

## AMONG RHODE ISLAND WILD FLOWERS



## RHODE ISLAND CARNIVOROUS PLANTS

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NEW ENGLAND CARNIVOROUS PLANT SOCIETY

### What are carnivorous plants?

The famous historical naturalist, Charles Darwin described carnivorous plants as “The most wonderful plants in the world”. The Swedish botanist Carl Linnaeus is quoted on carnivorous plants, “to think that plants ate insects would go against the order of nature as willed by God”. Against God’s will or not, we now know that Carnivorous plants are plants that eat small insects and animals. They thrive in wet, humid and nutrient poor environments. They trap and digest small invertebrates as a source of nitrogen to compensate the lack of nutrients in their habitat. Scientists believe that the carnivory gave them the evolutionary advantage to grow in such nutrient poor environments where most other plants cannot survive. Most of you may naturally think that carnivorous plants are from warm tropical rain forests. However, they grow all over the world except antarctica. In fact, we do have 3 genera and 14 species of carnivorous plants in Rhode Island! They can be found in bogs, ponds and wetlands all around RI.

### *Sarracenia*

The genus is also known as American pitcher plants. As the name suggests, they grow in North America and Canada. They employ pitcher shaped pitfall traps to capture their prey. The underside of the lid as well as the lips of the traps produce nectars that attract many insects such as flies and wasps. The prey falls into the trap because these parts of the plants are slippery. The prey won’t be able to get out of the trap easily, because the hairs inside the trap grow downWARDS, and they will eventually be digested. Sarracenia are not known for enzymatic digestion, but rather rely on fermentation by bacteria and fungi. There are thought to be 8 distinct species (not including variations) of Sarracenia occurring in eastern coast of the United States. *S. purpurea* is the only northern species and therefore is the only one you can find in RI.

## *Drosera*

*Drosera*, aka sundews use glue traps to capture insects. Their leaves have numerous glands that secrete sticky nectar with digestive enzymes. The insects that are attracted to the nectar will be “glued in” on the trap. All the surrounding glands will eventually bend in to cover the entire body of the prey. This process has been extensively described by Charles Darwin in his book “Insectivorous Plants”. *Drosera* occur in every continent except antarctica. About 250 species have been discovered so far. But the numbers are increasing. We have 3 species of *Drosera* in RI, *D. rotundifolia*, *D. filiformis* (State Historical) and *D. intermedia*.

## *Utricularia*

*Utricularia*, aka bladderwort are rootless, semi-aquatic to fully aquatic, and rather inconspicuous plants. However, they use the most complex bladder shaped traps to capture their prey. Like *Drosera*, there are roughly 250 species of *Utricularia* found in every continent except antarctica. A bladder trap is like a small bag with a door. The bladder actively transport water out to create a negative pressure inside it. When a prey bends the sensitive hairs on the trap door, the door opens, thereby sucking the prey within. This movement is considered to be the fastest in the entire plant kingdom! We have 10 species of *Utricularia* in RI, 3 terrestrial species: *U. cornuta*, *U. resupinata*, and *U. subulata*, and 6 aquatic species: *U. intermedia*, *U. minor*, *U. vulgaris*, *U. radiata*, *U. purpurea*, *U. geminiscapa*, and *U. gibba*.

Emmi Kurosawa  
New England Carnivorous Plant Society



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# *Sarracenia*

## *Sarraceniaceae*—*Pitcher-plant family*

**BOTANICAL NAME:** *Sarracenia purpurea*  
**COMMON NAME:** *Purple Pitcher Plant, Indian Dipper, Side-saddle Flower*

**HABITAT:** sphagnum bogs, sandy or marly shores  
**BLOOMING DATE:** June 16-July 26

**STATE STATUS:** **O**  
**COUNTIES FOUND IN:** **KE, PR, WA**



Above photo: *Pitcher Plant*  
Photo credit: © Francis R. Underwood 2019



Above photo: *Close-up of pitcher*  
Photo credit: kbarton

# *Sarracenia*

*Sarraceniaceae*—*Pitcher-plant family*

## *Sarracenia purpurea*



Upper photo: *Reddish Pitchers*  
Photo credit: © Emmi Kurosawa 2019



Upper photo: *Pitcher Plant with blossoms*  
Photo credit: © Francis R. Underwood 2019

