. parviflorum* D.)
- Fe 31. *C. candidum* Muhl.
32. *Dentaria diphylla* Michx.
33. *Eleocharis equisetoides* (Ell.) Torr.
34. *E. pauciflora* (Lightf.) Link. (*E. pauciflora fernaldii* D.)
35. *Epigaea repens* L.
36. *Eriophorum angustifolium* Honckeny
37. *E. gracile* Koch.
38. *E. viridi-carinatum* (Engelm.) Fern.
39. *Euphorbia polygonifolia* L.
40. *Festuca paradoxa* Desv.
41. *Fragaria vesca* L. var. *americana* Porter. (*F. vesca* D.)
42. *Gonolobus obliquus* (Jacq.) Schult.
43. *Habenaria ciliaris* (L.) R. Br.
44. *H. clavallata* (Michx.) Spring.
45. *H. flava* (L.) R. Br. var. *herbiola* (Lindl.) Correll  
(*H. flava* D.)
46. *H. hyperborea* (L.) R. Br.
47. *Heuchera villosa* Michx. var. *macrorhiza* (Small) R. B. & L.
48. *Houstonia nigricans* (Lam) Fern. (*H. angustifolia* D.)
49. *Hudsonia tomentosa* Nutt. (*H. tomentosa intermedia* D.)
50. *Hymenocallis occidentalis* (LeConte) Knuth.
51. *Hypericum pyramidatum* Ait. (*H. aseylon* L.)

TABLE 1—Continued

52. *Ilex decidua* Walt.
53. *Isotria verticillata* (Willd.) Raf.
54. *Juncus pelocarpus* E. Meyer.
55. *Juniperus communis* L. var. *depressa* Pursh.
56. *Kalmia latifolia* L.
57. *Lathyrus ochroleucus* Hook.
58. *Liatris pycnostachya* Michx. (*L. bebbiana* D.)
59. *L. squarrosa* (L.) Michx.
60. *Lilium canadense* L.
61. *L. superbum* L.
62. *Ludwigia sphaerocarpa* Ell. (*L. sphaerocarpa deamii* D.)
63. *Magnolia acuminata* L.
64. *Matteuccia struthiopteris* (L.) Todaro var. *pennsylvanica* (Willd.) Morton. (*Pteretis nodulosa* W.)
65. *Melampyrum lineare* Desr. (*M. lineare latifolium* and *M. lineare pectinatum* D.)
66. *Melanthium virginicum* L.
67. *Melica nutica* Walt.
68. *Milium effusum* L.
69. *Myrica asplenifolia* L. var. *tomentosa* (Chev.) Bl. (*Comptonia peregrina* D.)
70. *Napaea dioica* L.
71. *Onosmodium molle* Michx. var. *hispidissimum* (Mack) Cronq. (*O. hispidissimum* D.)
72. *Panicum leibergii* (Vasey) Scribn.
73. *Passiflora incarnata* L.
74. *Penstemon canescens* (Britt.) Britt. (*P. canescens typicus* D.)
75. *Perideridia americana* (Nutt.) Reichenb.
76. *Phlox amplifolia* Britt.
77. *Phoradendron flavescens* (Pursh) Nutt.
78. *Poa alsodes* Gray
79. *P. wolfii* Scribn.
80. *Polygonella articulata* (L.) Meissn.
81. *Polygonum careyi* Olney.
82. *Polytaenia nuttallii* DC.
83. *Potamogeton freisii* Rupr.
84. *P. robbinsii* Oakes.
85. *P. strictifolius* Benn. (*P. strictifolius* vars. *typicus* and *rutiloides* D.)
86. *Psilocarya scirpoides* Torr.
87. *Pyrola elliptica* Nutt.
88. *P. rotundifolia* L. var. *americana* (Sweet) Fern.
89. *Rhynchospora macrostachya* Torr.
90. *Rubus odoratus* L.
91. *Rudbeckia fulgida* Ait.
92. *Salix cordata* Michx. (*S. adenophylla* D., *S. syrticola* S.)
93. *S. serissima* (Bailey) Fern.
94. *Satureja glabella* (Michx.) Briquet var. *angustifolia* (Torr.) Svenson. (*S. glabra* D., *S. arkansana* S.)
95. *Saxifraga virginensis* Michx.
96. *Scirpus smithii* Gray var. *williamsii* Fern. (*S. debilis* D., *S. purshianus* S.)
97. *Scutellaria parvula* Michx. var. *australis* Fassett. (*S. australis* D.)
98. *Scdum telephioides* Michx.
99. *Selaginella rupestris* (L.) Spring.
100. *Solidago hispida* Muhl.
101. *Solidago spathulata* DC. var. *gillmani* (Gray) Cronq. (*S. deamii* D., *S. racemosa gillmani* S., D., F.)
102. *Spiranthes lucida* (H. H. Eaton) Ames.
103. *S. ovalis* Lindl.
104. *Stachys clingmanii* Small.



