

CHECKLIST OF VASCULAR AQUATIC PLANTS OF TENNESSEE¹

FRANKLIN D. ROBINSON AND ROYAL E. SHANKS

The present list has been compiled as a phase of the state flora project and incidental to work on aquatic vegetation of the Cumberland Plateau done by Robinson for the State Game and Fish Commission, which also resulted in a thesis in botany at The University of Tennessee (Robinson, 1956).

The species included are those which grow partially or entirely covered by water. Many of the plants listed are typically riparian species, and may be found either in the water or in moist terrestrial habitats. The distributional information cited for these species is that for specimens collected from aquatic habitats.

Distribution is cited by counties and unless otherwise stated is based on specimens in the State Herbarium at The University of Tennessee. References to other sources of distributional data are given in the accompanying bibliography. Names follow the usage of Fernald (1950) in Gray's Manual of Botany, eighth edition. Arrangement is alphabetical by families and within families.

While it is likely that most aquatic species which occur in the state are represented in the checklist, the distribution data are far from complete. This is due partly to very local distribution in the typically well-drained topography of most of the state, but even more due to absence of adequate collections from large portions of the state. The part of the Cumberland Plateau from Anderson County northward and all of Middle Tennessee except the southeastern and northwestern Highland Rim are very poorly represented in available collections, and there are few collections from the southern half of West Tennessee.

It is hoped that publication of this list in its present incomplete form will prove useful to those working with aquatic plants in the region, and will stimulate further collections and contributions toward a better understanding of the aquatic vegetation of Tennessee.

ACANTHACEAE

Justicia americana (L.) Vahl — Bedford, Dickson, Grainger, Humphreys, Marion, Shelby, Union and Wayne. (Listed by Robinson from Cumberland and Fentress.)

¹Contribution from the Botanical Laboratory, The University of Tennessee, N. Ser. 186.

ALISMATACEAE

Alisma subcordatum Raf. — Carter, Cocke, Hawkins, Lake, Marion, Montgomery, Obion, Sullivan, Union and Warren. (Listed by Robinson from Cumberland and Grundy.)

Echinodorus cordifolius (L.) Griseb.—Davidson, Lake, Obion and Shelby.

Lophotocarpus calycinus (Engelm.) J. G. Sm. — Montgomery.

Sagittaria australis (J. G. Sm.) Small — Benton, Cheatham, Cumberland and Montgomery. (Listed by Robinson from Fentress.)

S. engelmanniana J. G. Sm. — Anderson.

S. falcata Pursh — Cumberland.

S. latifolia Willd. — Benton, Blount, Carter, Chester, Cumberland, Hawkins, Henderson, Henry, Johnson, Lewis, Madison, Polk, Rhea, Scott and Washington. (Listed by Robinson from Fentress, Morgan and Putnam.)

S. latifolia var. *obtusa* (Muhl.) Wieg. — (Listed by Eyles and Eyles from Lake and Obion.)

S. platyphylla (Engelm.) J. G. Sm. — Lake and Obion.

S. rigida Pursh — (Credited to Tennessee by Fernald.)

ARACEAE

Acorus calamus L. — Johnson, Knox, Stewart and Tipton.

Orontium aquaticum L. — Johnson, Morgan and Washington. (Listed by Robinson from Fentress.)

Peltandra virginica (L.) Schott and Endl. — Reported by Gattinger as scattered over the state.)

CALLITRICHACEAE

Callitriche deflexa A. Br. — Coffee.

C. heterophylla Pursh — Benton, Bledsoe, Carroll, Carter, Cumberland, Dyer, Franklin, Gibson, Hardin, Johnson, Knox, Lawrence, Madison, Maury, McNairy, Roane and Warren. (Listed by Gattinger from Davidson.)

CAMPANULACEAE

Lobelia cardinalis L. — Benton, Carter, Fentress, Grundy, Hawkins, Morgan, Monroe, Polk, Tipton and Warren. (Listed by Robinson from Cumberland and Putnam.)