Lower Photo: *Pitcher Plant in marsh*



Lower Photo: *Pitcher Plant bud*  
Photo credit: kbarton



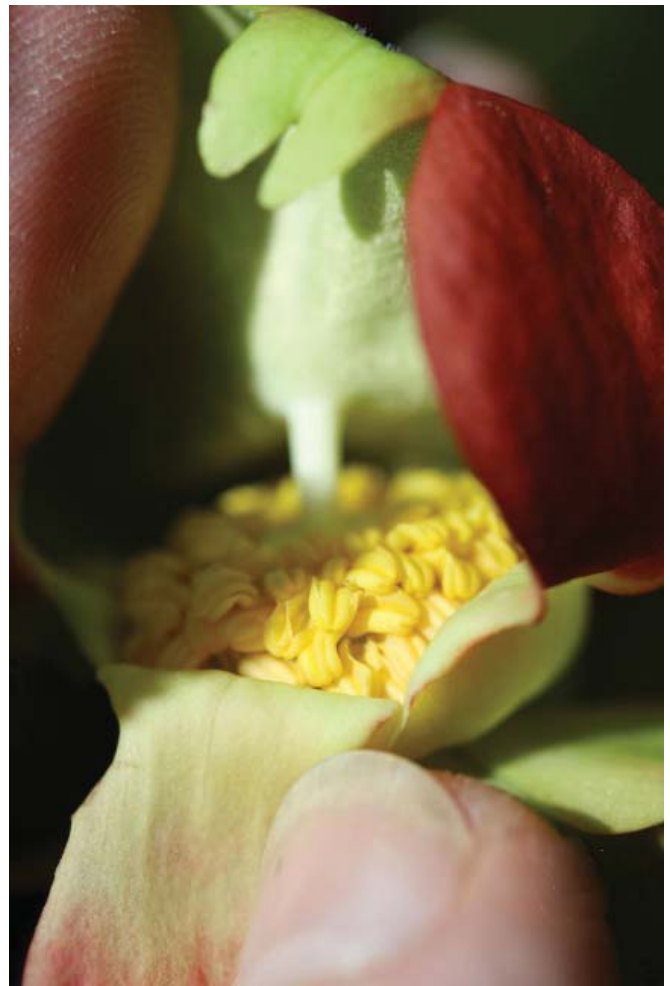
# *Sarracenia*

*Sarraceniaceae*—*Pitcher-plant family*

*Sarracenia purpurea*



Above photo: *Pitcher Plant bud opening*  
Photo credit: © Francis R. Underwood 2019



Above photo: *Stamens of Pitcher Plant*  
Photo credit: kbarton

# *Drosera*

## *Droseraceae*—*Sundew family*

**BOTANICAL NAME:** *Drosera filiformis*  
**COMMON NAME:** Thread-leaved Sundew, Red-rot  
**HABITAT:** coastal bogs and fens  
**BLOOMING DATE:** 7/4-8/26  
**STATE STATUS:** SH  
**COUNTIES FOUND IN:** WA



Above photo: *D. filiformis* plant with seeds  
Photo credit: © Emmi Kurosawa 2019



Above photo: *D. filiformis* in group  
Courtesy W.D. and Dolphia Bransford,  
Lady Bird Johnson Wildflower Center

*Drosera*  
*Droseraceae*—Sundew family  
*Drosera filiformis*



Above photo: *D. filiformis* leaf  
Photo credit: Rosťa Kracík [CC BY 3.0 cz (<https://creativecommons.org/licenses/by/3.0/cz/deed.en>)]



Above photo: *D. filiformis*--close-up of flower  
Photo credit: Rosťa Kracík [CC BY 3.0 cz (<https://creativecommons.org/licenses/by/3.0/cz/deed.en>)]



Above photo: *D. filiformis*--flower stalk  
Photo credit: Rosťa Kracík [CC BY 3.0 cz (<https://creativecommons.org/licenses/by/3.0/cz/deed.en>)]



# *Drosera*

## *Droseraceae*—Sundew family

**BOTANICAL NAME:** *Drosera intermedia*  
**COMMON NAME:** Spatulate-leaved Sundew

**HABITAT:** wet places, shallow water  
**BLOOMING DATE:** 7/10-8/11

**STATE STATUS:** C  
**COUNTIES FOUND IN:** KE, NE, PR, WA



Above photo: *D. intermedia* flower  
Photo credit: ©David G. Smith, <http://www.delawarewildflowers.org>



