

# Tropical Fish Society of Rhode Island Horticulture Awards Program

Revised: January 15, 2009

**Purpose**: The purpose of the Horticultural Award Program (HAP) is to promote the keeping and propagation of aquatic plants, aid in the recognition of the species, encourage research, through the growth and propagation of different species, and recognize achievements of individuals through awards.

Aquatic Plant Defined: An aquatic plant is one with a submerged or floating form, as a normal occurrence, at some time during the course of any one complete growing season.

**The HAP Committee**: The President shall appoint The HAP Chair, and the HAP Chair shall appoint the remaining members as necessary.

**Function of the HAP Committee**: To oversee and enforce all rules and regulations governing the HAP, awarding points to qualifying members, maintaining records and presenting awards. The HAP rules and regulations shall be reviewed and revised when necessary.

**HAP Checkers**: Any person on the HAP committee may verify the species of a submitted plant and any flowerings or sexual propagation, with the HAP chair having final approval. The HAP Chair reserves the right to reject stunted, algae covered, or unhealthy plants.

**Noxious and Invasive Plants**: The importation, transportation, sale, purchase, possession, cultivation or distribution of a number of invasive plants including the following aquatic and wetland plants is currently prohibited by Rhode Island, Massachusetts or Connecticut laws. Since one of the goals of TFSRI includes conservation of native resources, the following plants are excluded from the TFSRI HAP, even if not specifically illegal in Rhode Island itself.

Azolla pinnata Butomus umbellatus Cabomba caroliniana Callitriche stagnali Caulerpa taxifolia Egeria densa Eichhornia crassipes Hydrilla verticillata Hygrophila polysperma Ipomoea aquatica Iris pseudacorus Lagarosiphon major Limnophila sessiliflora, Lythrum salicaria Marsilea quadrifolia Monochoria hastate Monochoria vaginalis Myriophyllum aquaticum Myr. heterophyllum Myriophyllum spicatum Najas minor Nasturtium microphyllum Nasturtium officinale Nelumbo lutea Nymphoides peltata, Ottellia alismoides Pistia stratiotes Phragmites australis Potamogeton crispus Rorippa microphylla R. nasturtium-aquaticum Sagittaria sagittifolia Salvinia auriculata Salvinia biloba Salvinia herzogii Salvinia molesta Trapa natans.

### **Points:**

All plants are divided into four difficulty classes; Class A is worth 5 points, Class B is worth 10 points, Class C is worth 15 points, and Class D is worth 20 points.

# **Rules:**

- **Classes A, B, & C:** The aquarist must propagate each plant species as described below. Points can only be earned by auctioning off the minimum amount of plant material at a monthly meeting or a TFSRI auction. The proceeds of the sale of these plants go entirely to TFSRI.
- **Class D:** In addition to the requirements of classes A, B, & C, the aquarist must write an article for the Tankquilizer detailing the propagation procedure and submit it to the editor within 30 days of the auction. If not submitted within the time period, the aquarist will not be awarded the 20 points. An additional 5 points is awarded upon submission of the article. If the article is submitted after the 30-day period, the aquarist must then resubmit the plants for auction. Articles for second, third, or fourth generation Class D spawns are not required.

# **Requirements for Propagation**

The propagation process must be completed in the manner described below:

- a) For floating plants, about 1/2 cup (not including water) must be submitted. For tiny plants such as *Wolffia arrhiza* and other similar species, at least one heaping tablespoonful must be submitted. The initial volume of the plants must be doubled.
- b) For bunch plants, the initial stem count shall be at least six stems, rooted or unrooted, and must be doubled as determined by the count of growing stems. Growth that is simply continued growth of obtained plants does not count! Material turned in for the HAP must be from side shoots, new stems after trimming, or runners.
- c) Reproduction by means of runners shall be recognized when three or more healthy plants are produced, which are capable of living independently from the parent plant. The parent plant must also be alive and healthy.
- d) For mosses and similar plants, a patch at least 3" x 3" or similar size in area must be submitted.
- e) Flowering, when properly verified, shall be awarded extra points equal to the value of the asexual propagation of the particular plant species. A clear digital photo of the inflorescence donated to the TFSRI library will be worth an additional 5 points. The photo may be taken by the member, or by a member of the HAP committee, but the points are awarded to the member who produced the bloom.
- f) Sexual reproduction will be recognized for one or more plant reproducing by sexual means from the aquarists own stock. Sexual propagation will be awarded 2 times the value of asexual propagation. Seeds and reproduced plants must be from the member's parent plant(s) and not obtained from a supplier or nursery. The reproduction of those plants propagating form spores i.e. (ferns) will be considered a sexual reproduction and shall be awarded 2 times the point value of the asexual propagation of the particular plant species.
- g) Re-growth of a seasonal plant does not count as propagation; it is simply classified as a new growth. (Examples are the *Aponogeton sp.*)