L. nuttallii R. & S. — Fentress and Morgan. (Listed by Robinson from Cumberland.)

CERATOPHYLLACEAE

Ceratophyllum demersum L. — Obion. (Listed by Eyles and Eyles from Lake.)

C. echinatum Gray — (Credited to Tennessee by Muenscher.)

CRUCIFERAE

Armoracia aquatica (Eat.) Wieg.— (Listed by Eyles and Eyles from Obion.)

Nasturtium officinale R. Br. — Anderson, Blount, Grainger, Hawkins, Knox, Lawrence, Lincoln, and Roane. (Listed by Robinson from Cumberland.)

CYPERACEAE

Carex comosa Boott — Montgomery. (Listed by Eyles and Eyles from Obion.)

C. decomposita Muhl. — Cocke and Lake. (Listed by Eyles and Eyles from Obion.)

C. lanuginosa Michx.— (Credited to Tennessee by Muenscher.)

C. leptalea Wahlenb. — Campbell, Carroll, Cheatham, Chester, Hardeman, Johnson and McNairy.

- C. lacustris* Willd. — Montgomery. (Listed by Eyles and Eyles from Dyer.)
Cyperus strigosus L. — Carter, Giles, Hardeman, Hickman, Knox, Marion, Monroe, Roane and Shelby. (Listed by Robinson from Grundy.)
Dulichium arundinaceum (L.) Britt. — Chester, Cumberland, Henry, Johnson, Putnam and White. (Listed by Robinson from Fentress, Grundy and Morgan.)
Eleocharis acicularis (L.) R. & S. — Coffee, Franklin, Grundy, Lawrence and Warren. (Listed by Robinson from Cumberland and Putnam.)
E. calva Torr. — Carter and Grainger.
E. engelmannii Steud. — Coffee, Fentress, Franklin and Montgomery.
E. equisetoides (Ell.) Torr. — Fentress and Putnam.
E. intermedia (Muhl.) Schultes — Grainger and Union.
E. microcarpa Torr. — Fentress, Sequatchie and Union.
E. obtusa (Willd.) Schultes — Anderson, Cumberland, Fentress, Franklin, Grainger, Grundy, Henry, Knox, Monroe, Montgomery, Obion, Putnam, and White.
E. quadrangulata (Michx.) R. & S. — Franklin and Grundy. (Listed by Robinson from Cumberland, Fentress and Putnam.)
E. smallii Britt. — Johnson and Sequatchie.
Rhynchospora alba (L.) Vahl — Johnson.
R. corniculata (Cam.) Gray — Grundy, Lauderdale and Marion.
R. globularis (Chapm.) Small — Bledsoe, Coffee, Fentress and Lincoln.
Scirpus acutus Muhl. — (Credited to Tennessee by Muenscher.)
S. americanus Pers. — Grainger and Knox.
S. atrovirens Willd. — Benton, Cumberland, Grainger, Hawkins, Knox, Meigs, Montgomery, Roane, Sullivan and Union.
S. cyperinus (L.) Kunth — Hamilton and Knox.
S. koilolepis (Steud.) Gleason — Benton, Coffee, Cumberland, Fayette, Franklin, Henderson, Lauderdale, Lincoln, Shelby and Tipton.
S. lineatus Michx. — Carroll, Grainger, Hawkins, Knox, Montgomery, Roane, Sullivan and Union.
S. polyphyllus Vahl. — Blount, Carter, Fentress and Washington.
S. purshianus Fern. — Putnam. (Listed by Robinson from Cumberland.)
S. rubricosus Fern. — Benton, Johnson, Roane and White.
S. smithii Gray — (Credited to Tennessee by Muenscher.)
S. validus Vahl — Campbell, Carter, Johnson, Roane and Unicoi. (Listed by Eyles and Eyles from Lake and Obion.)

DROSERACEAE

- Drosera intermedia* Hayne — Bledsoe, Fentress and Morgan.

ELATINACEAE

- Elatine americana* (Pursh) Arn. — (Credited to Tennessee by Muenscher.)

GENTIANACEAE

- Bartonia paniculata* (Michx.) Mush. — Fentress. (Listed by Svenson from Coffee and Grundy, by Jennison from Carroll.)
B. virginica (L.) BSP. — Coffee, Cumberland, Marion and Morgan. (Listed by Svenson from Franklin and Sequatchie.)

