

## HANDY GUIDE TO AQUATIC PLANTS IN IRELAND

Floating: Nymphaea, Nuphar, Nymphoides, Potamogeton, Lemna

Rooted rosettes: Isoetes, Lobelia, Littorella, Subularia

Ribbon-leaves: Sagittaria, Stratiotes, Potamogeton, Sparganium

Simple alternate: Potamogeton, Lagarosiphon, Persicaria, Fontinalis antipyretica

Opposite pairs: Crassula, Callitriche,

Simple whorls: Elodea (3), Egeria (4-6), Hydrilla (4-5)



Elodea  
Egeria  
Lagarosiphon  
Hippuris, Hydrilla

Ceratophyllum  
Ranunculus  
Utricularia

Hottonia  
Myriophyllum

Other Compound leaves: *Apium inundatum* (Bipinnate, fine hair like branches)

*Oenanthe aquatica* (Tripinnate; narrow leaflets, becoming emergent and cow-parsley-like)

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### Waterlilies

*Nuphar lutea* (2<sup>nd</sup>ry veins arising along midrib; Yellow flwr; over-wintering leaves lettuce like, petiole angular)

*Nymphaea alba* (2<sup>nd</sup>ry veins arising from petiole; White flwr; petiole round, margin entire)

*Nymphoides peltata* (Yellow flwr; margin scalloped). – an alien invasive species

*Hydrocharis morsus-ranae* (white flwr; leaves small, thick, rounded, margin smooth)

### Duckweeds

*Lemna gibba* (Fat duckweed – bead-like)

*Lemna minor* (2-4 mm across)

*Lemna minuta* (1 mm across)

*Lemna trisulca* (Ivy-leaved, usually submerged, sitting on plants or sediment)

*Spirodela polyrhiza* (4-5 mm across; 2-4 roots)

### Starworts Submerged leaves long and linear, floating leaves blunt, ovate

*Callitriche brutia* (leaves expanded at tip and notched)

*Callitriche hamulata* (leaves expanded at tip and notched)

*Callitriche hermaphroditica* (fruits winged)

*Callitriche obtusangula*

*Callitriche palustris*

*Callitriche platycarpa*

*Callitriche stagnalis*

*Callitriche truncate* (very long styles)

## Waterplantains & Arrowheads (Rooted in mud, leaves floating to emergent, or in water column)

- Alisma lanceolatum* (Carpels arranged symmetrically)
- Alisma plantago-aquatica* (Carpels arranged symmetrically; blade cordate/blunt)
- Baldellia ranunculoides* (Smells of Cumin; Carpels arranged irregularly)
- Luronium natans* (leaves float rather than emergent; 1 lake in Galway)
- Persicaria hydropiper* (stipule a papery sheath around stem; leaves)
- Ranunculus lingua/flammula* (Leaf bases sheathing, stems reddish)
- Sagittaria sagittifolia* (submerged leaves long and ribbon-like; aerial leaves spearhead)
- Sagittaria rigida* (emergent leaves ovate, rarely with small lobes)
- Stratiotes aloides* (watersoldier – floating in summer; leaf margins toothed)
- Sparganium angustifolium* (Ribbon-like, triangular, fleshy leaves)

## Rooted, submerged rosette plants

- Lobelia dortmanna* (West of Ireland; leaf tips blunt; leaves with 2 air-chambers)
- Eriocaulon aquaticum* (Leaves septate, apex finely pointed; roots with dark and light striations)
- Isoetes* (Leaves rounded, with 4 air-chambers)
- Littorella uniflora* (Leaves round, solid)
- Subularia aquatica* (Leaves round to angular, solid)

## Canadian Pondweeds

- Elodea canadensis* (whorls of 3, blunt/acuminate-tipped lvs, broad, straight)
- Elodea nuttallii* (whorls of 3; acute-tipped lvs, narrow, recurved)
- Lagarosiphon major* (alternate curled leaves)
- Fontinalis antipyretica* (an aquatic moss; lvs alternate, pale tips to shoots)
- Egeria densa* (whorls of 4-5 (3 at base))
- Hydrilla verticillata* (whorls of 4; lvs serrate, tapering to apex)
- Hippuris vulgaris* (whorls of 6-12 lvs, submerged leaves flaccid)
- Crassula helmsii* (leaves slightly succulent, in opposite pairs)

## Hair-like leaves

- Isolepis fluitans* (*Eleogiton fluitans*) (Floating, rounded leaves, spongy)
- Juncus bulbosus* (leaf bases with auricles; roots [bulbous] at nodes; transverse septae)
- Potamogeton pectinatus* (leaves hair-like, 2 major air-chambers, other smaller ones; sheaths split conspicuous and free of stem)
- Potamogeton filiformis* (leaves hair-like; 2 air-chambers; sheaths closed)
- Ruppia cirrhosa* (leaf margin dentate; no midrib; 2 air-chambers; peduncles long, sometimes coiled/spiral)
- Ruppia maritime* (leaf margin dentate; no midrib; 2 air-chambers; peduncle as short as pedicels)
- Najas flexilis* (leaf margins dentate; fruits asymmetric)
- Zannichellia palustris* (Leaves opposite; fruits horned, clustered, sessile in axils - right)