# **Additional Criteria:**

- 1.) The aquarist must be a member in good standing of TFSRI in order to participate in the HAP.
- 2.) It is the responsibility of the aquarist to see that HAP points are recorded by giving all the necessary information to the chairman of the HAP at the time the plant is presented for the auction. HAP paperwork must accompany the plant to be auctioned to have points awarded.
- 3.) The first time that a species is turned in to the HAP, an additional 5 points will be awarded. Other aquarists will have a 1 month grace period, if they propagate the same species, to collect the first time species points.
- 4.) No points will be awarded for hybrids, nor does TFSRI accept them as donations to any TFSRI auction. Plants should be free from algae or disease. Specific cultivars, plants selectively bred for color, stem or leaf form, and transgenic plants are accepted.
- 5.) Ten points will be awarded for plant maintenance and propagation articles (other than those required for Class D) submitted to the editor of the Tankquilizer if the article is at least 300 words long. Comedy or storytelling articles are not eligible for HAP points.
- 6.) Points are only awarded once for each species except as follows:
  - A.) Specific cultivars
  - B.) Uniquely maintained color varieties
  - C.) Uniquely maintained shape varieties

Points will be awarded for a maximum of 3 varieties or cultivars per species per calendar year.

### Additional Criteria:

- 1.) Members are encouraged to submit any plant that they feel should be reclassified to the HAP Chair.
- 2.) Plants submitted for auction must be clearly labeled with the aquarist's name, scientific name of the plant, cultivar or variety, and common name where applicable. Other information relevant to the plant such as light level and CO<sub>2</sub> requirements should also be provided.

### **Achievement Awards:**

- Aquatic Horticulturist: 25 points earned by propagating plants from any difficulty class or classes.
- **Senior Aquatic Horticulturist: 50 points** must be earned by propagating plants from at least two difficulty classes.
- Advanced Aquatic Horticulturist: 100 points must be earned by propagating plants from at least three difficulty classes, and one flowering or sexual reproduction
- **Expert Aquatic Horticulturist: 300 points** must be earned by propagating at least three species of plants from difficulty classes A, B&C plut at least one plant from class D, and must include at least 3 flowerings or sexual reproductions.
- **Superior Aquatic Horticulturist: 700** points must be earned by propagating at least two species from Class D, and a total of 7 flowerings or sexual reproductions.
- Master Aquatic Horticulturist: 1000 points must be eared by propagating at least 5 plants from each difficulty class and including at least 10 flowerings or sexual reproductions.
- Certificates will be awarded at the completion of the achievement levels. Plaques will be awarded at opportune times.

Aquatic Horticulturist of the Year: This award is presented to the horticulturist who earns the most points in the HAP program each calendar year.

**Amendments:** The HAP committee may make changes to these rules, as they deem necessary, subject to the approval of the Board of Directors. Changes will be published to TFSRI members.

Acknowledgements: The TFSRI HAP program rules were largely based on the Oklahoma Aquarium Society's HAP. Contributors modifying the program for TFSRI include Richard Green, Richard Pierce, Richard Rego and Huy Vu.

### References

Baensch Aquarium Atlas volumes 1-3 Miniencyclopedia Aquarium Plants by Peter Hiscock, published by Barrons Tropica Aquarium Plants, Second Edition by Tropica A Fishkeepers Guide to Aquarium Plants by Barry James published by Tetra Press. Aquarium Plants, their identification, cultivation and ecology by Dr. Karel Rataj and Thomas J. Horeman. Published by TFH http://plants.usda.gov

Marine Plants of the Caribbean: A Field Guide from Florida to Brazil by Littler, Littler, Bucher & Norris published by Smithsonian Institution.