GRAMINEAE

- Echinochloa walteri* (Pursh) Nash — (Listed by Eyles and Eyles from Obion.)

- Glyceria acutiflora* Torr. — Marion and Warren.

- G. grandis* S. Wats. — (Credited to Tennessee by Muenscher.)
G. pallida (Torr.) Trin. — (Credited to Tennessee by Muenscher.)
G. septentrionalis Hitchc. — Franklin and Grainger.
G. striata (Lam.) Hitch. — Cumberland, Grainger, Johnson, Knox and Roane. (Listed by Eyles and Eyles from Lake and Obion.)
Leersia hexandra Sw. — Grundy, Hardeman, Hardin and Wayne.
L. lenticularis Michx. — (Listed by Steenis and Cottam from Lake and Obion.)
L. oryzoides (L.) Sw. — Cumberland, Johnson, Monroe, Polk and Roane. (Listed by Eyles and Eyles from Obion.)
L. virginica Willd. — Knox, Montgomery and Roane.
Panicum agrostoides Spreng. — Grundy.
Paspalum dissectum L. — (Credited to Tennessee by Muenscher.)
P. fluitans (Ell.) Kunth — (Credited to Tennessee by Muenscher.)
[Zizania aquatica L. — (Credited to Gibson by Gattinger, but the report is believed to be based on a misidentification.)]
Zizaniopsis miliacea (Michx.) Doll. and Aschers — Lake and Obion.

GUTTIFERAE

- Hypericum boreale* (Britt.) Bickn. — (Listed by Robinson from Cumberland, Fentress and Grundy.)

HALORAGACEAE

- Myriophyllum brasiliense* Camb. — Franklin, Monroe, Perry and Sullivan. (Listed by Robinson from Cumberland, Fentress and Grundy.)
M. heterophyllum Michx. — (Listed by Gattinger from Coffee as *M. verticillatum*, by Svenson from Coffee.)
M. humile (Raf.) Morong — Coffee and Grundy. (Listed by Robinson from Cumberland and Morgan.)
M. pinnatum (Walt.) BSP. — (Listed by Gattinger from Haywood.)
M. scabratum Michx. (Listed by Svenson from Franklin.)
Proserpinaca palustris L. — Coffee, Cumberland, Grundy, Knox, Marion, Montgomery and Putnam. (Listed by Robinson from Morgan.)
P. pectinata Lam. — Fentress and Hamilton. (Listed by Gattinger from Coffee, by Robinson from Cumberland, by Svenson from Coffee and Van Buren.)

HYDROCHARITACEAE

- Elodea canadensis* Michx. — Lake, Montgomery and Sullivan. (Listed by Eyles and Eyles from Obion.)
E. densa (Planch.) Caspary — Chester and Knox, an introduced species.
E. nuttallii (Planch.) St. John — Lake.
Limnobium spongia (Bosc) Steud. — Lake and Obion.
Vallisneria americana Michx. — Cumberland and Marion. (Reported by Davis from Lake and Obion, by Robinson from Morgan.)

ISOETACEAE

- Isoetes butleri* Engelm. — Davidson and Wilson.
I. engelmannii A. Br. — Cumberland, Grundy, Johnson, Marion, Morgan, Sullivan and VanBuren.

JUNCACEAE

- Juncus acuminatus* Michx. — Scattered over the state.
Juncus canadensis Gray — Benton, Blount, Cheatham, Cumberland, Davidson, Franklin, Grundy, Morgan, Putnam and White.

Juncus debilis Gray — Scattered over the state.

Juncus effusus L. — Scattered over the state.

Juncus marginatus Rostk. — Scattered over the state.

Juncus repens Michx. — Coffee, Cumberland, Fentress, Grundy and Putnam.

LABIATAE

Lycopus virginicus L. — Fentress, Grainger, Lake, Marion, Polk and Roane. (Listed by Robinson from Morgan.)

LEMNACEAE

Lemna minor L. — Coffee, Lake, Lauderdale and Obion.