Above photo: *D. intermedia* plant  
Photo credit: ©David G. Smith, <http://www.delawarewildflowers.org>

*Drosera*  
*Droseraceae*—*Sundew family*  
*Drosera intermedia*



Above photo: *Dragonfly captured by D. intermedia*  
Photo credit: © Emmi Kurosawa 2019



Above photo: *D. intermedia with flower stalk*  
Photo credit: Hajotthu [CC BY-SA 3.0(  
<http://creativecommons.org/licenses/by-sa/3.0/>)]>

# *Drosera*

*Droseraceae*—*Sundew family*

**BOTANICAL NAME:** *Drosera rotundifolia*

**COMMON NAME:** Round-leaved Sundew,  
Dew-plant, Moor-grass

**HABITAT:** bogs and swamps

**BLOOMING DATE:** June to August

**STATE STATUS:** C

**COUNTIES FOUND IN:** ALL



2012 © Peter M. Dziuk

Above photo: *D. rotundifolia* plant with captured moth  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



2006, 2012 © Peter M. Dziuk

Above photo: *D. rotundifolia* buds and seeds  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
[https://www.minnesotawildflowers.info](https://www.minnesotawildflowers.info/)

# *Drosera*

## *Droseraceae*—Sundew family

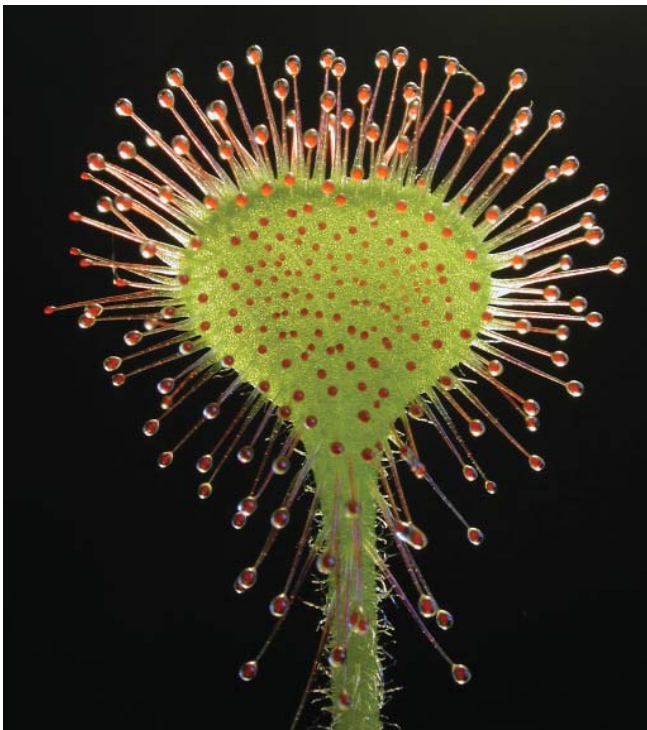
### *Drosera rotundifolia*



Above photo: *D. rotundifolia* plant with captured moth  
Photo credit: No machine-readable author provided. Noah Elhardt assumed (based on copyright claims). [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>)]



Above photo: *D. rotundifolia* --close up of "dew" on leaf  
Photo credit: © Emmi Kurosawa 2019.



Above photo: *D. rotundifolia* plant with captured moth  
Photo credit: Petr Dlouhý [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>)]

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia cornuta*

**COMMON NAME:** *Horned Bladderwort,*

**HABITAT:** wet shores, out of water on low grounds

**BLOOMING DATE:** 7/31) 7/2-9/12

**STATE STATUS:** **U**

**COUNTIES FOUND IN:** **PR, WA**



2005 © Peter M. Dziuk

Above photo: *U. cornuta* -- flowers  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



www.darwinsatelier.com

Above photo: *D. rotundifolia* plant with captured moth  
Photo credit: © Emmi Kurosawa 2019

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia cornuta*



Above photo: *U. cornuta plants in wetland*

Photo credit: Costea, M. and Costea, G. PhytoImages.