### Groups

For the purpose of this HAP, aquatic plants have been divided into ten groups. These groups are simply an artificial means of dividing aquatic plants by habit or overall appearance. Mode of reproduction, structure and scientific classification also factor into the placement of each plant in its group. Freshwater algae are excluded from the HAP. Among marine alga, only macroalgal forms will be eligible for inclusion in the program. Marine microalgae are excluded from the HAP.

### **Species Listing by Group**

### **Group A - Floating Plants**

Plants that float on the surface of the water. They have some parts reduced (roots, stems, or leaves) and for nourishment they are dependent on dissolved matter in the water. They are free floating and do not root to any substrate. Some have floating leaves exposed to the air and others like *Ceratophyllum* stay submerged but do not form true roots.

5 points: All *Ceratophyllum* species All species of *Lemna* All species of *Salvinia* except *S. cucullata Spirodela polyrhiza*  10 points: Aldrovanda vesiculosa Azolla caroliniana Limnobium stoloniferum, L. spongia, L. laevigatum Ludwigia species Riccia fluitans Wolffia arrhiza All species not mentioned in other point groups

15 points: Eichhornia All species (water hyacinth)

20 points: *Utricularia* (bladder worts) All species *Salvinia cucullata* 

### Group B -All Sagittaria & Vallisneria Type Plants

These are submersed plants with long leaves which are thread-shaped or ribbon-shaped, creating a rosette. They root on the bottom and flower on the surface of the water with the exception of male *Vallisneria* flowers.

5 points: *Vallisneria spiralis* 

10 points: Eleocharis acicularis, E. parvula, E. vivipara Sagittaria eatonii, S. graminea, S. subulata Vallisneria americana, V. gigantea, V. natans All species not mentioned in other groups

15 points: Subularia aquatica

20 points: Blyxa aubertii, Blyxa japonica Cyperus helferi

# **Group C – Rosette Plants:** *Anubias, Aponogeton. Crinium, Cryptocoryne & Echinodorus* Rosette plants with their leaves submersed and with distinct petioles

5 points: None

10 points: *Crinum aquatica, C. natans, C. thaianum Ottelia ulvifolia* All species not mentioned in other groups

15 points: Aponogeton ulvaceus, Aponogeton undulatus Anubias All species Cryptocoryne All species Echinodorus All species

20 points: *Aponogeton* species not mentioned in other point classes *Lagenandra* All species *Samolus parviflorus* 

### **Group D - Water Lily Type Plants**

Plants which root in the mud with the roots growing from a stout rootstock. The leaves have long petioles (stems) and they float on the surface of the water. The flowers are on the surface of the water, and the fruits sink after ripening. *Aponogeton distachyus*, (only one of this genus in this group),

5 points: *Aponogeton distachyus* 

10 points: Brasenia schreberi Nymphoides aquatica (banana plant) All species not mentioned in other groups

15 points: Barclaya longifolia Nupar All species Nymphaea All species

20 points: *Orontium* All species

### **Group E - Stem Plants**

Plants with long stems with leaves. Typically root in the substrate. They are dependent on life in the water, but at the same time can have contact with the air (floating leaves, emmersed part of the stem and the blossoms). Many aquarium species belong to this group

### 5 points: *Elodea* All species

10 points: Alternanthera reineckii Bacopa amplexicaulis, B. caroliniana, B. monnieri Cardamine lyrata Didiplis diandra Gymnocoronis spilanthoides Heteranthera zosterifolia Hottonia inflata Hygrophilia: All species Ludwigia arcuata, L. inclinata, L. repens

15 points: *Myriophyllum* all species not banned *Ludwigia glandulosa*,

20 points: Ammania species Cabomba aquatica, Cabomba furcata Eichhornia diversifolia Hottonia palustris Nesaea pedicillata

### **Group F - Bog Type Plants**

Shore plants living only in the partly emerged and terrestrial phases. Strong stems tower above the water. They usually have a short submerged stage. The presence of water is necessary for their growth.

5 points: *Sparganium:* all species

10 points: Acorus calamus Alisma plantago, A. aquatica, A. gramineum Canna species Cyperus alternifolius, C. papyrus Equisetum hyemale Iris fulva I, versicolor

Pontedaria cordata Regnellidium diphyllum Saururus cernuus Typha latifolia, T. minima All species not mentioned in other groups

Lysimachia nummularia Lobelia cardinalis Najas flexilis, N. guadalupensis Potamogeton gayi, P. perfoliatus Rotala macrandra, R. rotundifolia, R. wallichii Shinnersia rivulari Zosterella dubia All species not mentioned in other groups. 15 points: *Limnacharis flava* 

20 points: None

# **Group G - Creeping Shoot Plants**

This class includes low growing plants that spread by a creeping shoot bearing a new leaf at a regular interval. They are most frequently used as foreground plants in aquatic gardening.