## DIVIDED leaves

### Water crowfoots (divided leaves, alternate)

Ranunculus subgenus batrachium – white petals, usually heterophyllous (leaves of 2 kinds)

Extremely variable. Usually impossible to identify in vegetative state. Most have a mixture of variable laminar and capillary leaves, and collections must comprise the entire plant from root to tip.

*R. hederaceus* and *R. omiophyllus* never have capillary leaves.

*R. tripartitus* (hetero; one coastal pond near Baltimore)

*R. fluitans* (capillary leaves 8-50 cm; nectar-pits pyriform; Co Antrim only, Six-mile river, from Dunadry to mouth only.)

*R. aquatilis* (hetero; petals 3.5-10 mm; nectar-pits circular)

*R. peltatus* (hetero; leaves rigid or collapsing, shorter or = internode; petals 5.5-15 mm; nectar-pits pyriform)

*R. penicillatus* (hetero; leaves collapse to a tassel; petals 10-15 mm, leaves longer than internode; nectar-pits pyriform)

*R. circinatus* (rigid capillary leaves, not collapsing out of water; like spokes of a bicycle wheel; nectar-pits crescents)

*R. baudotii* [?subsp. of *peltatus*] (hetero; nectar-pits crescent; saline lakes, a )

*R. trichophyllus* ( nectar-pits crescents;

### Hornworts (Divided leaves )

*Ceratophyllum demersum* (rigid; leaves divided 1-2 times)

*Ceratophyllum submersum* (soft; leaves divided 3-4x)

### Bladderworts (Divided leaves with traps)

*Utricularia ochroleuca* / *Utricularia intermedia* (Bladders on separate stolons)

*Utricularia minor* (Leaf segments untoothed)

*Utricularia vulgaris* / *Utricularia australis* (Leaf segments toothed, stems of 1 type)

### Water Millfoils (Pinnate leaves, in whorls)

*Myriophyllum aquaticum* (emergent; glaucous lvs)

*M. verticillatum* (Lvs lngr than internodes; in whorls of 5s, 1-5-4.5cm; 15-40 lflts/side)

*M. spicatum* (Lvs more rigid, usually fewer lflts, 6-18 lflts/side; reddish tinge)

*M. alterniflorum* ( )

*Hottonia palustris* (Water violet – flattened pinnate leaves)

## True Pondweeds (*Potamogeton*)

- Groenlandia densa (Translucent, sessile & opposite leaves)
- Potamogeton crispus (Leaf margin serrate; entire blade undulate)
- Potamogeton perfoliatus (Leaf base amplexicaul)

### Hair-like leaves (beware *Juncus*, *Ruppia*, *Najas* & *Zannichellia*)

- Potamogeton pectinatus (leaves hair-like, sheaths split conspicuous and free of stem)
- Potamogeton filiformis (leaves hair-like; sheaths closed)

### Narrow, parallel-sided leaved; stems usually compressed

- Potamogeton friesii (leaves 1.5-3.5mm wide; 4-veins; apex acuminate; stipules tubular, BUT soon splitting)
- Potamogeton pusillus (leaves 1-2 mm wide; 2-veins; apex acute; stipules tubular)
- Potamogeton obtusifolius (leaves 2.5-3.5 mm wide; 2-4-veins; apex acuminate; stipules split; leaves clustered near surface, 'hands' at ends of branches)
- Potamogeton berchtoldii (leaves 1-2 mm wide; 2-veins; obtuse/acute tips; stipules split; stems round; leaves not clustered)

### Small leaves

- Potamogeton gramineus (small submerged lvs; occ with long-petioled floating lvs; leaf edges convex)
- Potamogeton gramineus x perfoliatus = P. x nitens

### Leaves translucent, broadest at base, tapering above

- Potamogeton alpinus (tapering to blunt tip)
- Potamogeton praelongus (Lvs hooded at apex)
- Potamogeton lucens (large translucent leaves; apex long-acuminate)
  - Potamogeton lucens x gramineus = P. x angustifolius
  - Potamogeton lucens x perfoliatus = P. x salicifolius

### Opaque, floating leaves

- Potamogeton natans (Stipules large, split; subm. Lvs grass-like; floating lvs to 10cm)
- Potamogeton coloratus (Floating leaves translucent; apparently (but not actually) opposite)
- Potamogeton polygonifolius (Floating leaves, opaque; usually confined to bogs)