Available from: <http://www.phytoimages.siu.edu>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia geminiscapa*

**COMMON NAME:** *Mixed Bladderwort,*

**HABITAT:** quiet water, sandy shores

**BLOOMING DATE:** 7/15-9/2

**STATE STATUS:** SC

**COUNTIES FOUND IN:** KE, PR, WA



Above photo: *U. geminiscapa* -- flower  
Photo credit: © Emmi Kurosawa 2019



Above photo: *U. geminiscapa* -- plant  
Photo: John Thayer, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia geminiscapa*



2014 © John Thayer

Above photo: *U. geminiscapa* -fruit from  
*cleistogamous flowers*

Photo: John Thayer, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



2014 © John Thayer

Above photo: *U. geminiscapa* sepals and bracts

Photo: John Thayer, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia gibba*

**COMMON NAME:** Creeping Bladderwort,

**HABITAT:** shallow water

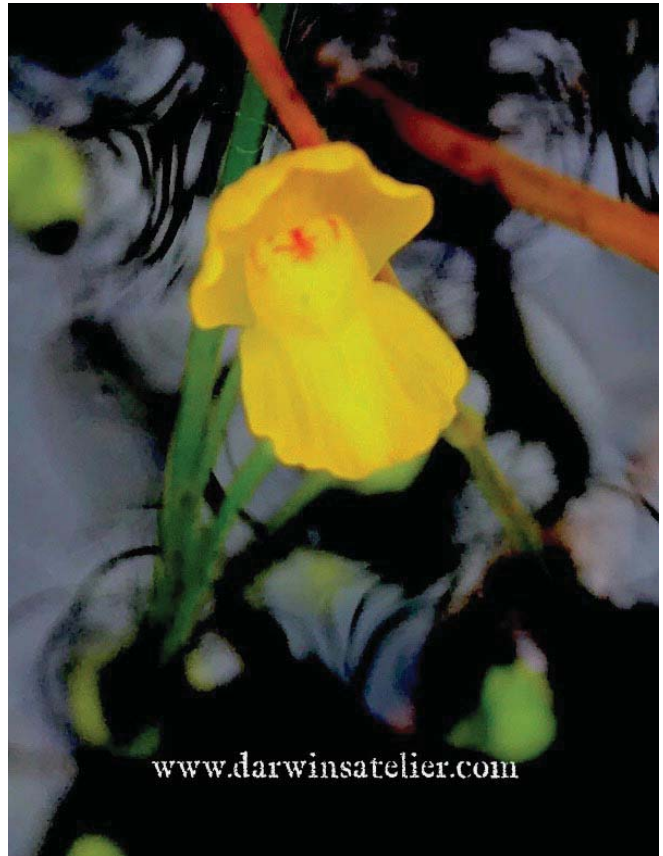
**BLOOMING DATE:** 9/1-10/9

**STATE STATUS:** SC

**COUNTIES FOUND IN:** KE, PR, WA



Above photo: *U. gibba* -- close up of flower  
Photo credit: ©David G. Smith, <http://www.delawarewildflowers.org>



Above photo: *U. gibba* -- close up of flower  
Photo credit: Photo credit: © Emmi Kurosawa 2019

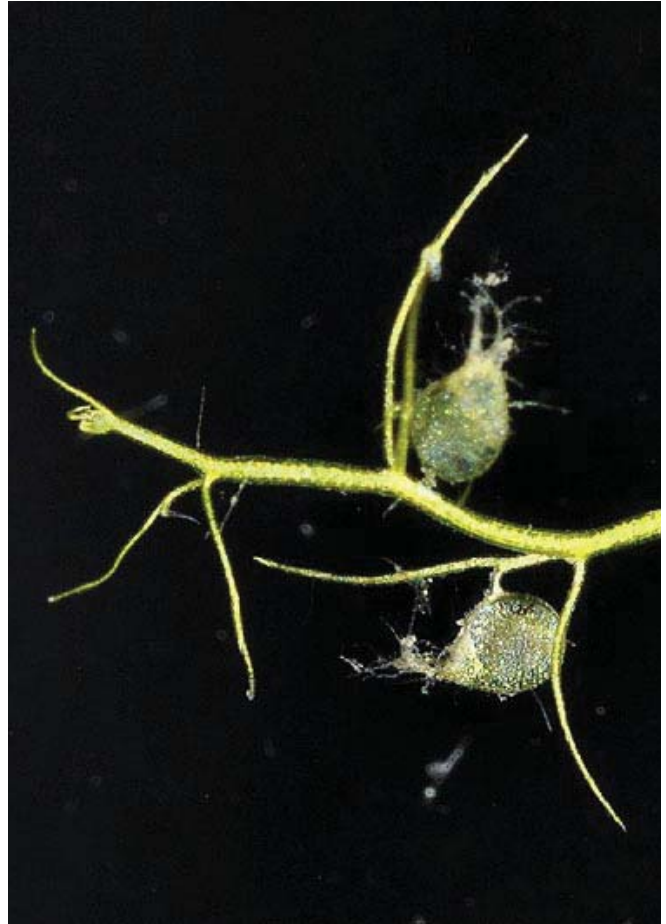
# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia gibba*