5 points: None

10 points: *Hydrocotyle leucocephala*, H. *verticillata* 

15 points: Elatine triandra Glossostigma elatinoides Lilaeopsis brasiliensis, L. mauritiana, L, novae-zealandiae Ranunculus limosella Sellaria radicans All plants not mentioned in other groups

20 points: *Hydrocotyle vulgaris* and *sibthorpiodes Marsilea* species *Pilularia* species

# Group H - Primitive Plants: Aquatic Ferns, Mosses, & Liverworts

This class contains all aquatic ferns and mosses not listed in other categories. All species herein grow under water as a normal circumstance.

5 points: *Ceratopterus* species *Vesicularia dubyana* 

10 points: Bolbitis Isoetes lacustris, I. valeta Microsorium All plants not mentioned in other groups

15 points: Fontinalis antipyretica 20 points: None

### Group I - All Marine Macroalgae

Marine Macroalgae (Green, Red & Brown) and Grasses. Alga - Most marine plants are types of alga. For our purpose the algae which will be considered for the HAP program are certain forms of green, red, & brown macroalga. Algae compose a collection of primitive plants characterized by a reproduction system that does not require the formation of flowers or seeds. Macroalga are generally anchored to the substrate by a root-like "holdfast" that performs the sole function of attachment; it does not extract nutrients from the environment, as do the roots of higher plants. These algae often have a vegetative portion which is divisible into stem-like blades and which may possess leaf-like branchlets. These macroalga are photosynthetic. Macroalga are large enough to be easily seen and examined. Microalga include the many microscopic, mostly single-celled forms. Among marine alga only macroalga forms will be eligible for inclusion in the program; microalga forms are not be eligible for inclusion.

### **Red Macroalga (Rhodophyta)**

5 points: None

10 points: Galaxaura marginata Botryocladia

15 points: Galaxaura oblongata

- 20 points:
- Acanthophora Amphiroa Anotrichum Asparagopsis Centroceras Ceraminum Champia Chondria Coelothrix Dasya Dictyurus

Eupogodon Galaxaura Griffithsia Haloplegma Haliptilon Halymenia Helerosiphonia Jania Kallymenia Laurencia Liagora

Martensia Porolithon Pterocladia Spyridia Trichogloea Trichogloepsis Wrangelia All species of red macroalga not included in other point classes

Green Macroalga (Chlorophyta)

5 points: Caulerpa mexicana, C. prolifera, C. racemosa, C. serularioides Enteromorpha 10 points: Bryopsis All species Caulerpa crassifolia, C. lanuginosa, C. serrulata Chaetomorpha All species Cladophora prolifera Codium decorticatum

15 points: Batophora oerstedii Caulerpa cupressoides, C. verticillata Chlorodesmis Cladocephalus All species Codium repens Dasycladus vermicularis

Dictyophaeria cavernosa Neomeris annulata Penicillus All species(Shaving Brush) Rhipilea All species Ulva All species Valonia

20 points:		
Acetabularia	Dasycladus	Polyphysa
Adadyomene	Dictyophaeria	Rhipocephalus
Avrainvillea	Halimeda	Udotea
Chamaedons	Microdictyon	Ulvarua
Cymopolia	Neomeris	
All species of green macroalga	a not mentioned in other point cla	asses

### Brown Macroalga (Phaeophyta)

5, 10, & 15 points: None

20 points:ChnoosporaHydroclathrusColpomeniaLobophoraCystoseiraPadinaDictyotaRosenvingeaAll species not mentioned in other point classes

Sargassum Turbinaria.

### Group J. D – All species of marine flowering plants: Grasses & Mangroves

Grasses - The higher marine plants included in the HAP are mostly flowering grasses. The higher marine plants possess true roots and use them to obtain nutrients. They also have true stem and leaf structures. They may reproduce vegetatively, but have true flowers as well. The flowers are pollinated to produce seeds and seedlings, a form of sexual reproduction.