TABLE 1—Continued

105. *Stenanthium graminum* (Ker.) Morong. (includes *S. robustum* D.)
106. *Styrax americana* Lam.
107. *Taxodium distichum* (L.) Rich.
108. *Tragia cordata* Michx.
109. *Trifolium reflexum* L. var. *glabrum* Lojac.
110. *Triglochin palustris* L.
111. *Uticularia cornuta* Michx.
112. *U. intermedia* Hayne.
113. *U. purpurea* Walt.
114. *U. resupinata* B. D. Greene.
115. *Vaccinium oxycoccus* L.
116. *Viola blanda* Willd.
117. *V. pedatifida* G. Don.
118. *V. primulifolia* Vahl.
119. *Vitis palmata* Vahl.
120. *Waldsteinia fragarioides* (Michx.) Tratt.

SPECIAL CONCERN  
RARE AND/OR RESTRICTED

1. *Aesculus octandra* Marsh.
2. *Arabis glabra* (L.) Bernh.
3. *Arctostaphylos uva-ursi* (L.) Spreng.
4. *Aristida intermedia* Scribn. and Ball.
5. *Aster junciformis* Rydb. (*A. junceus* D.)
6. *A. undulatus* L.
7. *Bacopa rotundifolia* (Michx.) Wettst.  
(*Hydrantheium rotundifolium* D.)
8. *Baptista leucophaea* Nutt.
9. *Carex bebbii* Olney
10. *C. disperma* Dewey.
11. *C. louisianica* Bailey.
12. *Carex sparganioides* Muhl. var. *cephaloidea* (Dewey)  
Carey. (*C. cephaloida* D.) (tax).
13. *Chimaphila umbellata* (L.) Bart. var. *cisatlantica* Blake
14. *Clematis pitcheri* T. and G.
15. *Crataegus viridis* L.
16. *Dennstaedtia punctilobula* (Michx.) Moore
17. *Didiplis diandra* (Nutt.) Wood.
18. *Drosera intermedia* Hayne.
19. *D. rotundifolia* L.
20. *Gentiana flavida* Gray
21. *Habenaria psycodes* (L.) Spreng.
22. *H. viridis* (L.) R. Br. var. *bracteata* (Muhl.) Gray.
23. *Lespedeza nuttallii* Darl.
24. *Linum striatum* Walt.
25. *Liparis loeselii* (L.) Rich.
26. *Menyanthes trifoliata* L. (*M. trifoliata minor* D.)
27. *Nemopanthus mucronatus* (L.) Trel.
28. *Nothoscordum bivalve* (L.) Britt.
29. *Panax trifolium* L.
30. *Panicum boreale* Nash.
31. *Pinus banksiana* Lamb.
32. *P. virginiana* Mill.
33. *Pogonia ophioglossoides* (L.) Ker.
34. *Potamogeton praelongus* Wulfen.
35. *Prunus pennsylvanica* L. f.
36. *Quercus falcata* Michx. var. *pagodaefolia* Ell. (F., D.)
37. *Rhamnus alnifolius* L'Her. (*R. alnifolia* D.)
38. *Ribes hirtellum* Michx. (*Grossularia hirtella* D.)
39. *Smilax bona-nox* L.

TABLE 1—Continued

40. *Taxus canadensis* Marsh.
41. *Vaccinium arboreum* Marsh.
42. *V. macrocarpon* Ait.

## SPECIAL CONCERN—TAXONOMY PROBLEMS

1. *Botrychium dissectum* Spreng. var. *tenuifolium*  
(Underw.) Farw.
2. *Carex debilis* Michx. var. *rudgei* Bailey.
3. *C. muricata* L. var. *laricina* (Mackenzie) Gl.  
(*C. laricina* D.)
4. *C. tetanica* Schk. var. *woodii* (Dewey) Wood.  
(*C. woodii* D.)
5. *Cassia fasciculata* Michx. var. *robusta* (Pollard) Macbr.  
(possibly adventive)
6. *C. nictitans* L. (*C. nictitans leiocarpa* D.)
7. *Chaerophyllum procumbens* (L.) Crantz. var. *shortii* T. & G. (F., D.)
8. *Cornus amomum* Mill. (proper identification)
9. *Euphorbia vermiculata* Raf.
10. *Hemicarpha drummondii* Nees. (F., D.)
11. *Lathyrus venosus* Muhl.
12. *Liatris scabra* (Greene) K. Schum.
13. *L. squarrulosa* Michx. (possibly adventive)
14. *Lycopodium inundatum* L. var. *bigelovii* Tuckerm.
15. *Oxalis dillenii* Jacq. (*O. florida* D.)
16. *Panicum dichotomiflorum* Michx. var. *puritanorum* Svenson.
17. *P. lucidum* Ashe.
18. *P. mattamuskeetense* Ashe.
19. *P. subvillosum* Ashe.
20. *P. yadkinense* Ashe.
21. *Potamogeton diversifolius* Raf. (*P. capillaceus* D.)
22. *P. pusillus* L. (*P. berchtoldi mucronatus*, *P. panormitanus*  
vars. *major* and *minor* D.)
23. *P. vaseyi* Robbins.
24. *Pycnanthemum incanum* (L.) Michx.
25. *Rubus cnslenii* Tratt. (*R. centralis*, *R. deamii* D.)
26. *Rumex hastatulus* Baldw.
27. *Veronica anagallis-aquatica* L. (*V. glandifera* D.)