L. perpusilla Torr. — Lake, Maury, and Obion. (Listed by Gattinger from Davidson.)

L. trisulca L. — (Reported by Davis from Lake and Obion.)

L. valdiviana Phil. — Maury and Shelby.

Spirodela oligorrhiza (Kurtz) Hegelm. — Haywood. (Listed by Eyles and Eyles from Lake and Obion.)

S. polyrhiza (L.) Schleid. — Humphreys, Maury, Obion and Tipton.

Wolffia columbiana Karst. — Lake and Obion. (Listed by Gattinger from Davidson.)

Wolffiella floridana (J. D. Sm.) C. H. Thompson — (Listed by Eyles and Eyles from Lake and Obion.)

LENTIBULARIACEAE

Utricularia biflora Lam. — (Listed by Gattinger from Carroll, by Davis from Lake and Obion.)

U. gibba L. — (Listed by Gattinger from Hamilton, by Robinson from Morgan, by Svenson from Coffee and Warren.)

U. inflata Walt. — (Listed by Gattinger from Madison.)

U. subulata L. — Fentress.

U. vulgaris L. — Obion.

LYTHRACEAE

Decodon verticillatus (L.) Ell. — Lake, Obion and Warren.

MELASTOMATACEAE

Rhexia virginica L. — Scattered over central and western parts of the state.

NAJADACEAE

Najas flexilis (Willd.) R. & S. — Lake and Obion. (Listed by Robinson from Grundy.)

N. gracillima (A. Br.) Morong — Grundy, Hardeman.

N. minor Allioni — (Listed by Robinson from Grundy.)

N. guadalupensis (Spreng.) Magnus — (Listed by Eyles and Eyles from Lake and Obion.)

NYMPHAEACEAE

Brasenia schreberi Gmel. — Anderson, Henry and Putnam. (Listed by Gattinger from Sumner, by Eyles and Eyles from Obion.)

Cabomba caroliniana Gray — Obion and Weakley. (Listed by Eyles and Eyles from Lake.)

Nelumbo lutea (Willd.) Pers. — Jefferson and Obion. (Listed by Eyles and Eyles from Lake.)

Nuphar advena (Ait.) Ait. f. — Carroll, Cocke, Obion and Sevier. (Listed by Eyles and Eyles from Lake, by Robinson from Cumberland.)

Nymphaea odorata Ait. — Carroll, Gibson, Obion, Sevier and Weakley.
(Listed by Eyles and Eyles from Lake.)

ONAGRACEAE

Jussiaea decurrens (Walt.) DC. — Benton, Blount, Lauderdale and Roane.
(Listed by Eyles and Eyles from Obion.)

J. leptocarpa Nutt. — (Listed by Eyles and Eyles from Obion.)

J. repens L. — Fayette, Haywood, Lake, Lauderdale and Obion.
(Listed by Gattinger from Davidson.)

Ludwigia alternifolia L. — Benton, Cumberland, Hawkins.

L. glandulosa Walt. — Crockett, Hardeman, Obion, Shelby and White.

L. palustris (L.) Ell. — Scattered over most of the state.

L. sphaerocarpa Ell. — Grainger.

OSMUNDACEAE

Osmunda regalis L. — Scattered over most of the state.

PODOSTEMACEAE

Podostemum ceratophyllum Michx. — Blount, Coffee, Grundy, McMinn,
and VanBuren. (Listed by Robinson from Cumberland and Morgan.)

POLYGONACEAE

Polygonum coccineum Muhl. — (Listed by Steenis and Cottam and by
Davis from Lake and Obion.)

P. hydropteroides Michx. — (Listed by Steenis and Cottam from Lake
and Obion.)

Rumex verticillatus L. — Davidson and Knox. (Reported by Eyles, 1942,
from Lake and Obion.)

PONTEDERIACEAE

Heteranthera dubia (Jacq.) MacM. — Montgomery and Obion. (Listed
by Eyles and Eyles from Lake.)