5 points: None

10 points: *Thalassia testudinim* (turtle grass) All species of marine plants not mentioned in other point classes

15 points: Halophila englemannii

20 points: Halophila decipiens Laguncularia racemosa (White Mangrove) Rhizopora mangle (Red Mangrove)

Plant Name	Group	Points
Acanthophora	Ι	20
Acetubularia	Ι	20
Acorus calamus	F	10
Adadyomene	Ι	20
Aldrovanda vesiculosa	А	10
Alisma aquatica	F	10
Alisma gramineum	F	10
Alisma plantago	F	10
Alternanthera reineckii	Е	10
Ammania	Е	20
Amphiroa	Ι	20
Anotrichum	Ι	20
Anubias	С	15
Aponogeton all other sp.	С	20
Aponogeton distachyus	D	5
Aponogeton ulvaceus	С	15
Aponogeton undulatus	С	15
Asparagopsis	Ι	20
Avrainvillea	Ι	20
Azolla caroliniana	А	10
Azolla pinnata	Banned	
Bacopa amplexicaulis	Е	10
Bacopa caroliniana	Е	10
Bacopa monnieri	Е	10
Barclaya longifolia	D	15
Batophora oerstedii	Ι	15
Blyxa aubertii	В	20
Blyxa japonica	В	20
Bolbitis	Н	10
Botryocladia	Ι	10
Brasenia schreberi	D	10
Bryopsis	Ι	10
Butomus umbellatus	Banned	
Cabomba aquatica	E	20
Cabomba caroliniana	Banned	
Cabomba furcata	Е	20
Callitriche stagnali	Banned	
Canna	F	10
Cardamine lyrata	E	10
Caulerpa crassifolia	Ι	10
Caulerpa cupressoides	Ι	15
Caulerpa lanuginosa	Ι	10
Caulerpa mexicana	Ι	5

Caulerpa prolifera	Ι	5
Caulerpa racemosa	Ι	5
Caulerpa serrulata	Ι	10
Caulerpa serularioides	Ι	5
Caulerpa taxifolia	Banned	
Caulerpa verticillata	Ι	15
Centroceras	Ι	20
Ceraminum	Ι	20
Ceratophyllum	А	5
Ceratopterus	Н	5
Chaetomorpha	Ι	10
Chamaedons	Ι	20
Champia	Ι	20
Chnoospora	Ι	20
Chlorodesmis	Ι	15
Chondria	Ι	20
Cladocephalus	Ι	15
Cladophora prolifera	Ι	10
Codium decorticatum	Ι	10
Codium repens	Ι	15
Coelothrix	Ι	20
Colpomenia	Ι	20
Crinum aquatica	С	10
Crinum natans	С	10
Crinum thaianum	С	10
Cryptocoryne	С	15
Cymopolia	Ι	20
Cyperus alternifolius	F	10
Cyperus helferi	В	20
Cyperus papyrus	F	10
Cystoseira	Ι	20
Dasya	Ι	20
Dasycladus	Ι	20
Dasycladus vermicularis	Ι	15
Dictyophaeria	Ι	20
Dictyophaeria cavernosa	Ι	15
Dictyota	Ι	20
Dictyurus	Ι	20
Didiplis diandra	Е	10
Echinodorus	С	15
Egeria densa	Banned	
Eichhornia	А	15
Eichhornia crassipes	Banned	
Eichhornia diversifolia	Е	20
Elatine triandra	G	15

Eleocharis acicularis	В	10
Eleocharis parvula	В	10
Eleocharis vivipara	В	10
Elodea	Е	5
Enteromorpha	Ι	5
Equisetum hyemale	F	10
Eupogodon	Ι	20
Fontinalis antipyretica	Н	15
Galaxaura	Ι	20
Galaxaura marginata	Ι	10
Galaxaura oblongata	Ι	15
Glossostigma elatinoides	G	15
Gracillaria	Ι	
Griffithsia	Ι	20
Gymnocoronis	Е	10
spilanthoides		
Halimeda	Ι	20
Haliptilon	Ι	20
Halophila decipiens	J	20
Halophila englemannii	J	15
Haloplegma	Ι	20
Halymenia	Ι	20
Helerosiphonia	Ι	20
Heteranthera zosterifolia	Е	10
Hottonia inflata	Е	10
Hottonia palustris	Е	20
Hydrilla verticillata	Banned	
Hydroclathrus	Ι	20
Hydrocotyle leucocephala	G	10
Hydrocotyle sibthorpiodes	G	20
Hydrocotyle verticillata	G	10
Hydrocotyle vulgaris	G	20
Hygrophila polysperma	Banned	
Hygrophilia	E	10
Ipomoea aquatica	Banned	
Iris fulva	F	10
Iris pseudacorus	Banned	
Iris versicolor	F	10
Isoetes lacustris	Н	10
Isoetes valeta	Η	10
Jania	Ι	20
Kallymenia	Ι	20
Lagarosiphon major	Banned	
Lagenandra	С	20
Laguncularia racemosa	J	20
Laurencia	Ι	20