## SPECIAL CONCERN—ADVENTIVE

1. *Berberis canadensis* Mill.
2. *Bouteloua gracilis* (HBK.) Lag.
3. *Cabomba caroliniana* Gray.
4. *Crotonopsis elliptica* Willd.
5. *Erianthus alopecuroides* (L.) Ell.
6. *Euphorbia obtusata* Pursh.
7. *Glyceria acutiflora* Torr.
8. *Gnaphalium viscosum* HBK. (*G. macounii* D.)
9. *Isoetes engelmanni* A. Br.
10. *Juncus secundus* Beauv.
11. *Krigia oppositifolia* Raf. (*Serinia oppositifolia* D.)
12. *Najas gracillima* (A. Br.) Magnus.
13. *Polygonum cilinode* Michx.
14. *Proboscidea louisiana* (Mill.) Woot. & Standl.  
(*Martynia louisianica* D.)
15. *Psoralca tenuiflora* Pursh.
16. *Pycnanthemum torrei* Benth.
17. *Ranunculus texensis* Engelm. (*R. oblongifolius* D.)
18. *Rhoxia mariana* L. (*R.m. leiosperma* D.)
19. *Strophostyles leiosperma* (T. & G.) Piper.
20. *Trichostema dichotomum* L.

TABLE 1—Continued

21. *Viburnum opulus* L. var. *americanum* Ait.  
(*V. trilobum* S., D.)
22. *Zannichellia palustris* L. (*Z. p. major* D.)

## SPECIAL CONCERN—FEDERAL

1. *Chelone obliqua* L. var. *speciosa* Pennell and Wherry.
2. *Habenaria peramoena* Gray.
3. *Hydrastis canadensis* L. (vulnerable)
4. *Iliamna remota* Greene.
5. *Panax quinquefolium* L. (vulnerable)
6. *Phlox bifida* Beck. var. *stellaria* (Gray)  
Wherry (taxonomy)
7. *Phyllitis scolopendrium* (L.) Newm. var. *americana* Fern.
8. *Synandra hispidula* (Michx.) Britt.
9. *Veratrum woodii* Robbins.

## SPECIAL CONCERN—OTHER

1. *Cypripedium acaule* Ait. (vulnerable)
2. *C. reginae* Walt. (vulnerable)
3. *Saxifraga forbesii* Vasey. (verification)

*Extirpated or possibly extirpated* plants are those which were listed as extirpated by Deam (6) and not reverified since, or have had all known sites destroyed and no new locations found. For example, *Astragalus tennesseensis* Gray was known from one site which Deam could not reverify; *Solidago buckleyi* T. & G. was found only once by Deam, at a site which has since been destroyed.

An *endangered* status is assigned when a taxon is known or reported from five or fewer sites, while *threatened* plants are those known or reported from ten or fewer stations. Plants of federal concern that are also considered in these categories are noted with an "Fe" in the margin preceding the named taxon.

Sufficient information was not available for a number of species represented on previous lists. These species are currently listed in various *special concern* subcategories, and once the needed information is available, will either be placed in an appropriate category or dropped from consideration. Some plants in Indiana occur at more than ten sites, and/or are known from less than five counties. Thus, the subcategory *special concern—rare and/or restricted* was created. For instance, *Aesculus octandra* Marsh is found in five southeastern counties, but is fairly well distributed within those counties.

With the disappearance of native habitats, certain native taxa are capable of moving onto disturbed sites; these are considered as *special concern—adventive*. *Erianthus alopecuroides* (L.) Ell. naturally occurred in only one southern county, but now is believed to be more common, occurring in old field habitats. Other species included in this category are plants which may have moved into Indiana recently, or are becoming more common.

The *special concern—taxonomy* subcategory contains plants which have uncertain taxonomic status. Examples include *Panicum subvillosum* Ashe, which may be lumped with a more common species, and *Rumex hastatulus* Baldw., which may be misidentified.

Plants are placed in the *special concern—federal* subcategory due to their being proposed for federal status (10) or proposed for federal review (1), although their status within Indiana may not be critical. The fact that *Habenaria peramoena* Gray is proposed for federal review (1) but is known from sixteen Indiana counties illustrates this point.

The final subcategory, *special concern—other* includes plants that may be vulnerable to collection (e.g. *Cypripedium reginae* Walt.) or in need of verification (e.g. *Saxifraga forbesii* Vasey).

Hopefully, input from various sources throughout the state will permit the update and continuous refinement of plant statuses. Plants may be added, dropped, or changed to other categories. These revisions will result in a more complete knowledge of Indiana's rarest vascular flora and will also ultimately play a vital role in their protection.

### Nomenclature

Nomenclature for all but a very few taxa follows Gleason and Cronquist (8). The few remaining taxa follow Fernald (7) or Swink and Wilhelm (9) and are noted by the symbols F., and S., respectively. Nomenclatural listings of Deam (1940) were included as synonyms for those taxa treated differently in the more recent manuals, and are noted by the symbol D.

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