H. limosa (Sw.) Willd. — Montgomery.

H. reniformis R. & P. — Hardin and Wayne. (Listed by Eyles and Eyles
from Lake and Obion.)

Pontederia cordata L. — Cumberland, Cocke and Obion. (Listed by
Svenson from Coffee and Grundy, by Gattinger from Robertson.)

PRIMULACEAE

Hottonia inflata Ell.— (Sight record listed by Eyles and Eyles from Obion.)

RANUNCULACEAE

[*Caltha natans* Pall. — (Reported from Lake and Obion by Gersbacher
and Norton but probably based on misidentification.)]

Ranunculus flabellaris Raf. — (Reported by Eyles, 1942, from Obion, by
Svenson from Franklin.)

R. longirostris Godr. — Credited to Tennessee by Fernald and Muenscher.)

R. pusillus Poir. — (Listed by Eyles and Eyles from Obion, by Svenson
from Franklin and Grundy.)

R. sceleratus L. — (Listed by Eyles and Eyles from Lake and Obion.)

SALVINIACEAE

Azolla caroliniana Willd. — Lake, Obion and Shelby. (Listed by Gat-
tinger from McMinn.)

SAURURACEAE

Saururus cernuus L. — Scattered over the state.

SAXIFRAGACEAE

Penthorum sedoides L. — Scattered over the state.

SCROPHULARIACEAE

Bacopa acuminata (Walt.) Robins. (*Pagesia acuminata* (Walt.) Pennell) — Widely distributed from Meigs and Hamilton west to Benton and McNairy.

B. rotundifolia (Michx.) Wettst. — Montgomery, Fayette, Davidson and Madison.

Gratiola brevifolia Raf. — Coffee, Grundy and White. (Reported by Svenson from Franklin.)

G. neglecta Torr. — Widely distributed in every major region of the state.

G. virginiana L. — Widely distributed in every major region of the state.

G. viscidula Pennell — Blount, Carter, Cocke and White.

G. floridana Nutt. — Franklin and Hamilton. (Listed by Gattinger from Davidson and E. Tenn. without locality.)

Lindernia anagallidea (Michx.) Pennell — Montgomery, Franklin, Jackson, Madison and Polk. (Listed by Robinson from Cumberland.)

L. dubia (L.) Pennell — Widely distributed in every major region of the state.

Tragiola pilosa (Michx.) S. & P. — Widely distributed in Cumberland Plateau and adjacent Highland Rim counties.

Veronica americana (Raf.) Schwein. — Carter, Knox (Pennell). (Credited to Tennessee by Muenscher, Fernald and Gleason.)

V. anagallis-aquatica L. (Including *V. glandifera* Pennell) — Rather general in E. Tenn. west to Anderson and Roane; also in Maury.

V. connata Raf. (*V. comosa* Richter) — Rutherford.

V. scutellata L. — Johnson.

SPARGANIACEAE

Sparganium americanum Nutt. — Cumberland, Fentress, Johnson, Monroe and Morgan (Listed by Robinson from Grundy and Putnam.)

S. androcladum (Engelm.) Morong—(Listed by Gattinger from Davidson.)

S. chlorocarpum Rybd. — (Listed by Robinson from Cumberland.)

S. eurycarpum Engelm. — (Listed by Gattinger from Bradley, Coffee and Davidson.)

TYPHACEAE

Typha angustifolia L. — Blount. (Listed by Gattinger from Polk.)

T. latifolia L. — Blount, Dickson, Henry and Monroe. (Listed by Eyles and Eyles from Lake and Obion, by Robinson from Cumberland, Fentress and Putnam.)

UMBELLIFERAE

Hydrocotyle americana L. — VanBuren. (Listed by Gattinger from Polk.)

Oxypolis rigidior (L.) C. & R. — Blount, Carter, Cumberland, Fentress, Johnson and Putnam. (Listed by Gattinger from over the state.)

Sium suave Walt. — Coffee and Lake.

XYRIDACEAE

Xyris caroliniana Walt. — Cumberland, Grundy and Morgan. (Listed by Robinson from Fentress.)

ZOSTERACEAE

Potamogeton amplifolius Tuckerm. — (Credited to Tennessee by Muenscher.)