Above photo: *U. gibba* -- *plant*  
Photo credit: ©David G. Smith, <http://www.delawarewildflowers.org>



Above photo: *U. gibba* -- *Submerged branch with  
forked leaves and two bladders*  
Photo credit: ©David G. Smith, <http://www.delawarewildflowers.org>

# *Utricularia*

## *Lentibulariaceae—Bladderwort Family*

<b>BOTANICAL NAME:</b>	<i>Utricularia intermedia</i>
<b>COMMON NAME:</b>	Flat-leaved Bladderwort,
<b>HABITAT:</b>	shallow waters, muddy soil on drawn down pond shores
<b>BLOOMING DATE:</b>	6/5-8/4
<b>STATE STATUS:</b>	SC
<b>COUNTIES FOUND IN:</b>	WA (reported)



Above photo: *U. intermedia* -- close up of flower  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



Above photo: *U. intermedia* -- close up of flower  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia intermedia*



Above photo: *U. intermedia* -- foliage  
Photo credit: © Emmi Kurosawa 2019



Above photo: *U. intermedia* -- close up of leaf  
photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

# *Utricularia*

## *Lentibulariaceae—Bladderwort Family*

### *Utricularia intermedia*



Above photo: *U. intermedia* -- turion\*

Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

\* Some of the aquatic species produce turions (or “winter buds”) at the apices of branches. These consist of very short internodes with tightly compacted overlapping dissected leaves and a mucilaginous matrix. Turions are often conspicuous toward the end of the summer and in *U. vulgaris*, at least, have been shown to be induced by environmental change to short day lengths.

The above excerpted from Michigan Flora  
<https://michiganflora.net/genus.aspx?id=Utricularia>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia minor*

**COMMON NAME:** Lesser Bladderwort,

**HABITAT:** shallow water

**BLOOMING DATE:** 5/27-7/18

**STATE STATUS:** SH

**COUNTIES FOUND IN:** —



Above photo: *U. minor* -- close-up of flower

Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



Above photo: *U. minor* -- Plants

Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia minor*



Above photo: *U. minor* -- leaves  
Photo credit: © Emmi Kurosawa 2019



Above photo: *U. minor* -- bladders  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia minor*



2012 © Peter M. Dziuk

Above photo: *U. minor* -- turion\*

Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

\* Some of the aquatic species produce turions (or “winter buds”) at the apices of branches. These consist of very short internodes with tightly compacted overlapping dissected leaves and a mucilaginous matrix. Turions are often conspicuous toward the end of the summer and in *U. vulgaris*, at least, have been shown to be induced by environmental change to short day lengths.

The above excerpted from Michigan Flora  
<https://michiganflora.net/genus.aspx?id=Utricularia>



# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia purpurea*

**COMMON NAME:** Eastern purple Bladderwort,

**HABITAT:** quiet water

**BLOOMING DATE:** 7/6-9/6

**STATE STATUS:** U

**COUNTIES FOUND IN:** KE, PR, WA



2013 © Peter M. Dziuk

Above photo: *U. purpurea* flowers

Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



Above photo: *U. purpurea* -- close up of flower

Photo credit: ©David G. Smith, <http://www.delawarewildflowers.org>

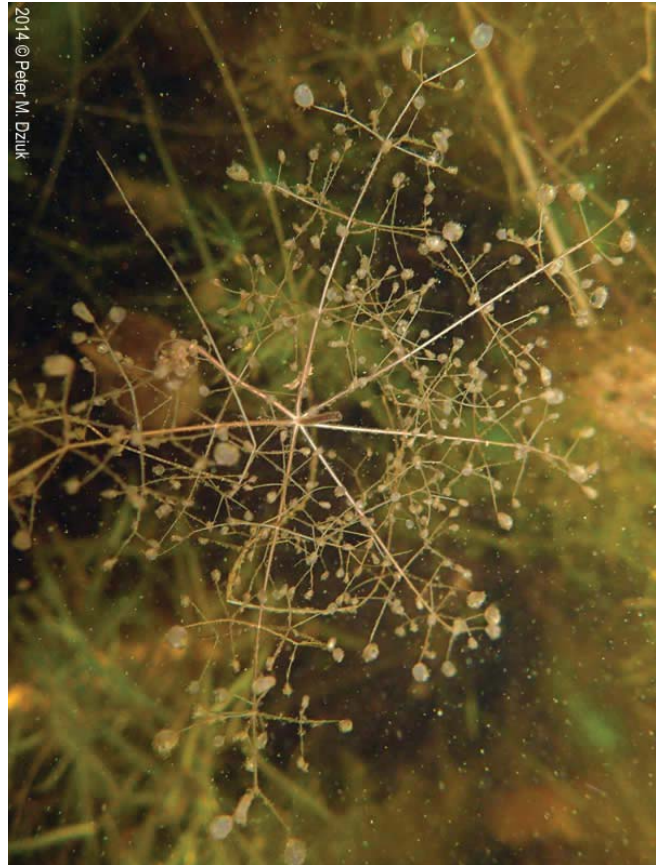
# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

*Utricularia purpurea*



Above photo: *U. purpurea* -- flower stalk  
Photo credit: © Emmi Kurosawa 2019



Above photo: *U. purpurea* --leaves and bladders  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia radiata*

**COMMON NAME:** Floating Bladderwort,

**HABITAT:** floating on surfaces of ponds

**BLOOMING DATE:** 7/4-10/12

**STATE STATUS:** U

**COUNTIES FOUND IN:** KE, NE, PR, WA



Above photo: *U. radiata*--close up of flower  
Photo credit: :Alan Cressler, Lady Bird Johnson Wildflower Center



Above photo: *U. radiata* plant  
Photo credit: :Alan Cressler, Lady Bird Johnson Wildflower Center

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia radiata*



Above photo: *U. radiata*--plants in habitat  
Photo credit: © Emmi Kurosawa 2019

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia resupinata*  
**COMMON NAME:** Resupinate Bladderwort,  
**HABITAT:** muddy soil, drawn down ponds with sandy substrate  
**BLOOMING DATE:** 7/14-9/22  
**STATE STATUS:** SC  
**COUNTIES FOUND IN:** KE, WA



Above photo: *U. resupinata* -- Flower  
Photo credit: :Alan Cressler, Lady Bird Johnson Wildflower Center



2015 © Peter M. Dziuk

Above photo: *U. resupinata* -- close-up of flower  
Photo credit: :Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia resupinata*

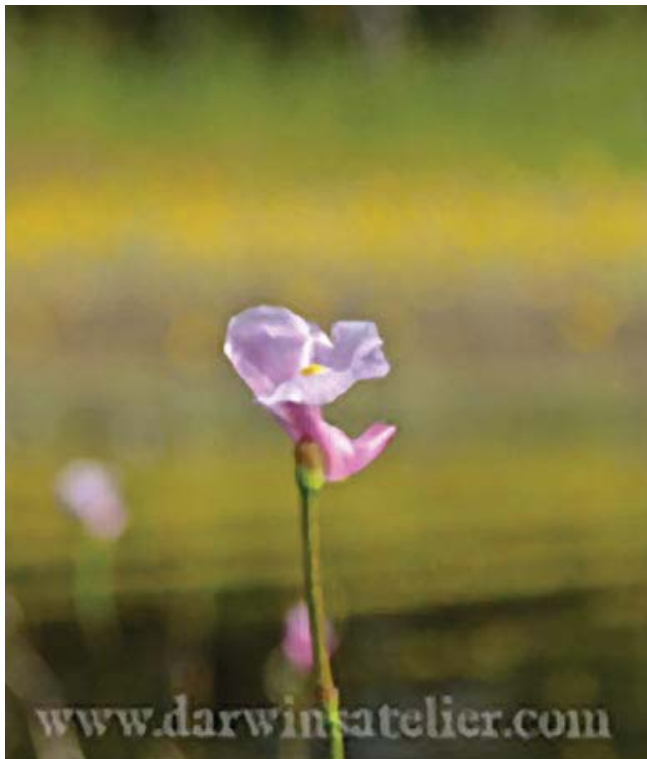


Above photo: *U. resupinata* -- two views of the flower

Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

Photo at left: *U. resupinata* -- flower stalk

Photo credit: © Emmi Kurosawa 2019



# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia resupinata*



Above photo: *U. resupinata* -- glands  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