Lemna	А	5
Liagora	Ι	20
Lilaeopsis brasiliensis	G	15
Lilaeopsis mauritiana	G	15
Lilaeopsis novae-	G	15
zealandiae		
Limnacharis flava	F	15
Limnobium laevigatum	А	10
Limnobium spongia	А	10
Limnobium stoloniferum	А	10
Limnophila sessiliflora	Banned	
Lobelia cardinalis	E	10
Lobophora	Ι	20
Ludwigia	А	10
Ludwigia arcuata	Е	10
Ludwigia glandulosa	E	15
Ludwigia inclinata	E	10
Ludwigia repens	Е	10
Lysimachia nummularia	Е	10
Lythrum salicaria	Banned	
Marsilea	G	20
Marsilea quadrifolia	Banned	
Martensia	Ι	20
Microdictyon	Ι	20
Microsorium	Н	10
Monochoria hastate	Banned	
Monochoria vaginalis	Banned	
Myriophyllum	Е	15
Myriophyllum aquaticum	Banned	
Myriophyllum	Banned	
heterophyllum		
Myriophyllum spicatum	Banned	
Najas flexilis	Е	10
Najas guadalupensis	Е	10
Najas minor	Banned	
Nasturtium microphyllum	Banned	
Nasturtium officinale	Banned	
Nelumbo lutea	Banned	
Neomeris	Ι	20
Neomeris annulata	Ι	15
Nesaea pedicillata	Е	20
Nupar	D	15
Nymphaea	D	15
Nymphoides aquatica	D	10
Nymphoides peltata	Banned	
Orontium	D	20

Ottelia ulvifolia	С	10
Ottellia alismoides	Banned	
Padina	Ι	20
Penicillus	Ι	15
Phragmites australis	Banned	
Pilularia	G	20
Pistia stratiotes	Banned	
Polyphysa	Ι	20
Pontedaria cordata	F	10
Porolithon	Ι	20
Potamogeton crispus	Banned	
Potamogeton gayi	Е	10
Potamogeton perfoliatus	Е	10
Pterocladia	Ι	20
Ranunculus limosella	G	15
Regnellidium diphyllum	F	10
Rhipilea	Ι	15
Rhipocephalus	Ι	20
Riccia fluitans	А	10
Rorippa microphylla	Banned	
Rorippa nasturtium-	Banned	
aquaticum		
Rosenvingea	Ι	20
Rotala macrandra	Е	10
Rotala rotundifolia	Е	10
Rotala wallichii	Е	10
Sagittaria eatonii	В	10
Sagittaria graminea	В	10
Sagittaria sagittifolia	Banned	
Sagittaria subulata	В	10
Salvinia all other species	A	5
Salvinia auriculata	Banned	
Salvinia biloba	Banned	

Salvinia cucullata	А	20
Salvinia herzogii	Banned	
Salvinia molesta	Banned	
Samolus parviflorus	С	20
Sargassum	Ι	20
Saururus cernuus	F	10
Sellaria radicans	G	15
Shinnersia rivulari	Е	10
Sparganium	F	5
Spirodela polyrhiza	А	5
Spyridia	Ι	20
Subularia aquatica	В	15
Thalassia testudinim	J	10
Trapa natans.	Banned	
Trichogloea	Ι	20
Trichogloepsis	Ι	20
Turbinaria	Ι	20
Typha latifolia	F	10
Typha minima	F	10
Udotea	Ι	20
Ulva	Ι	15
Ulvarua	Ι	20
Utricularia	А	20
Vallisneria americana	В	10
Vallisneria gigantea	В	10
Vallisneria natans	В	10
Vallisneria spiralis	В	5
Vesicularia dubyana	Н	5
Wolffia arrhiza	A	10
Wrangelia	Ι	20
Zosterella dubia	Е	10