- P. berchtoldi* Fieber — (Listed by Eyles and Eyles from Lake and Obion.)
- P. bicupulatus* Fern. — Cumberland and Fentress.
- P. crispus* L. — Anderson, Roane, and Sullivan.
- P. diversifolius* Raf. — Blount, Cheatham, Claiborne, Coffee, Cumberland, Fayette, Franklin, Hawkins, Knox, McMinn, Montgomery, Morgan, Putnam, Rutherford and White.
- P. epihydrus* var. *nuttallii* (C. & S.) Fern. — (Credited to Tennessee by Fernald.)
- P. epihydrus* var. *ramosus* (Peck) House — Blount and Johnson.
- P. filiformis* Pers. — (Reported by Davis from Lake and Obion but possibly based on a misidentification; no herbarium specimens seen.)
- P. foliosus* Raf. var. *foliosus* — Marion, Rutherford and Sullivan. (Listed by Robinson from Fentress.)
- P. foliosus* var. *macellus* Fern. — Cumberland.
- P. natans* L. — (Listed by Gattinger from West Tennessee.)
- P. nodosus* Poir. — Dickson, Hawkins, Lake, Montgomery and Obion.
- P. pectinatus* L. — Grainger and Lake. (Listed by Eyles and Eyles from Obion.)
- P. perfoliatus* L. — (Listed by Gattinger from Shelby.)
- P. pulcher* Tuckerm. — Bledsoe, Gibson, Grundy, Morgan and Union.
- P. pusillus* L. — Claiborne (?), Lake (?). (Listed by Gattinger from Cocke; by Eyles, 1942, from Obion.)
- P. tennesseensis* Fern — Cumberland, Fentress, Morgan, Polk (?).
- P. zosteriformis* Fern. — (Reported by Davis from Lake and Obion but possibly based on misidentification; no herbarium specimens seen.)
- Zannichellia palustris* L. — Montgomery. (Listed by Eyles and Eyles, by Davis, and by Steenis and Cottam from Lake and Obion.)

REFERENCES CITED

- Davis, J. H., Jr. 1937. Aquatic Plant Communities of Reelfoot Lake. *Jour. Tenn. Acad. Sci.* 12:96-103.
- Eyles, M. S. 1942. Plants of Reelfoot Lake with Special Reference to Use as Duck Foods. *Jour. Tenn. Acad. Sci.* 17:14-21.
- Eyles, M. S. and Eyles, D. E. 1943. A Local Flora of the Reelfoot Lake Region of West Tennessee. *Jour. Tenn. Acad. Sci.* 18:108-136.
- Fernald, M. L. 1950. *Gray's Manual of Botany, Eighth Edition.* American Book Co., New York, N. Y. 1632 p.
- Gattinger, A. 1901. *The Flora of Tennessee and a Philosophy of Botany.* Gospel Advocate Publishing Co., Nashville, Tenn. 296 p.
- Gersbacher, E. O. and Norton, E. M. 1939. A Typical Plant Succession at Reelfoot Lake. *Jour. Tenn. Acad. Sci.* 14:230-238.
- Jennison, H. M. 1935. Notes on Some Plants of Tennessee. *Rhodora* 37:309-323.
- Muenschner, W. C. 1944. *Aquatic Plants of the United States.* Comstock Publishing Co., Inc., Ithaca, N. Y. 374 p.
- Pennell, F. W. 1935. The Scrophulariaceae of Eastern Temperate North America. *Acad. Nat. Sci. Phila.*, Monograph 1, pp. xiv + 650.
- Robinson, F. D. 1956. An Ecological Survey of the Vascular Aquatic Vegetation of the Cumberland Plateau in Tennessee. Unpublished thesis. University of Tennessee, Knoxville, Tennessee. 44 p.
- Steenis, J. H. and Cottam, C. 1945. A Progress Report on the Marsh and Aquatic Plant Problem: Reelfoot Lake. *Jour. Tenn. Acad. Sci.* 20:6-19.
- Svenson, H. K. 1941. Notes on the Tennessee Flora. *Jour. Tenn. Acad. Sci.* 16:111-160.