Above photo: *U. resupinata* -- Bladders  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

*Utricularia*  
*Lentibulariaceae—Bladderwort Family*

*Utricularia resupinata*



2015 © Peter M. Dziuk

Above photo: *U. resupinata* -- *Leaves*  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia subulata*  
**COMMON NAME:** Slender Bladderwort, Zig-zag Bladderwort  
**HABITAT:** wet soil, shallow water  
**BLOOMING DATE:** 8/30-9/15  
**STATE STATUS:** SC  
**COUNTIES FOUND IN:** PR



Above photo: *U. subulata* flower  
Photo credit: P© Emmi Kurosawa 2019



Above photo: *U. subulata* plants  
Photo credit: Noah Elhardt [CC BY-SA 3.0  
(<http://creativecommons.org/licenses/by-sa/3.0/>)]

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

**BOTANICAL NAME:** *Utricularia vulgaris*  
**COMMON NAME:** Common Bladderwort, Greater Bladderwort  
**HABITAT:** quiet water  
**BLOOMING DATE:** 7/9-9/6  
**STATE STATUS:** **F**  
**COUNTIES FOUND IN:** **KE, NE, PR, WA**



Peter M. Dziuk

Above photo: *U. vulgaris* flowers  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



2012 © Peter M. Dziuk

Above photo: *U. vulgaris* plants  
Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

# *Utricularia*

*Lentibulariaceae—Bladderwort Family*

## *Utricularia vulgaris*



Above photo: *U. vulgaris* leaves

Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>



Above photo: *U. vulgaris* turion\*

Photo credit: Peter Dziuk, via Minnesota Wildflowers,  
<https://www.minnesotawildflowers.info/>

\* Some of the aquatic species produce turions (or “winter buds”) at the apices of branches. These consist of very short internodes with tightly compacted overlapping dissected leaves and a mucilaginous matrix. Turions are often conspicuous toward the end of the summer and in *U. vulgaris*, at least, have been shown to be induced by environmental change to short day lengths.

The above excerpted from Michigan Flora  
<https://michiganflora.net/genus.aspx?id=Utricularia>

The information on Rhode Island Carnivorous Plants comes from several sources. The Blooming dates are based on Seymour's "Flora of New England." The county and status information is from Rick Enser's Rare Plants of RI 2007 and RI Wildlife Action Plan 2015, Appendix 1d, and ,for plants not on the Rare Plant List, the status is taken from Gil George's Rhode Island Botanical Survey Check List, published in 1999. Francis Underwood provided habitat information.

### **RI Rare Plant Status (used only in RI)**

- SE State Endangered.** Native species in imminent danger of extirpation from Rhode Island. In general, these species have 1 or 2 known or estimated total populations in the state. Plants listed as State Endangered are protected under the provisions of the Rhode Island State Endangered Species Act, Title 20 of the General Laws of the State of Rhode Island.
- ST State Threatened.** Native species which are likely to become State Endangered in the future if current trends in habitat loss or other detrimental factors remain unchanged. In general, these species have 3-5 known or estimated populations and are especially vulnerable to habitat loss.
- SC State Concern.** Native species not considered to be State Endangered or Threatened at the present time, but are listed due to various factors of rarity and/or vulnerability.
- SH State Historical.** Native species which have been documented for Rhode Island during the last 150 years but for which there are no extant populations.

For Plants not on the RI Rare Plant List

- C** - Common
- A** - Abundant
- F** - Frequent
- U** - Uncommon
- O** - Occasional
- R** - Rare

### **RI County abbreviations**

- Bristol **BR**
- Kent **KE**
- Newport **NE**
- Providence **PR**
- Washington **WA**



*Special Thanks to  
New England Carnivorous  
Plant Society  
and  
Emmi Kurosawa*

The mission of the New England Carnivorous Plant Society shall be to share, to gain knowledge of, and to achieve expertise in all phases of growing, education, appreciation, and conservation of carnivorous plants in both culture and in native habitats.

<http://www.necps.org/>



[among-ri-wildflowers.org](http://among-ri-wildflowers.org)

2019